

वार्षिक प्रतिवेदन

Annual Report

2021-22



भारतीय अभियांत्रिकी विज्ञान एवं प्रौद्योगिकी संस्थान, शिवपुर

Indian Institute of Engineering Science and Technology, Shibpur



वार्षिक प्रतिवेदन

Annual Report

2021 - 22

(April 01, 2021 - March 31, 2022)

भारतीय अभियांत्रिकी विज्ञान एवं प्रौद्योगिकी संस्थान, शिवपुर

Indian Institute of Engineering Science and Technology, Shibpur



From the Desk of the Chairperson

I am glad to observe that the IIEST community is returning to normal life as the deadly Covid-19 pandemic is increasingly losing its grip. The campus will again be abuzz with students as all academic activities will soon be conducted offline.

The Institute has undergone several positive reforms in the last few years. The much-needed ERP system is almost functional now. The Digital Education Hub, established to support the online teaching-learning process, operated efficiently during the time frame of the pandemic. The construction of the Ministry-sanctioned hostel for accommodating male students of IIEST is progressing as per the schedule. The academic buildings, hostels and the guest house of the Institute are being renovated with the help of CPWD. All major roads on the campus have been reconstructed as well as the greenery on the campus has been carefully nurtured. The DST-IIEST Solar PV Hub, virtually inaugurated by the Honourable Union Minister Shri Ramesh Pokhriyal 'Nishank' in October 2020, is functional at present.

The students of IIEST Shibpur are making the Institute proud by regularly winning laurels in national and international level competitions and also securing prestigious fellowships and scholarships for training and higher studies. The placement scene looks even better for the Institute as the pandemic is increasingly getting ineffective. The faculty members have consistently published in reputed journals and undertaken research projects and consultancies. However, more effort in R&D sectors is necessary for establishing IIEST as a world class research-oriented organisation.

Many new scholarships are being offered to the students by the alumni association, GAABESU. 1989 B.E. batch and 1990 B.Arch. batch have helped in building an international standard volleyball court on the campus.

IIEST Shibpur has put utmost effort during Covid-19 to continue its academic and administrative activities effectively. I congratulate the faculty members, non-teaching staff, and students for bravely facing the challenges imposed by the Covid-19 pandemic. However, as the pandemic is receding, now is the time to accelerate collective productivity.

I wish all the best to all the members of the Institute.

Jai Hind!

Vasudev K. Aatre

Chairperson, Board of Governors (BOG) IIEST, Shibpur



From the Desk of the Director

The Covid-19 pandemic that profoundly affected the world is haltingly receding now. The IIEST fraternity is looking forward to the students returning to the campus in full strength to attend inperson classes. I congratulate all the stakeholders for maintaining high standards in teaching and research and professionally carrying out administrative activities during the pandemic.

Fortunately, the pandemic is almost over, and now I urge faculty members to engage wholeheartedly in cutting-edge research work. Our students have performed exceptionally well in academics and extra-curricular activities, even during the pandemic. With the start of the offline classes, they will feel more integrated into campus life and further motivated to excel in their career.

The Institute is on the cusp of making the ERP system functional for its stakeholders. The work on the ten-storey hostel sanctioned by the Union Ministry is progressing well. IIEST has completed a census of all trees within the campus. The Institute has also taken up the work of a massive facelift of the old buildings, hostels, and the Guest House with the help of CPWD. All major roads on the campus have been reconstructed. The DST-IIEST Solar PV Hub, virtually inaugurated by the Honourable Union Minister Shri Ramesh Pokhriyal 'Nishank' in October 2020, is operational now.

The alumni association, GAABESU, has announced several "need-based" and "merit-based" scholarships for our students. An international standard volleyball court has been constructed with the support of the 1989 B.E. batch and 1990 B.Arch. batch of the Institute. Despite the pandemic, the placement scenario of our Institute appeared robust in the last two years, and it is likely to improve further with the economy becoming stronger.

From setting up a Covid-care facility on the campus to establishing a Digital Education Hub, IIEST has left no stone unturned to combat the pandemic in the last two years. Now, with the onset of the Post-Covid era, we must no longer waste opportunities to achieve excellence as an Institution.

I congratulate the Annual Report Preparation Committee of the Institute for preparing the Annual Report of 2021-22 with utmost sincerity.

I thank all the stakeholders for their continuous service and support in the functioning of the Institute. Jai Hind.

Parthasarathi Chakrabarti

Director IIEST, Shibpur

Vision

The Vision of Indian Institute of Engineering Science and Technology (IIEST), Shibpur is to become one of the best Institutes in the world in providing the state-of-the art multi-disciplinary research ambience that will usher innovative world-class technologies developed towards realizing the goal of Developed India, and thereby establish a unique identity for the institute amongst national and international academic and research organizations through knowledge creation, acquisition and dissemination for the benefit of society and humanity.

Mission

- To generate high quality human and knowledge resources in our core areas of competence and emerging areas to make valuable contribution in technology for social and economic development of the nation.
- To make focused efforts towards identification, monitoring and control of objective attributes of quality for continuous enhancement of academic processes, infrastructure and ambience.
- To efficaciously enhance and expand, even beyond national boundaries, its contribution to the betterment of technical education and offer international programmes of teaching, consultancy and research.

TABLE OF CONTENTS

3.9 Institute Result

3.10 Convocation

0	1	Organisation and Administration	d	0	4	Academic Units	
1.	Orga	anisation and Administration	3	Depa	ırtmeı	nts	
1.1	_	rd of Governors	4	4.		demic Units	55
1.2	The :	Senate	5	4.1	Aero	space Engineering and	55
1.3	Fina	nce Committee	5	·		lied Mechanics	
1.4	Build	ling and Works Committee	7	4.2		nitecture, Town and	56
1.5		ortant Functionaries	8		Regi	onal Planning	
1.6	Adm	inistration	9	4.3	Chei	mistry	59
1.7	Ward	den of Hostels	11	4.4	Civil	Engineering	60
1.8	Head	ds of the Departments	12	4.5	Com	puter Science and	61
1.9	Head	ds of the Schools and	13		Tech	nnology	
	Cent	res		4.6	Eart	h Sciences	62
				4.7	Elec	trical Engineering	64
				4.8	Elec	tronics and	66
$\mathbf{\cap}$	2	Human Resourc	Δς		Tele	communication	
U		Human Acsourc	CS		Engi	neering	
				4.9		nan Resource Management	68
2.	Hum	an Resources	17	4.10	Hum	nanities and Social Sciences	69
2.1	_	lemic Staff	18	4.11		rmation Technology	70
2.2		-Academic Staff Members	30	4.12		hematics	73
		Officers	J -	4.13		hanical Engineering	74
				4.14		allurgy and Material	76
					Scie		
$\mathbf{\cap}$	3	Academic		4.15		ng Engineering	78
U	J	Drogrammos		4.16	Phys	sics	79
		Programmes		Scho	ols		
				4.17	Adva	anced Materials, Green	81
3.		demic Programmes	45		Ener	gy and Sensor Systems	
3.1		r-Year BTech Degree / Five-	45	4.18		munity Science and	82
		Dual Degree (BTech –				nnology	_
	MTe	•		4.19		ster Mitigation Engineering	83
3.2		-Year BArch Degree	46	4.20		ogy, Infrastructure and nan Settlement	83
3.3		-Year MTech Degree	46			agement	
3.4		-Year MPlan Degree	47 . o	4.21		agement Sciences	84
3.5		-Year MSc Degree	48 . o	4.22		hatronics and Robotics	86
3.6 3.7	PhD	-Year MBA	48 . 8	4.23	VLS	Technology	87
3.8		lent Strength	48 49	Cent	re		
٠.٠	2140		47				

4.25

49

52

Healthcare Science and

Technology

88

n	5	Sponsored Research	:h	7.5		itional Training or Summer riship	134
U	J	and Industrial					
		Consultancy			8	Faculty	
				O	U	Recruitment	
5.1	•	nsored Research and	93				
5.2		strial Consultancy Activities arch Account Statement for	94	8.1		us of Regular Faculty	139
J		ast two financial years	J+	8.2		uitment cial drive for Faculty	120
5.3	_	lights of ongoing sponsored	95	0.2	•	uitment against backlog	139
. (arch Activities or Consultancy Projects	106		rese	rved vacancies	
5.4	iviajo	i Consultancy Projects	100		•		
	_	In althorism's		0	9	Academic	
0	6	Institution's				Contributions	
		Innovation Counc	<u>il </u>				
				9.1		nal Publication	143
6.1		ut IIC 4.0	111	9.2		ks Authored	177
6.2	•	functionaries	111	9.3		< Edited < Chapters Authored	178
6.3		urce Strength (Human tal and Physical Capital)	112	9·4 9·5	·		179 186
6.4		ities, Infrastructure of Pre-	113	9.5 9.6	- · · · -		188
•		pation & Incubation in	3	9.7			192
	Pron	notion of Innovation and				·	
	Entre	epreneurship in the Campus					
6.5		evements	114	1		Picture Gallery	
6.6		light of few best IIC	115			· ·	
		Ity/Student Members and Achievements/ Rewarded					
		ne Innovations at Different		10.	Inst	tutional Programs	201
	Foru						
6.7	_	lights of Selected Best vations & Images with	118	4	4	Students' Acaden	nic
		tion of Inventor/Innovation			1	Performance and	ı
	Nam	e				Amenities	•
6.8		light Selected Start-Ups blished by	124			Amemues	
		ents/Faculties with Mention			Da	rformance in GATE	242
		ounder/Cofounder Name		11.1 11.2		udents' Amenities	213 214
				11.2	30	odenes / unemeles	2-4
	7	Training and			_		
U	7	Placement		1	2	Annual Accoun	ts
		1 iacciliciit					
7.1	The I	Mandate	129	12.1	Δn	nual Accounts	225
, 7.2		stry-Connect and allied	129	12.1		dit Report	225 281
	even	ts				- r	
7.3		ement Statistics	130				
7.4	Recr	uiters	133				

Organisation and Administration

1. Organisation and Administration

Established as the Calcutta Civil Engineering College in November 1856, this pioneering Institute, after several changes in its name at three different addresses, was lastly converted to an Indian Institute of Engineering Science and Technology by an amendment of the NITSER Act 2007. Today the Institute is an Institute of National Importance and its organizational and governing structure are on the lines of National Institutes of Technology (NITs). The Institute has four authorities, namely:

The Board of Governors	Authorities under the
The Senate	NITSER Act 2007
The Finance Committee	Authorities under the
The Building and Works Committee	IIEST Statutes 2017

The NITSER Council co-ordinates the activities of the Institute and other Institutes governed under the same Act.

The Governing Structure of the Institute is as below:

- The President of India is the Visitor of IIEST, Shibpur. As provided in the NITSER Act, 2007, the Visitor appoints the Chairperson and the Director of the Institute
- The Council of NITSER is the apex decision making body. The Council is headed by the Hon'ble
 Union Minister of Human Resource Development and it comprises the Chairpersons and the
 Directors of the NITs, the IISERs and the IISET Shibpur, beside other members including three
 Members of Parliament.
- The Board of Governors is responsible for the general superintendence, direction and control of the affairs of the Institute.
- The Senate of the Institute has the control and general regulation, and is responsible for the
 maintenance of standards of instruction, education and examination in the Institute. The Senate
 is empowered to frame and revise curricula and syllabi for the course of studies for various
 departments and to promote research in academic development activities.
- The Finance Committee is empowered to examine and scrutinise the annual budget of the Institute and make recommendations on any financial proposal to the Board.
- The Building and Works Committee undertakes construction of all major works after obtaining
 necessary administrative approval and expenditure sanction from the Board; it also enjoys the
 power to give the necessary administrative approval and expenditure sanction for minor works
 and to undertake the same.

During the year under review the Institute authorities-initiated actions towards framing of a large number of rules, regulations, ordinance, etc.

1.1 Board of Governors

The Board of Governors of the Institute is constituted as per provisions of Section 11 of the NITSER Act, 2007. During 2020-2021, the composition of the Board was as below.

Dr. Vasudev K. Aatre

Distinguished Scientist & former Secretary, Department of Defense Research & Development and Scientific Advisor to Raksha Mantri.

Chairperson

(from 25.02.2019 to 24.02.2022) E-mailvasudev.k.aatre@gmail.com

Smt. Darshana M Dabral

Joint Secretary & Financial Advisor to the Govt. of India, Ministry of Human Resource Development, Shastri Bhawan, New Delhi-110

Ex-Officio Member

E-mail- Jsfa.edu@giv.in Ph: 011-2338 2696

Secretary, Department of Scientific & Industrial Research (DSIR)

DG, Council of Scientific and Industrial Research (CSIR), Ministry of Science & Technology, Technology Bhawan, New Mehrauli Road, New Delhi – 110 016.

Member

(from 18.02.2019 to 07.02.2022)
E-mail- dgcsir@csir.res.in
Ph: +91-11-23710472, 23717053.

Prof. P. S. Avadhani

Director, IIIT, Agartala Agartala, Tripura – 799 046.

Dr. Parthasarathi Chakrabarti

Director, IIEST, Shibpur, Howrah – 711 103.

Ex-Officio Member

Ph- 033-26682674 Fax- 03326687575 E-mail- director@iiests.ac.in

Director, IISC, Bangalore

Sir C.V. Raman Avenue, Bangalore – 560 012.

Ex-Officio Member

Ph: 080-2360-0690 / 2293-2222 Secy. to Director: 080-2293-2954 Fax: 91-80-23600936 Email: office.director@iisc.ac.in

Secretary, Ministry of Steel

director@iisc.ac.in

Govt. of India Udyog Bhavan New - Delhi – 110 001.

Member

(from 18.02.2019 to 07.02.2022) E-mail- secy-steel@nic.in

Additional Secretary (TE) & CVO

Ministry of Education, Govt. of India, Shastri Bhawan, New Delhi – 110 001.

Ex-Officio Member

Ph- 011-23381097 Fax- 011-23386903 E-mail-ashe -mhrd@gov.in

Director, IIT, Guwahati

Guwahati - 781 039, India.

Member

(from 18.02.2019 to 07.02.2022)
Email: director@iitg.ac.in

Prof. Rohini Godbole

Centre for High Energy Physics IISC, Bangalore, Bengaluru – 560 012.

Member

(from 18.02.2019 to 07.02.2022)
E-mail- dgcsir@csir.res.in
Ph: +91-11-23710472, 23717053.

Secretary, Higher Education Department, Govt. of West Bengal

Prof. Amit Roy Chowdhury

Professor, Department of Aerospace Engineering and

Member

(from 18.02.2019 to 07.02.2022) E-mailpsavadhani@yahoo.com

psavadhani.csse@auvsp.edu.in

Prof. Prasid Syam

Professor, Department of

Electrical Engineering, IIEST,

Shibpur (Senate nominated).

Member

(from 16.07.2021 to 15.07.2023)

E-mail- ps@ee.iiests.ac.in

Bikash Bhavan, Salt Lake Kolkata- 700 091.

Ex-Officio Member

Email:

highereducationwb@gmail.com Ph: 033 2321 1280 Applied Mechanics, IIEST, Shibpur (Senate nominated).

Member

(from 16.07.2021 to 15.07.2023) E-mailamit@aero.iiests.ac.in

Prof. Suranjan Sinha

Registrar (Acting), IIEST, Shibpur (from 01.02.2021 to 31.05.2021)

Secretary to BOG

Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: rseqis@iiests.ac.in

Shri S. N Datta

Registrar (Acting), IIEST, Shibpur (from 17.01.2022 to 31.01.2022)

Secretary to BOG

Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

Prof. Rana Roy

Registrar (Acting), IIEST, Shibpur (from 01.06.2021 to 16.01.2022)

Secretary to BOG

Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

Dr. Devasis Datta

Registrar (Acting), IIEST, Shibpur (from 01.02.2022)

Secretary to BOG

Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

1.2 The Senate

It is constituted under Section 14 of the National Institute of Technology ACT, 2007 (29 of 2007), the National Institutes of Technology (Amendment) ACT, 2012 (No. 28 of 2012), and the National Institutes of Technology, Science Education and Research (Amendment) ACT, 2014 (no. 9 of 2014). The Senate of the Institute is its principal academic authority. All permanent professors of the Institute are the members of Senate.

1.3 Finance Committee

Dr. Vasudev K. Aatre

Distinguished Scientist & former Secretary, Department of Defense Research & Development and Scientific Advisor to Raksha Mantri.

Ex-Officio Chairperson

Prof. Parthasarathi Chakrabarti

Director, IIEST, Shibpur. **Ex-Officio Member**

Smt. Darshana M Dabral

Joint Secretary & Financial Advisor to the Govt. of India, MOE, or her nominee.

Ex-Officio Member

Additional Secretary (TE) & CVO

Ministry of Education, Govt. of India or his nominee Or Joint Secretary (NITs & DL), MoE, Govt. of India or his/her nominee.

Ex-Officio Member

Prof. P. S. Avadhani

Director, IIIT, Agartala Agartala, Tripura – 799 046. **Member** (upto 07.02.2022)

Prof. Shyamal Kumar Chattopadhyay

Professor, Dept. of Chemistry, IIEST, Shibpur.

Member (upto 15.07.2021)

Prof. Suranjan Sinha

Registrar (Acting), IIEST, Shibpur (from 01.02.2021 to 31.05.2021)

Ex-Officio Member Secretary

Prof. Rana Roy

Registrar (Acting), IIEST, Shibpur (from 01.06.2021 to 16.01.2022)

Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

Ex-Officio Member Secretary

Shri S. N Datta

Registrar (Acting), IIEST, Shibpur (from 17.01.2022 to 31.01.2022) Ph: 033-2668 1503 (O)

Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

Ex-Officio Member Secretary

Dr. Devasis Datta

Registrar (Acting), IIEST, Shibpur (from 01.02.2022) Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

Ex-Officio Member Secretary

Prof. Amit Roy Chowdhury

Professor, Department of Aerospace Engineering and Applied Mechanics, IIEST, Shibpur (Senate nominated).

Member

(from 16.07.2021 to 15.07.2023) E-mail- amit@aero.iiests.ac.in

From time to time, the Chairperson, in consultation with the Director, invites an expert as a special invitee. All financial proposals are placed before the Finance Committee before placing it to the Board for consideration and approval.

1.4 Building and Works Committee

The Building and Works Committee of the Institute is responsible for making technical scrutiny of the design, estimates and specifications of the material as may be considered necessary. It is also responsible for the enlistment of suitable contractors and the acceptance of tenders. It has the power to give directions for departmental works (where necessary) and to settle rates not covered by tender and settle claims and disputes with contractors.

The Committee undertakes construction of all major works after obtaining necessary administrative approval and expenditure sanction from the Board. It accords administrative approval and expenditure sanction for minor works and works of repair and maintenance within the approved budgetary provision of the Institute. It arranges the preparation of estimates of the cost of buildings and other capital works, minor works, repairs, maintenance, and the like and approves the cost estimates for minor works, minor repairs and maintenance.

During 2021-2022, the composition of the Committee was as below:

Prof. Parthasarathi Chakrabarti

Director, IIEST, Shibpur. **Ex-Officio Chairperson**

Prof. Sriman Kumar Bhattacharya

Vice Chancellor, Shiv Nadar University, Chennai, Kalavakkam - 603110, Tamil Nadu.

Member

One expert each from Civil and Electrical Engineering Wing of Central or State Government or any autonomous body of repute

Member

Shri Navneet Kumar

Jt. General Manager (Electrical), Rites Limited.

Director or Deputy Secretary

or his nominee dealing with the Institute in the Ministry of Education, Government of India

Ex-Officio Member

Prof. Sudip Kumar Roy

Dean, Planning and Development (Acting), IIEST, Shibpur (from 15.02.2021 to 26.10.2021)

Member

Prof. Suranjan Sinha

Registrar (Acting), IIEST, Shibpur (from 01.02.2021 to 31.05.2022)

Ex-Officio Member Secretary

Director or Deputy Secretary

or his nominee dealing with Finance of Institute in the Ministry of Education, Government of India Ex-Officio Member

Prof. Subhasis Bhaumik

Dean, Planning and Development (from 27.10.2021 to 26.10.2023)

Member

Prof. Rana Roy

Registrar (Acting), IIEST, Shibpur (from 01.06.2021 to 16.01.2022) Ph: 033-2668 1503 (O)

Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in

Ex-Officio Member Secretary

Shri Apurba Lal Panja,

Dy. General Manager (Civil).
Rites Limited

Shri S. N Datta

Registrar (Acting), IIEST, Shibpur (from 17.01.2022 to 31.01.2022)

Ph: 033-2668 1503 (O)
Fax: (091)-(033)-2668-29 16
E-mail: regis@iiests.ac.in
Ex-Officio Member Secretary

Dr. Devasis Datta

Registrar (Acting), IIEST, Shibpur (from 01.02.2022) Ph: 033-2668 1503 (O) Fax: (091)-(033)-2668-29 16 E-mail: regis@iiests.ac.in **Ex-Officio Member Secretary**

1.5 Important Functionaries

Chairman, Council of NITSER

Shri Ramesh Pokhrial 'Nishank'

Minister of Human Resource Development, Government of India

Chairman, Board of Governors

Dr. Vasudev K. Aatre

Director

Prof. Parthasarathi Chakrabarti.

Deans

Academic Affairs Prof. Sudip Kr Roy (from 30.07.2020)

Faculty Welfare Prof. Prasanta. Kumar Nandi (from 05.04.19 to

04.04.2022)

Research & Consultancy Prof. Subhasis Bhaumik (upto 17.10.2021)

Prof. Hafizur Rahaman (from 18.10.2021 to

17.10.2023)

Planning & Development Prof. Sudip Kumar Roy (from 15.02.2021 to

26.10.2021)

Prof. Subhasis Bhaumik (from 27.10.2021 to

26.10.2023)

Student Welfare Prof. Debabrata Mazumder (upto 20.03.2022)

Prof. Sudipta Mukhopadhyay (from 21.03.2022 to

20.03.2024)

International Relations & Alumni Affairs	Prof. Arindam Biswas (upto 02.03.2022) Prof. Debasis Datta (from 03.03.2022 to 02.03.2024)
Associate Deans	
Academic Affairs	Prof. Rana Roy (upto 24.02.2022) Prof. Asok Adak (from 25.02.2022 to 24.02.2024)
Faculty Welfare	Prof. Sulata Mitra
Research & Consultancy	Dr. Chinmay Bhattacharya (upto 21.02.2022) Dr. Papu Biswas (from 22.02.2022 to 21.02.2024)
Student Welfare	Dr. Asok Adak (upto 22.03.2022) Dr. Nityananda Nandi (from 23.03.2022 to 22.03.2024)
International Relations & Alumni Affairs	Dr.Soumen Mitra (from 15.07.2021 to 14.07.2023)
Registrar	
Prof. Suranjan Sinha (Acting Registrar) (upto	31.05.2022)

Prof. Rana Roy (Acting Registrar) (from 01.06.2021 to 16.01.2022)

Shri S.N. Datta (Acting Registrar) (from 17.01.2022 to 31.01.2022)

Dr. Devasis Datta Acting Registrar) (from 01.02.2022)

1.6 Administration

Director

Prof. Parthasarathi Chakrabarti Ph No: +91-33-26682674 Fax: +91-33-26687575 Email: director@iiests.ac.in

RegistrarProf. Suranjan Sinha

Registrar (Acting)
M: +91-9433401631 (upto 31.05.2021)
Prof. Rana Roy
Registrar (Acting)
(from 01.06.2021 to 16.01.2022)

Ph No: +91-33-26681503 Email: regis@iiests.ac.in

Shri S.N. Datta Registrar (Acting) (from 17.01.2022 to 31.01.2022)

Ph No: +91-33-26681503 Email: regis@iiests.ac.in

Dr. Devasis Datta Registrar (Acting) (from 17.01.2022 to 31.01.2022)

Ph No: +91-33-26681503 Email: regis@iiests.ac.in

Joint Librarian

Dr. Hari Prasad Sharma Ph No: +91-33-26684561 (284) Email: sharma_hp@hotmail.com

Assistant Librarian (Selection Grade)

Shri Shushil Kumar Barman Ph No: +91-33-26684561 (291) Email: sushilbarman@gmail.com

Assistant Librarian

Sri Abani Oraon Ph No: +91-33-26684561 (725) Email: abani@library.iiests.ac.in

Assistant Registrar

Dr. Bivore Das Ph No: +91-33-26684561 (643) Email: bibhor.das@gmail.com, arbd@iiests.ac.in

Chief Warden

Prof. Sudipta Mukhopadhyay Professor, Department of Mining Engineering Email:

sudiptailest@gmail.com

Superintending Engineer (Actg.)

Prof. Tapash Kumar Roy Ph No: +91-33-26684561(345) Email: uengineer@iiests.ac.in

Physical Instructor

Sri Sandip Chatterjee

Deputy Registrar (S&P)

Shri Sambhunath Datta Ph No: +91-33-26684561 M: +91-9433768194 Email: dr@iiests.ac.in (upto 31.01.2022)

Deputy Registrar (Finance)

Shri Alok Kumar Maity Ph No: +91-33-26684561 (216) Email: dr.finance@iiests.ac.in

Assistant Registrar

Shri Alok K. Mitra Ph No: +91-33-26684561 (276) Email: akmitra707@yahoo.co.in

Assistant Registrar

Sri Dipankar Chakraborty Ph No: +91-33-26684561 (640) Email: dcosd@yahoo.co.in

Medical Officer

Dr. Rubi Golder Ph No: +91-33-26684561 (332) Email: rubigolder@gmail.com

Chief Vigilance Officer

Prof. Abdur Rouf Professor, Department of Electrical Engineering Email: arouf@ee.iiests.ac.in

Physical Instructor

Dr. Zia-Ul-Alam

Deputy Registrar (Admin)

Dr. Devasis Datta Ph No: +91-33-26684561 M: +91- 9477215168 Email: d3dr.iiests@gmail.com

Deputy Registrar (Academic)

Dr. Nirmalya Bhattacharya Ph No: +91-33-26688081 M: +91-9831212905/9830844455 Email: controller@iiests.ac.in

Assistant Registrar & Internal Auditor

Shri Shib Sankar Basak Ph No: +91-33-26684561 (378) M: +91-9434144611 Email: shibu9355@yahoo.co.in, arssb@iiests.ac.in

First Appellate Authority

(Under the RTI Act 2005) Prof. Dipali Banerjee Professor, Department of **Physics** Email: faa@iiests.ac.in

Central Public Information Officer

Dr. Hari Prasad Sharma Ph No: +91-33-26684561 (284) Email: sharma_hp@hotmail.com

Workshop Superintendent

Dr. Dibyendu Chatterjee Email: dibeyendu_66o@rediffmail. com

Email:	Email:
c.sandip2010@gmail.com	alamzia2002@yahoo.com

1.7 Warden of Hostels

Chief Warden: Prof. Sudipta Mukhopadhyay

Name	Email Id	Hostel
Prof. Aditya Bandyopadhyay	bandyopadhyay.aditya@gmail.com	Wolfenden Hall
Shri Alok Kr. Mitra	akmitra7077@gmail.com	Hostel -14
Dr. Ananya Barui	ananya.pariksha@gmail.com	Sister Nivedita Hall
Dr. Ashis Kumar Bera	ashis@civil.iiests.ac.in	Hostel-11
Dr. Ayan Banerjee	ayanb12@gmail.com	Hostel-PG(H-13)
Dr. Chanchal Majumdar	chanchal@civil.iiests.ac.in	Richardson Hall
Prof. Chaitali Ray	chaitali@civil.iiests.ac.in	Pandya Hall
Dr. Dipankana Bhattacharjee	dipankana@civil.iiests.ac.in	Lt. Williams Hall of Residence
Dr. Nillohit Mukherjee	nillohit.mukherjee@gmail.com	A -39, A.K. Seal Hall (H-10), Downing
Dr. Nityananda Nandi	nityananda@aero.iiests.ac.in	MacDonald Hall
Dr. Pritam Saha	pritam@civil.iiests.ac.in	A.C. Roy Hall (H-7), A type Qrs (H-9 extn.)
Shri Sambhunath Dutta	dattasn@gmail.com	B.Sen Hall (H-9)
Prof. S. K. Karmakar	skk.besus@gmail.com	D. Banerjea Hall (H-8)
Prof. Subhash Mondal	scmondall@gmail.com	Hostel-16
Prof. Sudipta Mukhopadhyay	sudiptaiiest@gmail.com	Hostel-15
Dr. Sujata Biswas	sujata@civil.iiests.ac.in	Lt. Williams Hall of Residence
Dr. Sukumar Kundu	erskundu@gmail.com	Sen Hall
Dr. Tapas Roy	tapash2000@hotmail.com	Sengupta Hall

1.8 Head of the Departments

Departments	Name of Head	Tenure From	Tenure Upto
Aerospace Engineering and Applied	Prof. Amit Roychowdhury	15.11.2018	02.06.2021
Mechanics	Prof. Santanu Majumder	03.06.2021	31.03.2022
Architecture, Town and Regional Planning	Prof. Subrata Kumar Paul	10.07.2020	09.07.2022
Chemistry	Prof. Sudip Kr. Chattopadhyay Dr. Jhuma Ganguly	18.12.2019 18.12.2021	17.12.2021 17.12.2023
	Prof. Anirban Gupta	10.07.2018	09.07.2020
Civil Engineering	Prof. Ambarish Ghosh	10.07.2020	09.07.2022
Computer Science and Technology	Prof. Sekhar Mandal Prof. Asit Kumar Das	03.04.2019	30.05.2021
Earth Science	Prof. Bhabani Prasad Mukhopadhyay	03.05.2019	02.05.2021
	Dr. Ananya Mukhopadhyay	03.05.2021	02.05.2023
Electrical Engineering	Prof. Prasid Syam	01.06.2019	31.05.2021
	Prof. Konika Das Bhattacharya	01.06.2021	31.05.2023
Electronics and Telecommunication	-	15.11.2018	14.11.2021
Engineering	Prof. Susanta Kumar Parui	15.11.2021	14.11.2023
Human Resource Management	Prof. Manas Kumar Sanyal	23.08.2004	Until further order
	Prof. Partha Sarathi Roy	17.09.2018	16.09.2020
Humanities and Social Sciences	Shri Rupen Basu Mallick	17.09.2020	16.09.2022
Information Technology	Dr. Sukanta Das	10.07.2020	09.07.2022
Mechanical Engineering	Prof. Partha Pratim Dey Dr. Sudip Ghosh	08.05.2019 16.06.2021	16.06.2021 15.06.2023
Metallurgy and Materials Engineering	Dr. Manojit Ghosh Dr. Debdulal Das	24.05.2019 08.06.2021	07.06.2021 07.06.2023
Mining Engineering	Prof. Sudipta Mukhopadhyay Prof. Netai Chandra Dey	22.11.2018 18.11.2021	17.11.2021 17.11.2023
Mathematics	Prof. Tapan Kr. Kar Prof. Pritha Das	04.07.2019 06.07.2021	05.07.2021 05.07.2023
Physics	Dr. Krishnendu Mukherjee Dr. Syed Minhaz Hossain	20.06.2019 21.06.2021	21.06.2021 20.06.2023

1.9 Heads of Schools/ Centres

Schools

Schools	Name of Head	Tenure From	Tenure Upto
	Prof. Dipali Banerjee	13.03.2021	12.09.2021
Advanced Materials, Green Energy and Sensor Systems	Prof. Anup Mondal	13.09.2021	12.03.2022
	Prof. Mousumi Basu	17.03.2022	16.09.2022
	Prof. Hafizur Rahaman	10.01.2021	09.07.2021
Purabi Das School of Information Technology	Prof. Santi Prasad Maity,	10.07.2021	09.01.2022
	Prof. Monojit Mitra	10.01.2022	19.04.2022
	Prof. Ajit Kr. Mahapatra	10.01.2021	09.07.2021
Community Science and Technology	Prof. Susanta Chakraborty	12.07.2021	11.01.2022
	Prof. Ajit Kumar Mahapatra	12.01.2022	11.07.2022
	Prof. Aditya Bandyopadhyay	10.01.2021	09.07.2021
Disaster Mitigation Engineering	Prof. Partha Sarathi Mukhopadhyay	10.07.2021	09.01.2022
	Prof. Souvanic Roy	10.01.2022	09.07.2022
	Prof. Parthasarathi Mukhopadhyay	10.01.2021	09.07.2021
Ecology, Infrastructure and Human Settlement Management	Prof. Aditya Bandyopadhyay	10.07.2021	16.01.2022
3	Prof. Ambarish Ghosh	17.01.2022	Till further order
	Prof. Binay Krishna Ghorai	01.02.2021	31.07.2021
Management Sciences	Prof. Anirban Gupta	11.08.2021	10.02.2022
	Prof. Binay Krishna Ghorai	11.02.2022	05.04.2022
	Prof. Rana Roy	01.11.2020	12.05.2021
Mechatronics and Robotics	Prof. Anindita Sengupta	13.05.2021	16.11.2021
Mechationics and Robotics	Prof. Debasis Datta	17.11.2021	15.03.2022
	Prof. Santanu Das	16.03.2022	15.09.2022
	Prof. Santi Prasad Maity	11.01.2021	09.07.2021
VLSI Technology	Prof. Hafizur Rahaman	10.07.2021	17.10.2021
	Prof. Dipali Banerjee	18.10.2021	17.04.2022

Centres

Centres	Name of Head	Tenure From	Tenure Upto
	Prof. Susanta Chakraborty	10.01.2021	09.07.2021
Healthcare Science and Technology	Prof. Ajit Kumar Mahapatra	12.07.2021	11.01.2022
	Prof. Susanta Chakraborty	12.01.2022	11.07.2022
Water and Environmental Research	Prof. Debashis Moitra	10.01.2020	09.07.2020
	Prof. Chaitali Roy	10.07.2020	09.01.2021
	Prof. Ambarish Ghosh	10.01.2021	Till further order

Human Resources

2. Human Resources

As is true with the other CFTIs, sanctioned posts for both teaching and non-teaching posts are dependent on approved student intake of the Institute. Except in the case of employees paid from contingencies, the members of staff of the Institute are classified as under:

Academic staff: Director, Deputy Director, Professor, Associate Professor, Assistant Professor, Professor Training and Placement, and such other academic posts as may be decided by the Board from time to time.

Technical staff: System Manager, Workshop Superintendent, Librarian, Scientific Officers, Research Engineers, Deputy Librarian, Assistant Workshop Superintendent, System Analyst, Programmer, Foreman, Technician, Instructor, Laboratory Assistant, Mechanic, Overseer, Technical Assistant, Draftsman, and such other technical posts as may be decided by the Board from time to time.

Administrative and others staff: Registrar, Deputy Registrar and Assistant Registrar, Accounts Officer, Audit Officer, Estate Officer, Executive Engineer, Assistant Engineer, Junior Engineer, Medical Officer, Medical Assistant, Horticultural Assistant or Officer, Office Superintendent, Security Officer, Stores Officer, Store Keeper, Office Assistants, Data Entry Operators and such other Administrative and other staff as may be decided by the Board from time to time.

Conversion of this institute from a State University to a CFTI was realized through enactment of the NITSER (Amendment) Act 2014.

The pay scale enjoyed by the employees are at par with that in other CFTIs and, as provided in the IIEST Statutes, the employees of the Institute are entitled to allowances as admissible to the Central Government Employees. The employees of the Institute are governed by the Central Civil Services (Conduct) Rules, 1964.

The Institute is yet to frame the code of conduct for employees and, as such, the Institute follows the Central Civil Services (Classification, Control and Appeal) Rules, 1965 as per provisions laid down in Section 25 of the IIEST Statutes. The leave for all the employees of the Institute is governed by the Central Civil Services (Leave) Rules 1972.

As per MHRD Guidelines the ratio of academic and non-academic staff members at the Institute should be around 1:1.1. But at the time of its conversion in 2014 the staff position was significantly skewed towards non-academic staff and right sizing will require some time

2.1 Academic Staff

The academic staff scenario in 2021-22 is shown in Table 2.1 and Table 2.2. Details of Academic staff members in various Academic Departments, Schools and Centre are furnished below:

Table 2.1: Regular Faculty Members of individual Departments

Department of Aerospace Engineering and Applied Mechanics (AE & AM)

Sl. No.	Name	Designation	Highest Degree
1	Sujay Kumar Mukherjea	Professor	PhD
2	Salil Haldar	Professor	PhD
3	Subhasis Bhaumik	Professor (HAG)	PhD
4	Koustuv Debnath	Professor	PhD
5	Amit Roy Chowdhury	Professor (HAG)	PhD
6	Santanu Majumder	Professor	PhD
7	Rana Roy	Professor	PhD
8	Basudeb Bhattacharyya	Associate Professor	PhD
9	Nityananda Nandi	Associate Professor	PhD
10	Prithwish Kumar Das	Associate Professor	PhD
11	Mihir Chandra Manna	Associate Professor	PhD
12	Niloy Khutia	Associate Professor	PhD
13	Pabitra Halder	Associate Professor	PhD
14	Debashis Pal	Assistant Professor Grade I	PhD
15	Krishnendu Bhowmik	Assistant Professor Grade II	M.Sc. (Engg.)
16	Joydeep Bhowmik	Assistant Professor Grade II	PhD
17	Pratim Kumar	Assistant Professor Grade II	PhD
18	Prince Raj Lawrence Raj	Assistant Professor Grade II	PhD
19	Indrajit Mukherjee	Assistant Professor Grade II	PhD

Department of Architecture, Town and Regional Planning

Sl. No.	Name	Designation	Highest Degree
1	Aditya Bandyopadhyay	Professor	PhD
2	Souvanic Roy	Professor	PhD
3	Arup Sarkar	Professor	PhD
4	Swati Saha	Professor	PhD

Sl. No.	Name	Designation	Highest Degree
5	Keya Mitra	Professor	PhD
6	Partha Sarathi Mukhopadhyay	Professor	PhD
7	Amitava Roy	Associate Professor	PhD (D.Engg)
8	Subrata Kumar Paul	Associate Professor	PhD
9	Soumen Mitra	Associate Professor	PhD
10	Sutapa Das	Associate Professor	PhD
11	Bhaskar De	Assistant Professor Grade II	PhD
12	Tuhin Subhra Maparu	Assistant Professor Grade II	PhD

Department of Chemistry

Sl. No.	Name	Designation	Highest Degree
1	Anup Mondal	Professor (HAG)	PhD
2	Shyamal Kr. Chattopadhyay	Professor (HAG)	PhD
3	Prasanta Kr. Nandi	Professor (HAG)	PhD
4	Binaykrishna Ghorai	Professor (HAG)	PhD
5	Ajit Kumar Mahapatra	Professor (HAG)	PhD
6	Sudip Kumar Chattopadhyay	Professor (HAG)	PhD
7	Chinmoy Bhattacharya	Associate Professor	PhD
8	Jhuma Ganguly	Associate Professor	PhD
9	Papu Biswas	Associate Professor	PhD
10	Nanda Dulal Paul	Assistant Professor Grade I	PhD
11	Ujjal Bhattacharjee	Assistant Professor Grade II	PhD
12	Laksmikanta Adak	Assistant Professor Grade II	PhD

Department of Civil Engineering (CE)

Sl. No.	Name	Designation	Highest Degree
1	Kalyan Kr. Chattopadhyay	Professor	PhD
2	Sudip Kr. Roy	Professor (HAG)	PhD
3	Subrata Chakraborty	Professor (HAG)	PhD
4	Anirban Gupta	Professor (HAG)	PhD
5	Ambarish Ghosh	Professor (HAG)	PhD
6	Chaitali Ray	Professor (HAG)	PhD
7	Aparna (Dey) Ghosh	Professor	PhD

Sl. No.	Name	Designation	Highest Degree
8	Debabrata Mazumder	Professor	PhD
9	Debashis Moitra	Professor	MCE
10	Prasanta Chakraborty	Associate Professor	ME
11	Sugato Pal	Associate Professor	ME
12	Arun Kumar Chakraborty	Associate Professor	MTRP
13	Ashis Kr. Bera	Associate Professor	PhD
14	Sujata Biswas	Associate Professor	PhD
15	Soumya Bhattacharjya	Associate Professor	PhD
16	Tapash Kumar Roy	Associate Professor	PhD
17	Asok Adak	Associate Professor	PhD
18	Chanchal Majumder	Associate Professor	PhD
19	Sujit Kumar Dalui	Assistant Professor Grade I	PhD
20	Pritam Saha	Assistant Professor Grade I	PhD
21	Ujjwal Saha	Assistant Professor Grade I	PhD
22	Sandip Chakraborty	Assistant Professor Grade II	ME
23	Sneha Murmu	Assistant Professor Grade II	ME
24	Debojyoti Pandit	Assistant Professor Grade II	PhD
25	Dipankana Bhattacherjee	Assistant Professor Grade II	PhD
26	Anuj Kishor Budhkar	Assistant Professor Grade II	PhD

Department of Computer Science and Technology (CST)

Sl. No.	Name	Designation	Highest Degree
1	Amit Kumar Das	Professor	PhD
2	Uma Bhattacharya	Professor	PhD
3	Jaya Sil	Professor (HAG)	PhD
4	Susanta Chakraborty	Professor (HAG)	PhD
5	Sipra Das (Bit)	Professor (HAG)	PhD
6	Biplab Kr Sikdar	Professor (HAG)	PhD
7	Sulata Mitra	Professor	PhD
8	Sekhar Mandal	Professor	PhD
9	Asit Kumar Das	Professor	PhD
10	Somnath Pal	Associate Professor	ME
11	Manas Hira	Associate Professor	MTech

Sl. No.	Name	Designation	Highest Degree
12	Abhik Mukherjee	Associate Professor	PhD
13	Apurba Sarkar	Associate Professor	PhD
14	Surajeet Ghosh	Associate Professor	PhD
15	Samit Biswas	Assistant Professor Grade I	PhD
16	Nirnay Ghosh	Assistant Professor Grade II	PhD
17	Tamal Pal	Assistant Professor Grade II	PhD
18	Malay Kule	Assistant Professor Grade II	PhD
19	Ashish Kumar Layek	Assistant Professor Grade II	ME

Department of Earth Sciences (ES)

Sl. No.	Name	Designation	Highest Degree
1	Bhabani Prasad Mukhopadhyay	Professor	PhD
2	Ananya Mukhopadhyay	Associate Professor	PhD
3	Atin Kumar Mitra	Assistant Professor Grade I	PhD
4	Moumita Talukdar	Assistant Professor Grade II	PhD

Department of Electrical Engineering (EE)

Sl. No.	Name	Designation	Highest Degree
1	Abhijit Chakrabarti	Professor (HAG)	PhD
2	Biswarup Basak	Professor	PhD
3	Ashoke Sutradhar	Professor	PhD
4	Prasid Syam	Professor	PhD
5	Abdur Rouf	Professor	MTech
6	Chandan Kumar Chanda	Professor (HAG)	PhD
7	Mainak Sengupta	Professor	PhD
8	Debabrata Roy	Professor	PhD
9	Aparajita Sengupta	Professor	PhD
10	Konika Das(Bhattacharya)	Professor	PhD
11	Anindita Sengupta	Professor	PhD
12	Debjani Ganguly	Associate Professor	ME
13	Amal Barman	Associate Professor	ME
14	Amalendu Bikash Choudhury	Associate Professor	PhD
15	Kaushik Mukherjee	Associate Professor	PhD

Sl. No.	Name	Designation	Highest Degree
16	Abhinandan De	Associate Professor	PhD
17	Paramita Chattopadhyay	Associate Professor	PhD
18	Sukanya Parui	Assistant Professor Grade I	PhD
19	Suvarun Dalapati	Assistant Professor Grade I	PhD
20	Bhaskaran Barman	Assistant Professor Grade II	ME

Department of Electronics and Telecommunication Engineering (E&TCE)

Sl. No.	Name	Designation	Highest Degree
1	Monojit Mitra	Professor	PhD
2	Santanu Das	Professor (HAG)	PhD
3	Susanta Kumar Parui	Professor	PhD
4	Ayan Banerjee	Associate Professor	PhD
5	Chirasree Roy Chaudhuri	Associate Professor	PhD
6	Tamaghna Acharya	Associate Professor	PhD
7	Partha Bhattacharyya	Associate Professor	PhD
8	Debasis Mitra	Assistant Professor Grade I	PhD
9	Ankita Pramanik	Assistant Professor Grade I	PhD
10	Rik Chattapadhyay	Assistant Professor Grade II	PhD

Department of Human Resource Management (HRM)

Sl. No.	Name	Designation	Highest Degree
1	Manas Kumar Sanyal	Professor	PhD

Department of Humanities and Social Sciences (HSS)

Sl. No.	Name	Designation	Highest Degree
1	Rupen Basu Mallik	Associate Professor	M.Com, ICWA
2	Partha Sarathy Roy	Associate Professor	PhD
3	Mallika Ghosh Sarbadhikary	Associate Professor	MPhil
4	Subhasis Bandyopadhyay	Associate Professor	MA
5	Averi Mukhopadhyay	Assistant Professor Grade II	PhD
6	Madhumita Roy	Assistant Professor Grade II	PhD

Department of Information Technology (IT)

Sl. No.	Name	Designation	Highest Degree
1	Hafizur Rahaman	Professor (HAG)	PhD
2	Santi Prasad Maity	Professor (HAG)	PhD
3	Arindam Biswas	Professor	PhD
4	Sukanta Das	Associate Professor	PhD
5	Tuhina Samanta	Associate Professor	PhD
6	Prasun Ghosal	Associate Professor	PhD
7	Indrajit Banerjee	Associate Professor	PhD
8	Surajit Kumar Roy	Associate Professor	PhD
9	Chandan Giri	Associate Professor	PhD
10	Ruchira Naskar	Assistant Professor Grade I	PhD
11	Shyamalendu Kandar	Assistant Professor Grade II	PhD

Department of Mathematics

Sl. No.	Name	Designation	Highest Degree
1	Basudeb Mukhopadhyay	Professor (HAG)	PhD
2	Binayak Samadder Choudhury	Professor (HAG)	PhD
3	Guruprasad Samanta	Professor (HAG)	PhD
4	Murari Mitra	Professor	PhD
5	Tapan Kr. Roy	Professor (HAG)	PhD
6	Sanat Kr. Majumder	Professor	PhD
7	Asoke Kumar Dhar	Professor	PhD
8	Tapan Kr. Kar	Professor (HAG)	PhD
9	Parbati Saha	Professor	PhD
10	Pritha Das	Professor	PhD
11	Shariful Alam	Associate Professor	PhD
12	Ujjal Debnath	Associate Professor	PhD
13	Smita Pal (Sarkar)	Assistant Professor Grade I	PhD
14	Sarita Ojha	Assistant Professor Grade II	PhD

Department of Mechanical Engineering (ME)

Sl. No.	Name	Designation	Highest Degree
1	Sisir Kumar Guha	Professor	PhD

Sl. No.	Name	Designation	Highest Degree
2	Santanu Kr. Karmakar	Professor	PhD
3	Debasish Dutta	Professor	PhD
4	Sujoy Kumar Saha	Professor (HAG)	PhD
5	Apurba Kishore Dutta	Professor	PhD
6	Bijan Kumar Mandal	Professor	PhD
7	Shyamal Chatterjee	Professor	PhD
8	Parthapratim Dey	Professor	PhD
8	Subhas Chandra Mondal	Professor	PhD
10	Sudip Ghosh	Associate Professor	PhD
11	Aritra Ganguly	Associate Professor	PhD
12	Ashim Guha	Assistant Professor Grade I	PhD
13	Bidyut Pal	Assistant Professor Grade II	PhD
14	Uttam Rana	Assistant Professor Grade II	MTech
15	Santanu Das	Assistant Professor Grade II	PhD

Department of Metallurgy and Materials Engineering (MET)

Sl. No.	Name	Designation	Highest Degree
1	Amitava Basu Mallick	Professor (HAG)	PhD
2	Partha Protim Chattopadhyay	Professor	PhD
3	Swarup Kr Ghosh	Professor	PhD
4	Sumit Ghosh	Associate Professor	MMetE
5	Manojit Ghosh	Associate Professor	PhD
6	Debdulal Das	Associate Professor	PhD
7	Kaushik Das	Assistant Professor Grade I	PhD
8	Sukumar Kundu	Assistant Professor Grade I	PhD
9	Gautam Anand	Assistant Professor Grade II	PhD
10	Tapendu Mandal	Assistant Professor Grade II	MTech

Department of Mining Engineering (MIN)

Sl. No.	Name	Designation	Highest Degree
1	Prabir Kr. Paul	Professor (HAG)	PhD
2	Netai Ch. Dey	Professor (HAG)	PhD
3	Indranath Sinha	Professor	PhD

Sl. No.	Name	Designation	Highest Degree
4	Suranjan Sinha	Professor	PhD
5	Pratik Dutta	Professor	PhD
6	Sudipta Mukhopadhyay	Professor	PhD
7	Gopal Chandra Roy	Assistant Professor Grade I	PhD
8	Md. Mirajul Islam	Assistant Professor Grade I	PhD

Department of Physics

Sl. No.	Name	Designation	Highest Degree
1	Dipali Banerjee	Professor (HAG)	PhD
2	Sukhendu Sekhar Sarkar	Professor	PhD
3	Mousumi Basu	Professor	PhD
4	Sampad Mukherjee	Associate Professor	PhD
5	Samar Jana	Associate Professor	PhD
6	Amit Kundu	Associate Professor	PhD
7	Krishnendu Mukherjee	Associate Professor	PhD
8	Syed Minhaz Hossain	Associate Professor	PhD
9	Abhijit Bisoi	Assistant Professor Grade I	PhD
10	Mojammel Haque Mondal	Assistant Professor Grade I	PhD
11	Dwipesh Majumder	Assistant Professor Grade I	PhD
12	Debasis Ray	Assistant Professor Grade II	PhD

School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS)

Sl. No.	Name	Designation	Highest Degree
1	Nillohit Mukherjee	Assistant Professor Grade II	PhD
2	Santanu Maity	Assistant Professor Grade II	PhD

School of Community Science and Technology (SOCSAT)

SI.	No.	Name	Designation	Highest Degree
	1	Jayati Bhowal	Assistant Professor Grade II	PhD
	2	Shantonu Roy	Assistant Professor Grade II	PhD

School of Mechatronics and Robotics (SM&R)

Sl. No.	Name	Designation	Highest Degree
1	Tanmay Pal	Assistant Professor Grade II	PhD

School of VLSI Technology

Sl. No.	Name	Designation	Highest Degree
1	Tamal Ghosh	Assistant Professor Grade II	PhD

Centre of Healthcare Science and Technology (CHST)

Sl. No.	Name	Designation	Highest Degree
1	Ananya Barui	Assistant Professor Grade II	PhD

Table 2.2: Non-Regular Faculty Members

Temporary Faculty

Sl. No.	Name	Dept./School/Centre
1	Apurba Das	Aerospace Engineering and Applied Mechanics
2	Dipankar Saha	Electronics and Telecommunication Engineering
3	Vikash Kumar	Mechanical Engineering
4	Amit Kumar Rai	Mechanical Engineering
5	Partha Sarathi Chowdhury	School of Management Sciences
6	Poulomi Mukherjee Mondal	School of Management Sciences
7	Rana Basu	School of Management Sciences
8	Avishek Kumar	Metallurgy and Materials Engineering
9	Poulami Ghosh	Physics
10	Suman Samui	Electronics and Telecommunication Engineering
11	Manasi Das	School of Mechatronics and Robotics
12	Reetam Mondal	Electrical Engineering
13	Mrinal Kanti Layek	Earth Sciences
14	Shashwati Banerjee	Humanities and Social Sciences
15	Basabdatta Palit	Electronics and Telecommunication Engineering
16	Gaurav Saini	School of Advanced Materials, Green Energy and Sensor Systems
17	Manas Rakshit	Electronics and Telecommunication Engineering
18	Mithu Sarkar	Electrical Engineering
19	Deepti Ranjan Majhi	Civil Engineering
20	Debdeep Saha	Electrical Engineering
21	Kaunsar Jabeen	School of Community Science and Technology
22	Sangita Deb Barman	Civil Engineering
23	Joynarayan Mukherjee	School of Advanced Materials, Green Energy and Sensor Systems
24	Subir Das	School of Mechatronics and Robotics
25	Sananda Chatterjee	School of Mechatronics and Robotics
26	Syed Abdullah Qasim	Electrical Engineering
27	Rajesh Panda	Electrical Engineering
28	Shreya Banerjee	Aerospace Engineering and Applied Mechanics
29	Saptarshi Kundu	Civil Engineering

Sl. No.	Name	Dept./School/Centre
30	Kaniska Biswas	Civil Engineering
31	Snehasish Bhattacharjee	Mechanical Engineering
32	Debasish Chatterjee	Metallurgy and Materials Engineering
33	Sumit Kumar Pandey	Electrical Engineering
34	Shanujas.V	School of Management Sciences
35	Satarupa Roychowdhury	School of Management Sciences
36	Aditi Sarkar	Mining Engineering
37	Anirban Chakraborty	Electronics and Telecommunication Engineering
38	D. Sunil Kumar	Mechanical Engineering
39	Pradip Mondal	Mechanical Engineering
40	Mukesh Kumar	Mechanical Engineering
41	Mandira Dey	School of Management Sciences
42	Shreedevi Moharana	Mining Engineering
43	Swarup Kumar Barman	Civil Engineering
44	Soumen Samanta	Mathematics

Visiting Faculty

Sl. No.	Name	Dept./School/Centre
1	Sri Kajal Mukhopadhyay	Human Resource Management
2	Sri Prasun Kumar Chatterjee	Human Resource Management
3	Sri Rajendra Nath Basu	School of Advanced Materials, Green Energy and Sensor Systems
4	Prof. Suranjan Sinha	Mining Engineering
5	Sri Manas Kumar Mukhopadhyay	Mining Engineering
6	Prof. Abhijit Chakrabarti	Electrical Engineering

Contractual Faculty

Sl. No.	Name	Dept./School/Centre
1	Dr. Pranab Roy	VLSI Technology
2	Sri Sudip Ghosh	VLSI Technology
3	Dr. Sumita Mukhopadhyay	School of Advanced Materials, Green Energy and Sensor Systems
4	Dr. Chitrangada Das Mukhopadhyay	School of Healthcare Science and Technology

INSPIRE Faculty Members

Sl. No.	Name	Dept./School/Centre
1	Swatilekha Ghosh	School of Advanced Materials, Green Energy and Sensor Systems
2	Arik Kar	Chemistry
3	Subhabrata koley	Aerospace Engineering and Applied Mechanics

UGC-FRP Faculty Members

Sl. No.	Name	Dept./School/Centre
1	Mrinal K. Bera	Chemistry
2	Manish Pal Chowdhury	Physics
3	Abhijit Majumdar	Physics

Superannuated Faculty Members [superannuated between 1st April 2021- 31st March 2022]

Sl. No.	Name	Date of Superannuation
1	Apurba Kishore Dutta	31.05.2021
2	Suranjan Sinha	31.05.2021
3	Biswarup Basak	31.07.2021
4	Basudeb Mukhopadhyay	31.08.2021
5	Prasanta Chakraborty	30.11.2021
6	Abhijit Chakrabarti	30.11.2021
7	Sisir Kumar Guha	31.01.2022
8	Uma Bhattacharya	31.01.2022
9	Kalyan Kumar Chattopadhyay	28.02.2022
10	Tapan Kumar Roy	31.03.2022

2.2 Non-Academic Staff Members and Officers

Officers Cadre

Sl. No.	Name	Department	Designation
1	Alok Kumar Maity	Office of the Finance	Deputy Registrar
2	Devasis Datta	Office of the Registrar	Deputy Registrar
3	Nirmalya Kumar Bhattacharyya	DR (Academic)	Deputy Registrar
4	Hari Prasad Sharma	Library	Joint Librarian
5	Usha Shankar Bhattacharya	Training & Placement	Asst.Training Officer (SG)
6	Alok Kumar Mitra	Office of the Registrar	Assistant Registrar
7	Bivore Das	Office of the Registrar	Assistant Registrar
8	Dipankar Chakrabarty	Office of the Finance	Assistant Registrar
9	Shib Sankar Basak	Office of the Registrar	Assistant Registrar
11	Abani Oraon	Library	Assistant Librarian

Administration: Higher Grade

Sl. No.	Name	Department	Designation
1	Haran Chandra Sadhukhan	Office of the Dean (FW)	Private Secretary
2	Mintu Charan Khan	Mechanical Engineering	Private Secretary
3	Tarun Paul	Electronics & Tele- communication Engineering	Private Secretary
4	Mamit Mitra	Office of the Finance	Private Secretary
5	Chinmoy Sana	Office of the Dean (SW)	Private Secretary
6	Malay Garai	Human Resource Management	Private Secretary
7	Arun Kumar Ghosh	Office of the Registrar	Superintendent SG-I
8	Tamal Kumar Das	Office of the Finance	Superintendent SG-I
9	Raja Banerjee	Office of the Dean (Academic and Examination)	Superintendent SG-II
10	Nimain Charan Satapathy	Office of the Finance	Superintendent SG-II
11	Alok Roy	Workshop	Superintendent SG-II
12	Kashi Nath Singh	Office of the Registrar	Superintendent SG-II
13	Sunil Kumar Manna	Office of the Finance	Superintendent SG-II
14	Biplab Mukherjee	Electrical Engineering	Superintendent SG-II
15	Swati Kar (Deb)	Office of the Dean (Academic and Examination)	Superintendent SG-II

Sl. No.	Name	Department	Designation
16	Mantu Goswami (Manna)	Office of the Dean (Academic and Examination)	Superintendent SG-II
17	Madan Mohan Bose	Office of the Registrar	Superintendent SG-II
18	Susmita Sarkar	Office of the Finance	Superintendent SG-II
19	Arup Kumar Patra	Office of the Finance	Superintendent SG-II
20	Satyajit Barua	Hostel Management Council	Superintendent SG-II
21	Tarak Nath Das	Office of the Registrar	Superintendent SG-II
22	Partha Sarathi Maity	Office of the Registrar	Superintendent SG-II
23	Mahadev Biswas	Hostel Management Council	Superintendent SG-II
24	Gautam Biswas	Office of the Dean (Academic and Examination)	Superintendent SG-II
25	Judhistir Mandal	Office of the Finance	Superintendent SG-II
26	Rashbihari Chakrabarti	Office of the Registrar	Superintendent SG-II

Administration: Lower Grade

Sl. No.	Name	Department	Designation
1	Arpita Das	Office of the Dean (Academic and Examination)	Assistant (SG-II)
2	Debasish Saha	Central Library	Assistant (SG-I)
3	Subhra Roy	Office of the Dean (Academic and Examination)	Stenographer -SG II
4	Partha Sarathi Nath	Office of the Registrar	Assistant (SG-I)
5	Sarojit Das	Office of the Finance	Assistant (SG-II)
6	Ayandeb Datta	Office of the Registrar	Assistant (SG-I)
7	Surajit Das	Office of the Registrar	Assistant (SG-II)
8	Arindam Banerjee	Office of the Registrar	Assistant (SG-II)
9	Sujata Saren	Office of the Finance	Assistant (SG-I)
10	Chandrani Mukhopadhyay	Office of the Registrar	Assistant (SG-II)
11	Abhijit Bhattacharyya	Office of the Finance	Assistant (SG-II)
12	Subrata Baidya	Office of the Registrar	Assistant (SG-I)
13	Pijush Datta	Office of the Registrar	Assistant (SG-I)
14	Santanu Ganguli	Office of the Finance	Assistant (SG-II)
15	Anindya Mukhopadhyay	Office of the Registrar	Assistant (SG-I)
16	Tarun Kanti Mitra	Office of the Finance	Assistant (SG-II)

Sl. No.	Name	Department	Designation
17	Somnath Das	Office of the Finance	Assistant (SG-I)
18	Uttam Chatterjee	Office of the Finance	Assistant (SG-II)
19	Asim Das Chakraborty	Physics	Assistant (SG-I)
20	Sujan Sarkar	Office of the Dean (Academic and Examination)	Assistant (SG-I)
21	Sourasis Mitra	Office of the Registrar	Assistant (SG-I)
22	Shyamal Kumar Manna	Hospital	Assistant (SG-I)
23	Baidyanath Mondal	Compound Section	Assistant (SG-I)
24	Ram Sunder Yadav	Human Resource Management	Assistant (SG-I)
25	Suchita Khakha	Dean (Students' Welfare)	Assistant (SG-I)
26	Sujit Mazumdar	Office of the Registrar	Stenographer (SG-II)

Technical: Higher Grade

Sl. No.	Name	Department	Designation
1	Ranjan Kumar Biswas	Civil Engineering	Technical Assistant SG-I
2	Bagala Prasad Patra	Workshop	Technical Selection Gr I
3	Sajal Kumar Chakraborty	Civil Engineering	Technical Assistant SG-I
4	Amrita Bandopadhyay (nee Khan)	Civil Engineering	Technical Assistant SG-I
5	Pradip Kr. Roy	Website Cell	Technical Assistant SG-I
6	Sugata Munshi	Chemistry	Technical Assistant SG-I
7	Amalendu Sahoo	Aerospace Engineering and Applied Mechanics	Technical Assistant SG-I
8	Anjana Sengupta	Architecture, Town and Regional Planning	Technical Assistant SG-I
9	Rajat Mukhopadhyay	Electronics and Tele- communication Engineering	Technical Assistant SG-I
10	Raktim Maity	Electrical Engineering	Technical Assistant SG-I
11	Sutap Chakraborty	Office of the Finance	Technical Assistant SG-I
12	Debjit Bhowmik	Office of the Dean (Academic and Examination)	Technical Assistant SG-I
13	Saumendu Atta	Central Library	Library and Information Assistant SG-I
14	Asish Kumar Paul	Mechanical Engineering	Technical Assistant SG-I
15	Susanta Dhara	Computer Centre	Technical Assistant SG-I

Sl. No.	Name	Department	Designation
16	Amar Tarafder	Civil Engineering	Technical Assistant SG-I
17	Biswajit Das	Computer Centre	Technical Assistant SG-I
18	Sumitra Bagchi	Computer Science and Technology	Technical Assistant SG-I
19	Prasanta Gope	Mining Engineering	Technical Assistant SG-I
20	Bibhas Chandra Mitra	Physics	Technical Assistant SG-I
21	Bijit Kumar Dey	Mechanical Engineering	Technical Assistant SG-I
22	Soma Naskar (Sardar)	Information Technology	Technical Assistant SG-I
23	Mohini Mohan Debsharma	Civil Engineering	Technical Assistant SG-I
24	Pradip Kr. Das	Electrical Engineering	Technical Assistant SG-I
25	Keyarani Mondal	Architecture, Town and Regional Planning	Technical Assistant SG-I
26	Brindaban Patta	Electronics and Tele- communication Engineering	Technical Assistant SG-I
27	Rajib Bandopadhyay	Electrical Engineering	Technical Assistant SG-I
28	Subhasish Pradhan	Mechanical Engineering	Technical Assistant SG-I
29	Sarbani Barari	Office of the Registrar	Technical Assistant SG-I
30	Amitava Chowdhury	Mining Engineering	Technical Assistant SG-I
31	Janardan Kar	Mining Engineering	Technical Assistant SG-I
32	Braja Gopal Koner	Institute Work Division	Technical Assistant SG-I
33	Sanjoy Naskar	Workshop	Technical Assistant SG-I
34	Pradip Mistry	Electronics and Tele- communication Engineering	Technical Assistant SG-I
35	Soumen Gope	Network and IT Infrastructure	Technical Assistant SG-I
36	Souvik Patra	Information Technology	Technical Assistant SG-I
37	Rumeli Bose	Computer Science and Technology	Technical Assistant SG-I
38	Salil Kumar Dalui	Metallurgy and Materials Science and Engineering	Technical Assistant SG-I
39	Amiya Ratan Rout	Information Technology	Technical Assistant SG-I
40	Swaroop Shobhan Mukherjee	Civil Engineering	Technical Assistant SG-I
41	Amal Kumar Mandal	Physics	Technical Assistant SG-I
42	Snehashis Saha	Information Technology	Technical Assistant SG-I
43	Hariprasad Saha	Workshop	Technical Assistant SG-I

Sl. No.	Name	Department	Designation
44	Subhajit Biswas	Information Technology	Technical Assistant SG-I
45	Ramesh Halder	Chemistry	Technical Assistant SG-I
46	Amitava Pal	Electrical Engineering	Technical Assistant SG-I
47	Partha Sarathi Baruri	Electrical Engineering	Technical Assistant SG-I
48	Sintu Das	Physics	Technical Assistant SG-I
49	Sujata Misra	Computer Science and Technology	Technical Assistant SG-I
50	Swapan Kumar Jana	Metallurgy and Materials Science and Engineering	Technical Assistant SG-I
51	Nani Gopal Roy	Mechanical Engineering	Technical Assistant SG-I
52	Kankar Mohan Das	Mechanical Engineering	Technical Assistant SG-I
53	Sarbani Sarkar	Architecture, Town and Regional Planning	Technical Assistant SG-I
54	Santosh Kumar Kayal	Workshop	Technical Assistant SG-II
55	Biswajit Samanta	Electronics and Tele- communication Engineering	Technical Assistant SG-II
56	Bishnu Pada Choudhury	Information Technology	Technical Assistant SG-II
57	Rabi Sankar Kandar	Hospital	Sr. Pharmacist
58	Moumita Sahoo (Porya)	Hospital	Sr. Pharmacist

Technical: Lower Grade

Sl. No.	Name	Department	Designation
1	Balaram Roy	Office of the Registrar	Technician SG - I
2	Dibyendu Paul	Electronics and Telecommunication Engineering	Technician SG - I
3	Pradip Kumar Dey	Mechanical Engineering	Technician SG - I
4	Saibal Ghosh	Mining Engineering	Technician SG - I
5	Jayanta Kundu	Aerospace Engineering and Applied Mechanics	Technician SG - I
6	Bablu Santra	Electrical Engineering	Technician SG - I
7	Sudipta Mandal	Hospital	Technician

Supporting Staff

Sl. No.	Name	Department	Designation
1	Ashok Kumar Ghosh	Office of the Finance	Office Attendant SG I
2	Debabrata Patra	Compound Section	Office Attendant SG I
3	Rankanidhi Nayak	Compound Section	Office Attendant SG I
4	Gangadhar Nayak	Compound Section	Office Attendant SG I
5	Niranjan Nayak	Compound Section	Office Attendant SG I
6	Raj Kumar Dome	Compound Section	Office Attendant SG I
7	Tarak Das	Mathematics	Office Attendant SG I
8	Mahesh Das	Compound Section	Office Attendant SG I
9	Subir Ghosh	Office of the Registrar	Office Attendant SG I
10	Sibu Das	Hospital	Office Attendant SG I
11	Mithilesh Kumar Roy	Hospital	Office Attendant SG I
12	Ashoke Halder	Hospital	Office Attendant SG I
13	Gita Hela	Compound Section	Office Attendant SG I
14	Bhanu Das	Compound Section	Office Attendant SG I
15	Rajendra Bhagat	Compound Section	Office Attendant SG I
16	Prabir Naskar	Workshop	Office Attendant SG I
17	Ram Chandra Routh	Compound Section	Office Attendant SG I
18	Asoke Routh	Computer Science and Technology	Office Attendant SG I
19	Saleha Khatun	Aerospace Engineering and Applied Mechanics	Office Attendant SG I
20	Dharmendra Das	Office of the Registrar	Office Attendant SG I
21	Gopal Chandra Parua	Aerospace Engineering and Applied Mechanics	Office Attendant SG I
22	Nemai Charan Bal	Dean, Faculty Welfare	Office Attendant SG I
23	Sukumar Sarkar	Office of the Registrar	Office Attendant SG I
24	Siba Prasad Jana	Office of the Registrar	Office Attendant SG I
25	Jahar Pal	Computer Science and Technology	Office Attendant SG I
26	Ranu Dey	Architecture, Town and Regional Planning	Office Attendant SG I
27	Julfikar Ali Molla	Chemistry	Office Attendant SG I
28	Richar Francis Subba	Office of the Dean (Academic and Examination)	Office Attendant SG I

Sl. No.	Name	Department	Designation	
29	Asit Baran Dey	Office of the Finance	Office Attendant SG I	
30	Sanjay Ghosh	Electrical Engineering	Office Attendant SG I	
31	Purnendu Bera	Architecture, Town and Regional Planning	MTS Workshop Attendant II	
32	Amarendra Nath Polley	Office of the Registrar	Office Attendant SG I	
33	Chanda Devi	Earth Science	Office Attendant SG I	
34	Arun Kumar Patra	Department of Students' Activity	Office Attendant SG I	
35	Murali Mohan Mohanty	Department of Students' Activity	Office Attendant SG I	
36	Kalyan Prasad Pathak	Department of Students' Activity	Office Attendant SG I	
37	Nirmal Kumar Kar	Department of Students' Activity	Office Attendant SG I	
38	Tushar Kanti Mitra	Human Resource Management	Office Attendant SG I	
39	Debendra Nath Ghosal	Office of the Registrar	Office Attendant SG I	
40	Badal Seal	Workshop	Office Attendant SG I	
41	Rambrij Prasad Harijan	Compound Section	Office Attendant SG I	
42	Dilip Kumar Das	Mechanical Engineering	Office Attendant SG I	
43	Buddhadev Samanta	Dean, Students' Welfare	Office Attendant SG I	
44	Rabin Das	Office of the Registrar	Office Attendant SG I	
45	Murari Mondal	Institute Work Division	Office Attendant SG I	
46	Milan Majumder	Office of the Director	Office Attendant SG I	
47	Tapan Oraon	Compound Section	Office Attendant SG I	
48	Ram Prosad Routh	Compound Section	Office Attendant SG I	
49	Rajesh Routh	Compound Section	Office Attendant SG I	
50	Susanta Pal	Office of the Registrar	Office Attendant SG I	
51	Rama Roy	Computer Science and Technology	Office Attendant SG I	
52	Amiya Kumar Paul	Physics	Office Attendant SG I	
53	Arabinda Samanta	Office of the Registrar	Office Attendant SG I	
54	Subrata Chakraborty	Office of the Dean (Academic and Examination)	Office Attendant SG I	
55	Prosenjit Panja	Office of the Finance	Office Attendant SG I	
56	Biswajit Kar	Department of Students' Activity	Office Attendant SG I	

Sl. No.	Name	Department	Designation
57	Pradut Kumar Manna	Compound Section	Office Attendant SG I
58	Prasanta Mallick	Office of the Registrar	Office Attendant SG I
59	Bibhuti Bhusan Dey	Central Library	Office Attendant SG I
60	Deb Kumar Jana	Mathematics	Office Attendant SG I
61	Susanta Bhattacharjee	Office of the Finance	Office Attendant SG I
62	Arati Majumdar	Earth Science	Office Attendant SG I
63	Menoka Turi	Compound Section	Office Attendant SG II
64	Tarak Nath Dey	Metallurgy and Materials Science and Engineering	Office Attendant SG II
65	Santanu Pramanick	Office of the Registrar	Office Attendant SG II
66	Subhas Sarkar	Office of the Registrar	Office Attendant SG II
67	Manoj Bhagat	Metallurgy and Materials Science and Engineering	Office Attendant SG II
68	Sidheswar Roy	Compound Section	Office Attendant SG II
69	Uttam Pal	Electronics and Tele- communication Engineering	Office Attendant SG II
70	Ashura Begum	Humanities and Social Sciences	Office Attendant SG II
71	Harekrushna Dash	Compound Section	Office Attendant SG II
72	Sapani Nayek	Compound Section	Office Attendant SG II
73	Sudama Chaowdhury	Compound Section	Office Attendant SG II
74	Md. Riaz	Compound Section	Office Attendant SG II
75	Asik Mohammad	Compound Section	Office Attendant SG II
76	Bapi Majhi	Compound Section	Office Attendant SG II
77	Ruma Das Ghosh	Dean, Research and Consultancy	Office Attendant SG II
78	Rabi Nayak	Compound Section	Office Attendant SG II
79	Nageswar Mahato	Compound Section	Office Attendant SG II
80	Sisir Kumar Roy	Civil Engineering	Office Attendant SG II
81	Bimal Dutta	Mathematics	Office Attendant SG II
82	Kakali Pakhira (Pan)	Office of the Registrar	Office Attendant SG II
83	Chaitali Bhattacharjee	ee Office of the Registrar Office Attenda	
84	Kumaresh Dey	School of Mechatronics and Robotics	Office Attendant SG II
85	Dilip Kumar Bag	Dean, Students' Welfare	Office Attendant SG II
86	Rajkumar Dhali	Dean, Students' Welfare	Office Attendant SG II

Sl. No.	Name	Department	Designation
87	Jaydeb Barua	Compound Section	Office Attendant SG II
88	Sanjoy Ghosh	Mining Engineering	Office Attendant SG II
89	Laloo Hela	Compound Section	Office Attendant SG II
90	Rita Ghosh	Hostel Management Council	Office Attendant SG II
91	Biplab Kayal	Office of the Dean (Academic)	Office Attendant SG II
92	Chandan Karmakar	Office of the Registrar	Office Attendant SG II
93	Dhiman Chandra Das	Office of the Dean (Academic)	Office Attendant SG II
94	Biswajit Sarkar	Mechanical Engineering	Office Attendant SG II
95	Md. Shamim	Workshop	Office Attendant SG II
96	Tarak Nath Jana	Office of the Dean (Academic)	Office Attendant SG II
97	Bhola Prasad Harijan	Compound Section	Office Attendant SG II
98	Biswanath Darjee	Workshop	Office Attendant SG II
99	Ajoy Kumar Das	Workshop	Office Attendant SG II
100	Idrish Mallick	Office of the Dean, Faculty Welfare	Office Attendant SG II
101	Sudarsan Mahato	Human Resource Management	Office Attendant SG II
102	Naresh Bhagat	Compound Section	Office Attendant SG II
103	Satya Narayan Karmakar	Civil Engineering	Office Attendant SG II
104	Dipendu Paul	Institute Work Division	Office Attendant SG II
105	Sushil Kumar Dey	Office of the Finance	Office Attendant SG II
106	Debashis Mondal	Metallurgy and Materials Science and Engineering	Office Attendant SG II
107	Gouranga Chowdhury	Hostel Management Council	Office Attendant SG II
108	Bijan Sarkar	Computer Science & Technology	Office Attendant SG II
109	Chandra Shekhar Malakar	Compound Section	Office Attendant SG II
110	Tinku Das	Office of the Dean, Students' Welfare	Office Attendant SG II
111	Pradip Das	Compound Section	Office Attendant SG II
112	Suresh Chandra Naik	Office of the Registrar	Office Attendant SG II
113	Sanjay Bhagat	Compound Section	Office Attendant SG II
114	Pintu Das	Office of the Dean, Students' Welfare	Office Attendant SG II
115	Sanjay Singh	Centre for Healthcare Science and Technology	Office Attendant SG II

Sl. No.	Name	Department	Designation		
116	Sadhu Thakur	Compound Section	Office Attendant SG II		
117	Radhashyam Chatterjee	Department of Students' Activity	Sr, Office Attendant		
118	Ashok Kumar Roy	Department of Students' Activity	Sr, Office Attendant		
119	Taraprasanna Ganguly	Department of Students' Activity	Sr, Office Attendant		
120	Ranjan Kumar Pal	Department of Students' Activity	Sr, Office Attendant		
121	Bikash Majhi	Department of Students' Activity	Sr, Office Attendant		
122	Tarak Majhi	Department of Students' Activity	Sr, Office Attendant		
123	Sanjib Das	Department of Students' Activity	Sr, Office Attendant		
124	Rabin Jana	Department of Students' Activity	Sr, Office Attendant		
125	Joydeb Dolai	Department of Students' Activity	Sr, Office Attendant		
126	Tarun Chaandra Das	Department of Students' Activity	Sr, Office Attendant		
127	Manas Kumar Saha	Department of Students' Activity	Sr, Office Attendant		
128	Uttam Kumar Dolai	Department of Students' Activity	Sr, Office Attendant		
129	Sankar Karmakar	Department of Students' Activity	Sr, Office Attendant		
130	Krishna Chakraborty	Electronics and Tele- communication Engineering	Sr, Office Attendant		
131	Mrinmoy Kr. Jana	Office of the Director	Sr, Office Attendant		
132	Milon Kr. Das	Institute Work Division	Sr, Office Attendant		
133	Mahua Sarkar	Office of the Finance	Sr, Office Attendant		
134	Avijit Nath	Mechanical Engineering	Sr, Office Attendant		
135	Sekhar Rao	Compound Section	Sr, Office Attendant		
136	Sandip Pramanick	Electrical Engineering	Sr, Office Attendant		
137	Rakesh Kr. Nayak	Civil Engineering	Sr, Office Attendant		
138	Narayan Chandra Dash	Office of the Registrar	Sr, Office Attendant		
139	Subhadra Manna	Office of the Registrar	Sr, Office Attendant		
140	Mina Routh	Compound Section Sr, Office Attention			
141	Malati Dey	Office of the Registrar	Sr, Office Attendant		
142	Joydeb Ganguly	Office of the Dean (Academic and Examination)	Office Attendant SG I		
143	Mantu Chakraborty	Office of the Registrar	Office Attendant SG I		

Contractual Non-Academic Staff

Sl. No.	Name	Designation
1	Susanta Sarma	Office Assistant
2	Malay kumar Dhir	Office Assistant
3	Suman Sarkar	Group-D
4	Koushik Dey	Group-D
5	Avijit Banerjee	Assistant (Maintenance of Information System)
6	Monoj Das	Physical Trainer-Cum- Ground Maintenance Staff
7	Dinabandhu Sadhukhan	Group-D
8	Amal Das	Technical Assistant
9	Sourav Kundu	Technical Assistant
10	Arindam Bhattacharjee	Office Assistant
11	Suvankar Bose	Technical Support Staff
12	Smt. Mouli Das	Technical Support Staff
13	Smt. Dipsikha Chandra (Pal)	Computer Assistant
14	Goutam Bandyopadhyay	Accountant (Contractual)
15	Shiladitya Bhandary	Sr. Network Assistant
16	Bishwarup Bhattacherjee	Project Office Staff (Group-C) Category
17	Swapan Kumar Patra	Project Office Staff (Group-C) Category
18	Bimal Adhya	Project Office Staff (Group-C) Category
19	Smt. Sanchayita Dhara	Technical Assistant
20	Asim Deb	Advisor Training & Placement
21	Uttam Kayal	Driver
22	Avijit Das	Driver
23	Goutam Paul	Technical Assistant
24	Sambhu Meta	Document Preparation Assistant
25	Sandipan Patra	Technical Assistant
26	Rabindra Nath Das	Group-D
27	Sudipta Das	Junior Assistant
28	Indrajit Ghosh	Information cum Data Entry Assistant
29	Sougata Das	Project Office Staff
30	Smt. Subhasree Majumder	Part time Office Assistant
31	Manoranjan Jana	Project Office Staff
32	Sukhen Adhikari	Project Office Staff

Sl. No.	Name	Designation
33	Sanjay Dey	Project Office Staff (Group-C) Category
34	Malay Kundu	Scientific Officer
35	Smt. Ratna Ghosh	Technical Assistant
36	Sudip Bhattacharjee	Laboratory Attendant
37	Kumar Nayak	Laboratory Attendant
38	Pradip Kumar Majumder	Office Peon
39	Sanjay Sarkar	Office Assistant
40	Aloke Mondal	Group-D
41	Suhrid Bakshi	Technical Assistant
42	Manick Chandra Pal	Group-D
43	Kanchan Kumar Maji	Accounts Assistant
44	Goutam Sarkar	Office Assistant
45	Smt. Mousumi Shaw (Das)	Library Assistant
46	Pranab Satpathi	Office Peon
47	Rajat Mullick	Office Peon
48	Saikat Ganguli	Accounts Assistant
49	Asish Bag	Accounts Assistant
50	Sukanta Guha	Office Peon
51	Dibyendu Banerjee	Assistant Engineer (Civil)

Superannuated Non-Academic Staff

Sl. No.	Name	Date of Superannuation
1	Sambhunath Datta	31.01.2022
2	Ruma Naskar (Chakraborty)	31.01.2022
3	Susanta Kumar Chakraborty	31.01.2022
4	Utpal Ghosh	31.01.2022
5	Bimal Kumar Ghosh	31.01.2022
6	Lakshman Hansda	31.01.2022
7	Md. Murtuza	o6.09.2021 (Expired)
8	Amar Nath Dutta	31.10.2021
9	Swapan Chakraborty	30.11.2021
10	Rabindranath Banerjee	31.12.2021 (Allotted State Govt. employee)

Annual Report 2021-22 Indian Institute of Engineering Science and Technology, Shibpur								

Academic
Programmes

3. Academic Programmes

The Institute offers the following Undergraduate (UG), Postgraduate (PG) and Doctoral (PhD) programmes:

UG:

- Four-Year BTech Degree
- Five-Year Dual Degree (BTech-MTech)
- Five-Year BArch Degree

PG:

- Two-Year MTech Degree
- Two-Year MPlan Degree
- Two-Year MSc
- Two-Year MBA

PhD:

• Doctoral Programme

3.1 Four-Year BTech Degree / Five-Year Dual Degree (BTech-MTech)

The Institute offers **Four-year full-time** programme leading to **BTech Degree** in the following disciplines:

- a) Aerospace Engineering
- b) Civil Engineering
- c) Computer Science and Technology
- d) Electrical Engineering
- e) Electronics and Telecommunication Engineering
- f) Information Technology
- g) Mechanical Engineering
- h) Metallurgy and Materials Engineering
- i) Mining Engineering

On the basis of performance of a student, options are offered to (i) Change discipline at the end of 2nd semester for BTech programme and (ii) Switch over to Dual Degree (BTech-MTech) programme at the end of 6th semester for completing MTech programme along with the BTech programme by studying for one more year.

3.2 Five-Year BArch Degree

The Institute offers Five-year full-time programme in Architecture leading to BArch Degree.

3.3 Two-Year MTech Degree

The Institute offers **Two-year full-time** programme leading to **MTech Degree** in the following disciplines:

- a) Applied Mechanics- Aerospace Engineering and Applied Mechanics Department
- b) Civil Engineering- Civil Engineering Department
- c) Computer Science and Engineering- Computer Science and Technology Department
- d) Electrical Engineering- Electrical Engineering Department
- e) Electronics and Telecommunication Engineering- Electronics and Telecommunication Engineering Department
- f) Renewable Energy Science and Technology School of Advanced Materials, Green Energy and Sensor Systems
- g) Materials Science and Engineering- School of Advanced Materials, Green Energy and Sensor Systems
- h) Biomedical Engineering- Centre for Healthcare Science and Technology
- i) Safety & Occupational Health- Centre for Healthcare Science and Technology
- j) Information Technology-Information Technology Department
- k) Metallurgy & Materials Engineering- Metallurgy and Materials Engineering Department
- I) Mechanical Engineering Mechanical Engineering Department
- m) Mechatronics- School of Mechatronics and Robotics
- n) Mining Engineering-Mining Engineering Department
- o) Geoinformatics- Mining Engineering Department
- p) VLSI Design- School of VLST Technology

Details of specializations for the courses above are furnished in Table 3.1.

3.4 Two-Year MPlan Degree

The Institute offers **Two-year full-time** programme in the following discipline leading to **MPlan Degree**

a) Urban and Regional Planning- Department of Architecture, Town and Regional Planning

Table 3.1: Details of MTech / MPlan Programmes

Academic Units	Specializations			
Department of Aerospace Engineering and	Mechanics of Fluids			
Applied Mechanics	Mechanics of Solids			
Department of Architecture Town and Regional Planning	Urban and Regional Planning			
Centre for Healthcare Science and Technology	Biomedical Engineering			
Centre for Healthcare Science and Technology	Safety and Occupational Health Engineering			
	Environmental Engineering			
	Geotechnical Engineering			
Department of Civil Engineering	Structural Engineering			
	Transportation Engineering			
	Water Resources Engineering			
Department of Computer Science & Technology	Computer Science & Technology			
	Control System & Instrumentation			
Department of Electrical Engineering	Power & Energy Systems			
	Power Electronics, Machines and Drives			
Department of Information Technology	Information Technology			
	Machine Design			
Department of Mechanical Engineering	Thermal Engineering			
	Manufacturing Science			
Department of Metallurgy & Materials	Materials Engineering			
Engineering	Manufacturing Technology			
Department of Mining Engineering	Geoinformatics			
Department of Mining Engineering	Mining Engineering			
Department of Electronics and	Communication Engineering & Signal Processing			
Telecommunication Engineering	Microelectronics and VLSI Design			
	Microwave Communication			

Academic Units	Specializations				
School of Advanced Materials, Green Energy	Materials Science and Technology				
and Sensor Systems	Renewable Energy Science and Technology				
School of Mechatronics & Robotics	Mechatronics				
School of VLSI Technology	VLSI Design				

3.5 Two-Year MSc Degree

The Institute offers **Two-year full-time** programme leading to **MSc Degree** in the following disciplines

- a) Chemistry-Chemistry Department
- b) Food Processing & Nutrition Sciences- School of Community Science and Technology
- c) Applied Geology- Earth Science Department
- d) Applied Mathematics- Mathematics Department
- e) Physics-Physics Department

3.6 Two-Year MBA

The Institute offers a **Two-year full-time** programme leading to **MBA Degree** by School of Management Sciences.

3.7 PhD Programme

The Institute offers **full time Doctoral Programme** to obtain **PhD Degree** in (i) Architecture, (ii) Engineering, (iii) Science and (iv) Management.

3.8 Student Strength

Table 3.2: Student Strength

	UG				PG			PhD					
Category	Male		Female		Ма	Male Female		Male		Female		Total	
	NPH	PH	NPH	PH	NPH	PH	NPH	PH	NPH	PH	NPH	PH	
General	821	28	239	5	356	1	139	0	401	3	164	0	2157
SC	335	1	92	0	85	0	32	0	98	0	36	0	679
ST	165	0	57	0	22	0	12	0	1	0	0	0	257
OBC	602	4	207	2	162	1	32	0	96	0	20	0	1126
EWS	191	1	37	0	50	0	14	0	5	0	5	0	303
Total	2114	34	632	7	675	2	229	O	601	3	225	o	4522

Table 3.3: PhD Students

PhD Students	2015-16	2016-17	2017-18	2018-19	2019-2020	2020-21	2021-22
No. of Full Time Admitted	131	71	171	52	85	72	57
Degree Awarded	57	74	83	63	96	108	129

3.9 Institute Result

I. Statistics of Examination Year 2021

Course	Appeared	Passed	Pass Percentage
Bachelor of Architecture	20	20	100
Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Mechanical Engineering	1	1	100
Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Civil Engineering	1	1	100
Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Electrical Engineering	1	1	100

Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Electronics & Telecommunication Engineering	2	2	100
Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Metallurgy & Materials Engineering	1	1	100
Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Information Technology	2	2	100
Bachelor of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Aerospace Engineering	2	2	100

II. Statistics of Examination Year 2021

Course	Appeared	Passed	Pass Percentage
Bachelor of Technology in Mechanical Engineering	60	60	100
Bachelor of Technology in Civil Engineering	85	85	100
Bachelor of Technology in Electrical Engineering	73	73	100
Bachelor of Technology in Electronics & Telecommunication Engineering	53	53	100
Bachelor of Technology in Metallurgy & Materials Engineering	26	26	100
Bachelor of Technology in Mining Engineering	29	29	100
Bachelor of Technology in Computer Science and Technology	71	71	100
Bachelor of Technology in Information Technology	69	69	100
Bachelor of Technology in Aerospace Engineering	26	26	100

III. Statistics of Examination Year 2021

Course	Appeared	Passed	Pass Percentage
Master of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Mechanical Engineering	3	3	100
Master of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Civil Engineering	7	7	100
Master of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Electrical Engineering	2	2	100

Course	Appeared	Passed	Pass Percentage
Master of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Electronics & Telecommunication Engineering	2	2	100
Master of Technology Under Five Year Dual Degree (BTech - MTech) Programme in Information Technology	1	1	100

IV. Statistics of Examination Year 2021

Course	Appeared	Passed	Pass Percentage
Master of Technology in Mechanical Engineering	19	19	100
Master of Technology in Civil Engineering	46	44	95.65
Master of Technology in Electrical Engineering	22	20	90.9
Master of Technology in Electronics & Telecommunication Engineering	29	29	100
Master of Technology in Metallurgy and Materials Engineering	2	2	100
Master of Technology in Mining Engineering	5	5	100
Master of Technology in Computer Science & Engineering	14	14	100
Master of Technology in Information Technology	14	14	100
Master of Planning	11	11	100
Master of Urban and Regional Planning	2	2	100
Master of Technology in Applied Mechanics	14	11	78.57
Master of Technology in Geoinformatics	12	12	100
Master of Technology in Renewable Energy Science and Technology	6	6	100
Master of Technology in Safety and Occupational Health	7	7	100
Master of Technology in Biomedical Engineering	7	7	100
Master of Technology in Materials Science and Engineering	6	6	100
Master of Technology in VLSI Design	16	16	100
Master of Technology in Mechatronics	12	12	100
Master of Science in Chemistry	20	20	100
Master of Science in Applied Mathematics	21	21	100
Master of Science in Physics	22	22	100
Master of Science in Applied Geology	22	22	100

Course	Appeared	Passed	Pass Percentage
Master of Science in Food Processing & Nutrition Science	14	14	100
Master of Business Administration	14	14	100

3.10 Convocation

The Eighth Annual Convocation of the Institute was held on March 11, 2022. Dr. Subhas Sarkar, Hon'ble Minister of State for Education, Government of India delivered the Convocation Address as the Chief Guest. Prof. Parthasarathi Chakrabarti, Chairperson, Board of Governors and Director, IIEST, Shibpur, presided over the function.

Total number of Degree recipients in this Convocation was 1016. Degrees and prizes had been awarded in this Convocation to a total of 522 Undergraduate students of 10 courses, 350 postgraduate students from different courses, 15 Dual Degree students of five courses and 129 Ph.D. Fellows who had completed their studies and passed the examinations during this period. Medals had been awarded to 39 candidates who had secured highest marks in different disciplines. THE PRESIDENT OF INDIA GOLD MEDAL had been awarded to the student Subhechchha Paul, Mechanical Engineering Department who secured 1st position among the undergraduates of all ten engineering disciplines taken together. GANESH CHANDRA MITRA MEMORIAL MEDAL had been awarded to the student Nabanita Karmakar, Mathematics Department who secured 1st position among the postgraduates of all the disciplines taken together. Some endowment medals also had been awarded to the students who had stood first in their respective disciplines or had secured highest marks in particular subject.

Academic Units

4. Academic Units

Departments

4.1 Department of Aerospace Engineering and Applied Mechanics (AE&AM)



The Department of Applied Mechanics was established as a major engineering department in 1947, and from 2008 the Department was renamed as the Department of Aerospace Engineering and Applied Mechanics. The Department offers undergraduate program in Aerospace Engineering and postgraduate programs in different areas of Applied Mechanics. Till date, the prominent research areas of the department are Aerodynamics, Aerospace structures, High speed flow, Fluid dynamics, Turbulence, Biomechanics, Robotics and Mechatronics, Structural Dynamics and Earthquake Engineering, Soil-Structure Interaction, Hydraulics etc. Recent sponsors of research projects at the department include: DST, DRDO, NAL, AICTE, UGC, BARC, BRNS, MHRD, Ministry of Earth Science and CSIR. The research outcomes of the department can be gauged by the significant number of publications made by faculty members in journals of repute.

Sponsored Programme Organised

- 1. Dr. Joydeep Bhowmik
 - a) Webinar, 'Session on prototype validation-converting prototype into startup', Sponsored by MIC, 15-May-21, 1 Day

- b) Webinar, 'Workshop on business model canvas Session on prototype validation-converting prototype into startup', Sponsored by MIC, 27-May-21, 1 Day
- c) Webinar, 'Session on building an innovation fit for market', Sponsored by MIC, 15-May-21, 1 Day

Workshops/Conferences/Seminars Attended in India and Abroad

- Dr. Salil Haldar International Conference on Processing and Characterization of Materials (ICPCM-22), Organised by Sri Sivasubramaniya Nadar College of Engineering, International conference, 07-Mar-22 to 08-Mar-22
- 2. Dr Joydeep Bhowmik Innovation ambassador training basic, Organised by MIC, Short-term course, 30-Jun-21 to 30-Jul-21
- Dr. Niloy Khutia Online Workshop on High Performance Computing in Engineering, Organised by Indian Institute of Technology, Kharagpur and ANSYS, National workshop, 21-Oct-21 to 22-Oct-21
- 4. Dr. Prince Raj Lawrence Raj Online workshop on high performance computing for astrophysics and astronomy, Organised by SKA-India consortium and Indian Institute of Technology Kharagpur, National workshop, 20-Sep-21 to 23-Sep-21
- Dr. Debashis Pal Fluid Mechanics Colloquium series on Flipping with the Flow Perspectives
 of Puzzling Fluid Dynamics and Human Health, Organised by IIT Hyderabad, Webinar, 17Jun-21 to 17-Jun-21

4.2 Department of Architecture, Town and Regional Planning

The Department of Architecture, Town and Regional Planning at the Indian Institute of Engineering Science and Technology, Shibpur has a long and rich history. Shortly after Independence, in 1949, two sister Departments were established at the erstwhile Bengal Engineering College, that is, the Department of Architecture headed by Mr G K Paknikar and the Department of Town and Regional Planning headed by MrAbani Kumar De. The former offered the first 5-Year undergraduate degree in architecture of the country (Bachelor of Architecture-B Arch), the latter offered the first 2-Year postgraduate diploma in town and regional planning of the country (Diploma in Town and Regional Planning-DTRP).

Later, in October 1952, the two Departments merged to form the Department of Architecture, Town and Regional Planning headed by Mr Joseph Allen Stein, the renowned American architect, who has

left his indelible mark in the post-independence architecture of India. The DTRP programme subsequently became a full-time course in Master of Town and Regional Planning (MTRP) from 1975.



In 2019, responding to the requirements of the present times, the postgraduate programme was upgraded as Master of Planning (specialization in Urban and Regional Planning). This was done to broaden the horizon of the Department in terms of academics, research and students' employment opportunities.

In its first ever participation as an independent entity in the National Institutional Ranking Framework (NIRF) for Architecture, approved by the Ministry of Human Resource Development, the Department obtained the sixth position in India rankings 2020, from amongst 66 participating institutions and departments of architecture.

Now, as an integral part of the IIEST, the department has expanded considerably with varied areas of research that include the following Architecture and Built Form, Computer Aided Architecture, Vernacular and Rural Architecture, Energy and Building, Urban Design, Architectural Conservation, Housing and Human Settlement Planning, Transportation Planning, Remote Sensing and Geographical Information System, Environmental Planning and Management, Rural Planning and Development, Regional Planning and Development, Earthquake resilient Buildings and Built form, Urban Planning/Town Planning, Infrastructure Planning, Urban administration, management and finance, Climate Change and Human Settlements. Presently the department has developed several state-of-the-art facilities for the benefit of the students, such as Material Museum for permanent

display of samples of building materials, Computer Aided Architectural Design laboratory, Multimedia Simulation Laboratory and Remote Sensing and GIS laboratory.

• Sponsored Programme Organized

 Dr. Keya Mitra - Webinar, 'FDP on Earthquake Resistant Design', Sponsored by AICTE, 18-May-21, 1 Day

• Workshops/Conferences/Seminars Attended in India and Abroad

- Dr. Keya Mitra National Workshop on Earthquake Resistant Practices in the Built Environment, Organised by National Information Centre of Earthquake Engineering, IIT Kanpur, National workshop, 07-Aug-21 to 14-Aug-21
- 2. Dr. Souvanic Roy
 - a) Social Dimensions of Resilience: Challenges of Inner-City Redevelopment, Impacts & the Way Forward, Organised by Center for Habitat, Urban & Regional Studies (CHURS), Impact & Policy Research Institute (IMPRI), New Delhi, Webinar, 11-Aug-21 to 11-Aug-21
 - b) COP 26 & Locally Led Adaptations in India & Bangladesh Sundarbans, Organised by Center for Environment, Climate Change & Sustainable Development (CECCSD), Impact & Policy Research Institute (IMPRI), New Delhi, Webinar, 22-Feb-22 to 22-Feb-22.
- 3. Dr. Subrata Kr. Paul International Conference on Sustainable Urban Mobility (SUMo 2020), Organised by Institute of Town Planners India with the support of Ministry of Housing and Urban Affairs, Government of India and Urban Development and Municipal Affairs Department and Transport Department, Government of West Bengal, International seminar, 24-Sep-21 to 26-Sep-21

4. Dr. Soumen Mitra -

- a) National Workshop on Earthquake Resistant Practices in the Built Environment,
 Organised by National Information Centre of Earthquake Engineering, IIT Kanpur,
 National workshop, 07-Aug-21 to 14-Aug-21
- b) International Conference on Sustainable Urban Mobility (SUMo 2020), Organised by Institute of Town Planners India with the support of Ministry of Housing and Urban Affairs, Government of India and Urban Development and Municipal Affairs Department and Transport Department, Government of West Bengal, International seminar, 24-Sep-21 to 26-Sep-21

4.3 Department of Chemistry

The over a century old department has a glorious past. The Department, besides engaging itself in undergraduate and postgraduate teaching has a heritage of conducting research in various fields. At present, the faculty members are involved in research in the frontier areas of Chemistry and Chemical Physics, which include Coordination & Bioinorganic Chemistry, Carbohydrate Chemistry, Electrochemistry & Corrosion Science, Fuel Cell Technology, Molecular Recognition & Supramolecular Chemistry, Structural Chemistry, Catalysis, Synthetic Organic & Organometallic Chemistry, Thin Film Semiconductor, Solar Photo-voltaic & Photo-electrochemical Cells, Non-linear Optical Phenomena: Modelling& Computation, Non-equilibrium Statistical Mechanics, Relativistic & non-relativistic Electronic Structure Theory, and Fluorescence Spectroscopy and Imaging. The department is endowed with a number of research projects sponsored by various funding agencies. The department has also been selected for MHRD special grant and DST-FIST and UGC-SAP programmes.



• Workshops/Conferences/Seminars Attended in India and Abroad

Dr. Ajit Kumar Mahapatra - "Science, Technology and Innovation Policy 2020: A
Transformative S&T Agenda", Organised by Department of Chemistry, SRM University, AP,
National seminar, 30-Oct-21 to 30-Oct-21

- 2. Dr. Laksmikanta Adak Invited webinar lecture on "Utilization and Maintenance of Sophisticated Analytical Instruments in Research, Organised by University of Science & Technology, Meghalaya, India, Webinar, 07-Aug-21 to 07-Aug-21
- 3. Dr. Chinmoy Bhattacharya
 - a) Online Lecture Series in the field of electrochemistry and allied sciences, Organised by BARC in association with HBNI & ISEAC, Webinar, 11-Feb-22 to 11-Feb-22
 - b) Online Lecture Series in the field of electrochemistry and allied sciences., Organised by BARC in association with HBNI & ISEAC, Webinar, 31-Mar-22 to 31-Mar-22
 - c) Evening Lecture Series in the field of electrochemistry and allied sciences., Organised by ISEAC, BARC and HBNI, Webinar, 25-Jun-21 to 25-Jun-21

4.4 Department of Civil Engineering (CE)



Founded in May, 1856, the Department of Civil Engineering, as old as the Bengal Engineering College itself, is a 149-year-old Engineering Department. The Department was, originally established as the Civil Engineering College, Calcutta with the object of imparting training to personnel in the field of Civil Engineering for the fulfilment of the need of the Public Works Department of the Government of India. Since then, it has been striving to develop and maintain a glorious national tradition of producing quality Civil Engineers for the country. In course of time the Civil Engineering College was upgraded to the status of a full-fledged Government Engineering College with various disciplines, and renamed as the Bengal Engineering College. Then it was upgraded to Bengal Engineering and

Science University, Shibpur. Presently, the institute has been converted to an Institute of National Importance and named as IIEST Shibpur. The Civil Engineering department, at present, provides facilities for research and development in the broad areas of Structural Engineering, Geo-Technical Engineering, Water Resources Engineering, Environmental Engineering and Transportation Engineering. The Department has been associated with various sponsored projects in the above fields. It is one of the Government of India recognized Quality Improved Programme Centres and associated with topical research and development activities. The Department regularly undertakes sponsored research from the AICTE, MHRD, UGO, CSIR etc.

• Workshops/Conferences/Seminars Attended in India and Abroad

- Dr. Debojyoti Pandit Electronics & ICT Academy Supported by Ministry of Electronics and Information Technology (MeitY), Govt. of India, Organised by Indian Institute of Technology Guwahati, Short-term course, 14-Mar-22 to 19-Mar-22
- 2. Dr. Anirban Gupta LLow cost housing, drinking water and sanitation, Organised by Tripura State Centre, The Institution of Engineers (India), National seminar, 30-Oct-21 to





The Department of Computer Science and Technology (CST) was established in 1982. Since its inception the department has played an important role in developing a vibrant and forward-looking academic environment. The department always maintains state-of-the-art infrastructure and

facilities for advanced research and consultancy. It was accredited by the National Board of Accreditation (NBA) as 'A' grade and received ISO good certification in 1999-2000. The department was also honoured as the DST-FIST sponsored department in 2004. Some of the thrust areas identified by the department are Machine learning including Deep Neural Networks and Soft Computing techniques, Generative Adversarial Networks, Internet Of Things, Wireless Sensor Network, Mobile Computing, Cryptanalysis, Image, Text, Audio and Video Processing including Medical Image Analysis, Code Mixed Bilingual Language Processing, Low Resource Real Time Image Processing and Sequence Tagging, Managing Uncertainty in Primary Healthcare. Further, the department also conducts advanced research on Interconnection Network, Mixed Signal Design and Testing, Text Mining in Diverse Social Media Data Analysis, Theory and Applications of Cellular Automata in Diverse Fields, Synthesis and Testing of Reversible Circuit, Digital Micro Fluidic Bio Chip and Nano-Biochip, Pattern Recognition, and Bio Informatics.

• Sponsored Programme Organised

- Dr. Malay Kule International Conference, 'International Symposium on Devices, Circuits and Systems', Sponsored by IIEST, Shibpur, India and Hirosima University, Japan, 29-Mar-22, 3 Days
- Dr. Biplab Kumar Sikdar International Conference, 'First Asian Symposium on Cellular Automata Technology, 2022 (ASCAT 2022)', Sponsored by SPARC Project, Govt of India, 03-Mar-22, 3 Days

• Workshops/Conferences/Seminars Attended in India and Abroad

- Dr. Sipra Das Bit Attended as Tutorial Speaker, IEEE ANTS, 2021, Organised by IEEE ComSoc, International conference, 13-Dec-21 to 13-Dec-21
- 2. Dr. Biplab Kumar Sikdar First Asian Symposium on Cellular Automata Technology, 2022 (ASCAT 2022), Organised by IIEST Shibpur, International conference, 03-Mar-22 to 05-Mar-22
- 3. Dr.Apurba Sarkar COMSYS 2022, Organised by Department of Information Technology, North Eastern Hill University, National conference, 29-Sep-21 to 01-Oct-21

4.6 Department of Earth Sciences

The subject of geology was first introduced in the civil engineering curricula more than a century ago in the Department of Civil Engineering. Furthermore, Geology became an important section of the Department of Mining ever since its establishment in 1956. With introduction of master's programme

in applied geology, the department bifurcated and the Department of Geology came into being in 2005. It was later named as the Department of Earth Sciences to host teaching and research in a wide spectrum of Earth Sciences. This diversification from classical Geology has helped students to undertake research programs in other interesting fields like Hydrogeology with an application of GIS and Remote Sensing, Geophysics and Tectonic Geomorphology.



Students of the present department are being trained by permanent and eminent visiting faculty members involved in frontier areas of research like Structural Geology, Igneous & Metamorphic Petrology, Sedimentology, Sequence Stratigraphy, Basin tectonics, Hydrogeology, Environmental Geology etc. The students are taught to apply their knowledge to cope up with the need of hydrogeological problems, natural hazard mitigation, petroleum or mineral exploration, and geoscience research at par with international standard. Students are also getting the facility of performing analogue experiments in Experimental Geology Laboratory which will help students to understand the dynamics of Earth and process-response systems. The curriculum has been revised to meet the requirements of various Industries and National competitive examinations. The knowledge is helping them to get jobs in Government organizations like SWID, Geological Survey of India, Oil sectors, Mining Industries, and Academic Departments. Training of application of geological knowledge, which is essential for mine planning, handling other problems of mining qeology and engineering geology are also being imparted to them in this course.

Within a short span of time, the department has been able to accommodate several numbers of research scholars for the Ph.D. degree. At this stage, they are enrolled and working on research

problems in Hydrogeology, GIS-Remote Sensing applications, Sedimentology and Structural geology with Mathematical modelling. For the purpose of study, fund has been sanctioned through projects, mentored by the faculty members from the Department of Science & Technology, Govt. of India, University Grants Commission, ONGC& WBPDCL. The Department aims to focus on future efforts to apply geoscientific research in multidisciplinary subjects.

• Workshops/Conferences/Seminars Attended in India and Abroad

1. Dr. Moumita Talukdar has successfully completed the e-training on "Refresher Course on Characterization of Shear Zone" conducted by RTD, ER, GSITI, Kolkata on 31st July, 2021.

4.7 Department of Electrical Engineering (EE)



A combined Electrical and Mechanical Engineering Department was established in the then Bengal Engineering College in the year 1902. Demerger of the departments took place in 1912 and the Department came into existence. The degree course in Electrical Engineering was introduced during the year 1935-36. First batch of students with M.E. Degree in Electrical Engineering came out in 1955. Since 1989 this department has been serving as one of the QIP Centres for Post Graduate Studies and Research in Electrical Engineering. Research specializations offered in the department include Control Systems, Electrical Machines, Power Electronics, and Power Systems. The faculty members are actively engaged in numerous collaborative and sponsored research projects. In the last few years, a number of research projects with a funding of around Rs.5 crores are under execution.

There have been consistent efforts in the field of Magnetics for the last few years. The notable Research Projects from the Department of Electronics and IT, Gol going on during the 2020-21 are Wide- band Gap Based Semiconductor Device for High Current Industry Applications; MEMS for Electric Machines and Drives, Magnetic Core Power Inductors. Also, international Research Project Collaboration under the SPARC Scheme of MHRD is going on with, MIT USA in vibration monitoring systems for switched reluctance motor-based drives. Research work on high efficiency power electronic converter technology using next generation Si/SiC-based switching devices for high frequency operation under reduced losses, is under development with University of Hiroshima, Japan.

Another new field in the Area of Magnetics has been funded by DST, GoI, past researches in the Areas of Magnetic Bearings have opened up another Area for Exploration of Knowledge, i.e. Applications of Magnetostriction in Energy Harvesting. The research project aims to investigate various behaviors of magnetostrictive energy harvester under mechanical stress or vibration.

To add to the laurels of the Department, the intellectual assets created over the years have been patented, and have been granted this year, one in the area of instrumentation-in favour of both the Indian Council of Agricultural research(ICAR) and IIEST, Shibpur, 'A system for testing dynamically bending behaviour of semi rigid fabrics and a method of such testing.' And the second in the area of Power Electronics 'A Low Cost, Small in size and High Frequency Current Sourced Converter for Induction Cooking Application and heat treatment in soft metals.'

• Workshops/Conferences/Seminars Attended in India and Abroad

- 1. Dr. Anindita Sengupta INDICON2021, Organised by IEEE Kolkata Section, International conference, 19-Dec-21 to 21-Dec-21
- 2. Dr. Sumit Kumar Pandey
 - a) 2nd IEEE International Conference on Innovative Practices in Technology and Management (ICIPTM), Organised by IEEE, International conference, 23-Feb-22 to 25-Feb-22
 - b) 4th IEEE International Conference on Computing, Power and Communication Technologies (GUCON), University of Malaya, Kuala Lumpur, Malaysia, 2021, Organised by IEEE, International conference, 24-Sep-21 to 26-Sep-21
 - c) 27th International Conference of International Academy of Physical Sciences, on Recent Advances in Pure & Applied Algebra (RAPAA), India, 2021, Organised by NIT Jamshedpur, International conference, 26-Oct-21 to 28-Oct-21

- 3. Dr. Syed Abdullah Qasim
 - a) MI, AL and its Applications, Organised by Electronics and ICT Academy, NIT Patna, Short-term course, 13-Dec-21 to 19-Dec-21
 - b) Industrial Training on Automation, Organised by National Small Industries

 Corporation (NSIC) Ltd., Short-term course, 13-Dec-21 to 27-Dec-21
- 4. Dr. Moumita Talukdar Refresher Course on Characterization of Shear Zone, Organised by RTD, ER, GSITI, Kolkata, Short-term course, 27-Jul-21 to 31-Jul-21

4.8 Department of Electronics and Telecommunication Engineering (E&TCE)



The department of Electronics and Telecommunication Engineering started its journey in July, 1967 after its nucleation from the Department of Physics and Telecommunication from the erstwhile Bengal Engineering College. The batch of Electronics and Telecommunication engineers graduated from this department in 1971. The Master's program was launched in 1972 and the first batch of post graduate passed out in 1974. Currently, PG programmes are offered in the specialization of Microelectronics and VLSI Design, Microwave Communication, and Communication Engineering and Signal Processing.

The department, besides engaging itself in undergraduate and postgraduate teaching has a heritage of conducting research in various fields like MEMS based Biosensors, Graphene and other two

dimensional material based gas sensor devices, Microwave Devices, Electromagnetic Metamaterial, Microstrip Antennas, MIMO Radars for Collision Avoidance, VLSI Architecture Design for Real Time Signal and Image Processing Systems, Energy and Spectrally Efficient Wireless communication for Cellular IoTApplications, Artificial Intelligence in Medical Image Processing, Deployable Biosensors System for Pathogen Detection, Photonic Topological Devices based on 2D Photonic Crystal.

Department laboratories are upgraded with several high-end equipment like RF Network Analyzer (100MHz-40 GHz), Vector Signal Generator (9kHz-3GHz), Automatic PCB Prototype Machine for designing microstrip circuit, Photodiode Characterization Unit (200-2000 nm with Czerny-Turner Configuration), EDFA Training System, Laser Spectrum Analyzer, Positioner System for Antenna Measurements, BET Surface Area and Pore Size Analyzer, Dielectric Measurement Kit, Software Defined Radio and many more. Considerable effort has been put forward during the last couple of years towards setting up new laboratories for undergraduate and post graduate students like Microelectronics Lab, Digital Signal and Image Processing Lab, VLSI and CAD Lab, Microwave Research Lab and Anechoic Chamber, Wireless Communication Lab, Optoelectronics Lab.

The faculty members are actively engaged in their individual as well as numerous collaborative and sponsored research projects of UGC, CSIR, ISRO, DST, AICTE, DRDO, etc., worth a high value. In course of their research faculty members have published large volume of quality publications in different international and national journals and conferences. Faculty members have also earned lot prestigious awards and laurels through their research. Department has produced large number of technologists, scientists and educationalists over more than fifty years who are bearing the flag of the department worldwide.

Sponsored Programme Organised

 Dr. Debasis Mitra - National Workshop, 'Microwave Sensor I ntegrated with Machine Learning Technique for Healthcare Application', Sponsored by InCAP 2021, Jaipur, 13-Dec-21, 1 Days

Workshops/Conferences/Seminars Attended in India and Abroad

 Dr. Manas Rakshit - Faculty Development Programme on Deep Learning & Applications (Parallel Architectures), Organised by Electronics and ICT Academies at IIT Guwahati, IIT Kanpur, IIT Roorkee, MNIT Jaipur, NIT Patna, NIT Warangal and PDPM IIITDM Jabalpur, Others, 23-Aug-21 to 03-Sep-21

2. Dr.Chirasree RoyChaudhuri -

- a) Workshop on Scientific Communications, Organised by Indian national Young Academy of Science under INSA, Webinar, 25-Mar-22 to 26-Mar-22
- b) Characterization techniques in Materials and Devices, Organised by CSIR-NPL, National workshop, 14-Mar-22 to 15-Mar-22
- c) Delivered an invited talk at IEEE Women in Science and Engineering workshop, Organised by Mcquarie University, Australia, International workshop, 25-Aug-21 to 25-Aug-21.

4.9 Department of Human Resource Management (HRM)



The erstwhile Department of Training and Placement, was renamed as Department of Human Resource Management with extension of activities beyond job placements and training. The department also offers Ph.D. programmes in the areas of Entrepreneurship and IPR. The major current activities of the department encompass the following:

- Job Placements of students of the Institute through Campus and Off-campus selection processes.
- Vocational Training / Summer Internship of the students of the Institute including Summer Internship Programme at foreign universities and Remote Internship Programme at reputed industries.

- Facilitating various Grooming up (Personality/Soft-Skill/ Performance Effectiveness)
 Programmes for the Students
- Organizing / facilitating various Industry Engagement events / activities on behalf of various major industries

During 2020-21 Academic year, due to severe Covid pandemic resulting in lock-down for a considerable duration, entire selection process, both for final recruitment and Internship have successfully been organized on a virtual mode.

4.10 Department of Humanities and Social Sciences (HSS)



The establishment of the Department of Humanities in 1945 reflected a holistic and pragmatic approach to engineering education in the modern era. Renamed as the Department of Humanities and Social Sciences in 2004, the department has always emphasized the need for modernized syllabus in communication skills, knowledge of the society, and economy that are in tune with contemporary developments. Along with Core and Elective courses in Sociology, Management and Finance, the Humanities and Social Sciences department has been offering a core course on Professional Communication in English to the B.Tech. First semester students. Various other English elective courses on Indian Writing in English, Literature and Urban Experience, Popular Literature, Film Studies, Business Communication, Research and Technical Writing for Engineers are also offered both at the undergraduate and the postgraduate levels. It is also imperative that the students of IIEST, Shibpur should have adequate managerial skills to cope with the recent changes in the social

and the economic environment of business. It is, therefore, the responsibility of the Humanities and Social Sciences department to fill the lacunae in the aforementioned areas and enable a less jarring transition of our graduates from students to responsible and mature citizens. Additionally, the HSS department also extends its teaching to the postgraduate courses in the MBA programme since 1999. The department, at present, offers Ph. D programs in English and Cultural Studies, and Management Studies. It also offers a compulsory course on Technical Writing to all the Ph.D. scholars of the institute. The department seeks to offer new courses on Basic & Development Economics, Data Analysis and Corporate Governance in the near future.

The HSS Department also runs an outreach programme named "ICCHE." Under the aegis of this programme, the students of IIESTS teach local slum and pavement dwelling children after class hours. They also organize hands-on training in computers and teach children a variety of life skills. ICCHE has also done commendable work during the Covid period in distributing provisions to the families in the neighbourhood. ICCHE not only benefits the above-mentioned children but also the participating students of IIESTS who get a grooming in having a sense of social responsibility and feeling of empathy towards the underprivileged and downtrodden section of the society. The programme is running under at present the guidance of CMA Rupen Basu Mallik, an Associate Professor of the Department.

Workshops/Conferences/Seminars Attended in India and Abroad

- Dr. Madhumita Roy 6th International Conference on New Findings on Humanities and Social Sciences, International conference, 20-Aug-21
- 2. Mr. Subhasis Bandyopadhyay Center for Global Studies Panel on Global Pandemic,
 Organised by Purdue University North West, International workshop, 10-Apr-21 to 10-Apr-21

4.11 Department of Information Technology (IT)

The beginning of this century is marked as the start of the Information Age which has not only revolutionized Indian and global industrial markets but has also had an impact on the engineering education system. The erstwhile BESU, Shibpur responded timely by introducing a new specialized engineering degree course in Information Technology under the department of Information Technology in the year 2000. The course is unique with respect to the similar degree program offered by other Indian universities and is framed accordingly to educate graduate engineer to be an expert of microelectronics-based processing, computing and communication of data that global IT sector of coming days demands. The department has celebrated its first 10 years of existence with an

impressive record of achievement. The strength of the department has been in its diverse areas of research in which it has excelled. Research focuses of the department are in the fields of Systems Architecture and Design, Theory and Applications of Cellular Automata, Digital Image Watermarking and Signal Processing, Digital Geometry and Image Analysis, Wireless and Mobile Communication, Sensor Network, FPGA based Embedded Systems.



• Sponsored Programme Organised

- Dr. Shyamalendu Kandar Webinar entitled Information Security: Approaches in Application to Physical Layer. sponsored by TEQIP on 11/01/2021 for 5 days by
- 2. Dr. Ruchira Naskar Webinar entitled Recent Trends and Applications in Machine Learning sponsored by TEQIP-III, IIESTS on 15/02/2021 for 5 days
- 3. Dr.Shyamalendu Kandar International Conference entitled ICMC 2021 sponsored by on 02/03/2021 for 4 days
- 4. Dr. Sukanta Das International Workshop entitled Cellular Automata and Secured Hardware

 Design sponsored by SPARC on 15/03/2021 for 5 days
- 5. Dr. Sukanta Das International Conference, 'First Asian Symposium on Cellular Automata Technology', Sponsored by SPARC, 03-Mar-22, 3 Days

6. Dr. Hafizur Rahaman -

- a) International Conference, '5th International Symposium on Devices, Circuits and Systems (ISDCS)', Technically Sponsored by Springer USA, 29-Mar-22, 3 Days
- b) International Conference, 'International Symposium on Devices, Circuits and Systems (ISDCS 2021) 5th International Symposium on Devices, Circuits and Systems (ISDCS)', Sponsored by ILDP, Hiroshima University, Japan, 04-Jul-21, 3 Days
- 7. Dr. Prasun Ghosal Webinar, 'International Webinar on Cyberphysical Digital Microfluidic Biochips in Healthcare Technologies and Applications International Webinar on Impact of Digital Revolution on Pharma & Healthcare', Sponsored by Scheme for Promotion of Academic and Research Collaboration (SPARC), MHRD, Govt. of India, 10-Aug-21, 3 Days

• Invited Talks and Key-note addresses

- 1. Dr. Ruchira Naskar
 - a) Invited to deliver a talk on "Digital Multimedia Security and Testing" in the 14th National Workshop on Recent Trends in Software Testing (RTST-2021), 2021.
 - b) Invited to deliver a talk on "Digital Forensics" in the All-India Council for Technical Education (AICTE) Training and Learning (ATAL) Academy funded Faculty Development Program organized by NIT Rourkela in 2021.

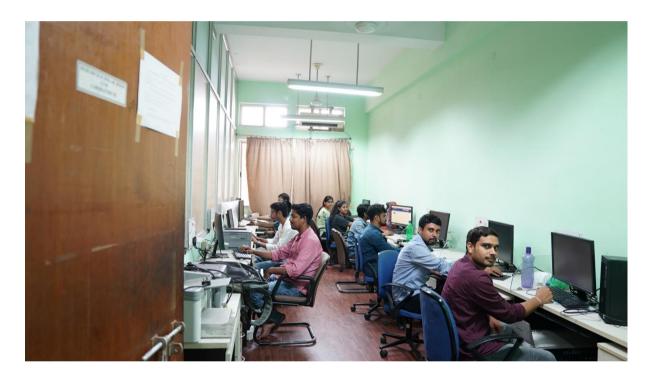
• Workshops/Conferences/Seminars Attended in India and Abroad

- Dr. Chandan Giri 5th Intl. Symposium on Device, Circuits and Systems (ISDCS), 29th March
 -31st March 2022, Organised by IIEST, Shibpur and Hiroshima University, Japan,
 International conference, 29-Mar-22 to 31-Mar-22
- Dr. Surajit Kumar Roy International Symposium on Devices, Circuits and Systems (ISDCS),2022, Organised by IIEST,Shibpur and Hiroshima University, International conference, 29-Mar-22 to 31-Mar-22
- 3. Dr. Arindam Biswas 9th International Conference on Pattern Recognition and Machine Intelligence (PReMI-21), Organised by ISI Kolkata, International conference, 15-Dec-21 to 18-Dec-21
- 4. Dr. Hafizur Rahaman VLSID 2022: International Conference on VLSI Design and International Conference on Embedded Systems, Organised by VSI, IEEE, International conference, 26-Feb-22 to 02-Mar-22

5. Dr. Prasun Ghosal -

- a) MICRO '21: 54th Annual IEEE/ACM International Symposium on Microarchitecture, Organised by IEEE, International conference, 18-Oct-21 to 20-Oct-21
- b) 2021 Devices for Integrated Circuit (DevIC), Organised by IEEE, International conference, 19-May-21 to 21-May-21
- c) NANOCOM '21: The Eighth Annual ACM International Conference on Nanoscale Computing and Communication, Organised by IEEE, International conference, 07-Sep-21 to 09-Sep-21

4.12 Department of Mathematics



The Department of Mathematics, established at the very inception of the institute, has consistently been one of the most active departments both in terms of delivery of course material and research output. Besides instilling in the undergraduate engineering students of the institute the rudiments of pure and applied mathematics since its commencement in 1856, the department has also been offering the Masters of Science in Applied Mathematics degree since the year 2000. Correspondingly, the department now undertakes the teaching of a wide variety of Pure and Applied courses including Analysis, Algebra, Differential Equation, Discrete Mathematics, Linear Programming, Operations Research, Mathematical Biology, Statistics, Numerical Analysis and Computational Techniques, to undergraduate and postgraduate students in various branches of Science, Engineering and Architecture. The department also has a rich history of conducting impactful research in these and

other related fields of Mathematics. Specifically, research work is undertaken throughout the areas of Functional Analysis, Topology, Nonlinear Dynamics and Chaos, Mathematical Biology, Elasticity, Fluid Mechanics, Cosmology, Quantum Information Theory, Mathematical and Statistical Theory of Life Testing and Reliability, Fuzzy Logic, Fuzzy Optimization and Application in Operations Research, Management System.

• Workshops/Conferences/Seminars Attended in India and Abroad

1. Dr. Tapan Kumar Kar – FDP on Mathematical Biology and Biostatistics, Organised by Department of Mathematics, Amity University, Kolkata, Others, 26-Jul-21 to 30-Jul-21

4.13 Department of Mechanical Engineering (ME)



2021 marks the Centenary Year for the Mechanical Engineering Department of IIEST Shibpur. The inception of the department may be traced back to the pre-independence era of the country, with the initiation of a diploma course in Mechanical Engineering in 1921. The first degree level course in Mechanical Engineering started in 1930. Postgraduate courses in the department started in 1954. Over the years, through its high level of teaching and research, the department has earned a name and fame for itself, making significant contributions to this important field of engineering.

The department offers 8-Semester Undergraduate (BTech) and 4-Semester Postgraduate (MTech) courses in Mechanical Engineering, with current annual intakes of 92 and 30, respectively. A 10-

semester Dual Degree BTech-MTech program is also in place. Currently, MTech courses are available in three specializations, namely, Machine Design, Thermal Engineering, and Manufacturing Science. The department's students find placement with major players in the industry. Many students also find research opportunities in India and abroad. The department runs a full-time PhD program, where currently about 40 research scholars are engaged, mostly with institute fellowship, in research in frontier areas like vibration and control, composite materials, tribology, energy technology & renewable energy, non-traditional machining, biomechanics, advanced ceramics, combustion science and technology, Alternative fuels, CFD and numerical heat transfer. Many research projects are supported by funding agencies like DST, MHRD, BRNS etc.

The departmental faculty consists of erudite teachers who actively pursue research work of original nature and publish research findings in reputed international journals and also disseminate their experiences through invited talks in national and international conferences and seminars. Many faculty members work in close cooperation with researchers in other Indian as well international institutes and some are also associated with renowned professional societies like Society of Automotive Engineers (SAE), Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), Solar Energy Society of India (SESI), American Society of Mechanical Engineers (ASME, USA), Institution of Mechanical Engineers (IMechE, UK), The Institution of Engineering & Technology (IET, UK) etc.

• Sponsored Programme Organised

- Dr. Aritra Ganguly National Workshop, 'Recent Trends in Automobiles and Engines-Indian Perspective', Sponsored by SAE IIEST, Chapter, 25-Jan-22, 1 Day
- 2. Dr. Mukesh Kumar National Workshop, 'Recent Trends in Automobiles and Engines: Indian Perspective', Sponsored by Institute, 25-Jan-22, 1 Day
- 3. Dr. Bidyut Pal
 - a) Webinar, '3D Printing: Technologies and Applications', Sponsored by Webel Fujisoft Vara Centre of Excellence in Industry 4.0, 16-Mar-22, 1 Day
 - b) 'Weekly Centenary Lectures, Mechanical Engineering Department3D Printing: Technologies and Applications'28-Dec-21

Workshops/Conferences/Seminars Attended in India and Abroad

- 1. Dr. Bidyut Pal
 - a) National Webinar on Recent Trends in Metal 3D Printing and Its Industrial Applications (RTM3DPIA2021), Organised by Department of Mechanical Engineering, Indian Institute

- of Technology Patna, Department of Mechanical and Aerospace Engineering of the Indian Institute of Technology Hyderabad, and Defence Research & Development Laboratory (DRDL, DRDO), Webinar, 17-Nov-21 to 17-Nov-21
- b) Innovation Ambassador Training Program, Organised by MoE (MIC), Others, 10-Aug-21 to 31-Aug-21
- c) 4th International Conference on Clinical Spine & Orthopedic Biomechanics, Organised by Indian Spinal Injuries Centre, IIT Delhi, University of Hamburg and University of Toledo, International conference, 16-Apr-21 to 18-Apr-21

4.14 Department of Metallurgy and Materials Engineering (MET)



The Department of Metallurgy started its journey at the Bengal Engineering College in the year 1939 with the introduction of a 3-year degree course in Metallurgy under the Calcutta University. The department is the second oldest metallurgy department in the country. A two-year post-graduate degree program in Physical Metallurgy was introduced in the year 1953. It has now evolved into a four-year course. This department was the first to introduce a post-graduate course in metallurgy in the country. Prof. N. N. Sen, who later became the Principal of the B. E. College, was the first Professor and Head of the Department of Metallurgy, Chemistry, and Geology. In 1965, Chemistry became a separate department, and Geology was attached to the Department of Mining. In 1949, Prof. W. Baukhloh of Technische Hochschule, Berlin joined the department as a Professor of Metallurgy. There was a spurt in the research activity in the department with the joining of Dr. A. K.

Seal as a faculty in 1949 after the completion of his Ph.D. from Sheffield University. Over the years, the department has produced a good number of eminent metallurgists working in India and abroad. They have made significant contributions to academics, research, and industry. The department takes pride in recalling that Sri P. R. Roy and Dr. C. Ganguli, both; alumni of this department, have received the prestigious Padma Shri Award of the Government of India.

The department, in its continued inspiration of young minds towards embracing the true notion of materials engineering, has produced an annually increasing number of B. Tech graduates moving towards academia, placing them among some of the best universities of the world like the University of Michigan, UC San Diego, University of Illinois at Urbana Champaign, University of British Columbia and so on. The B. Tech programme is also a major player in providing the nation's leading metallurgical industries like Tata Steel Ltd., Vedanta Ltd., Aditya Birla Group, etc., with some of the brightest minds, boasting of increasingly robust placement records year after year. The Ph.D. program has, so far, produced a considerable number of doctorates. At present research in several diverse areas, e.g., steel, nonferrous alloys, composites, Nanoscience and Nanotechnology, are being actively pursued. The department has already pioneered the development of certain vital steels and alloys like HSLA steels, maraging steels, and shape memory alloys, to name a few. These developments have had a tremendous impact on the overall development of the subject in the national scenario. Special efforts have been directed towards the evolution of suitable means for effective technology transfer to the existing industries. The department feels proud to announce its collaborative ventures with organizations, such as, TISCO, SAIL, ISRO, BARC, NML, ICDC, and NMRL.

The faculty members of the department have developed excellent expertise in the areas of Physical Metallurgy, High Strength Steels, Tribology, Mechanical Behaviour of Materials, Nano-Technology, Powder Metallurgy, Multifunctional composites, Computational Materials Engineering, Diffusion Bonding and Friction of Stir Welding. Fresh perspectives riding on the advancements in materials engineering and technology have prompted the launch of specializations like manufacturing technology and materials engineering in the M. Tech. curricula as well. These will help breathe in a novel outlook in the form of subjects like additive manufacturing, multifunctional materials, biomedical devices, etc., welcoming the Government's initiatives of focusing more on smart and advanced materials.

The department is thus continuing to be a major influence on the developmental scope of metallurgy and materials engineering in India, eschewing notions of stagnancy and bolstering the nation's efforts in achieving self-sustenance in every walk of science and technology.

Sponsored Programme Organised

- Dr. Manojit Ghosh International Conference, 'Intuitions and Innovations on Future Generation Materials', Sponsored by Scheme for Promotion of Academic and Research Collaboration (SPARC), MoE, Gol, 11-Feb-22, 2 Days
- 2. Dr. Gautam Anand International Workshop, 'Exploiting Machine Learning in Multiscale Modelling of Materials (EMLM-3)', Sponsored by DST-UKIERI, 13-Dec-21, 5 Days

• Workshops/Conferences/Seminars Attended in India and Abroad

- 1. Dr. Kaushik Das
 - a) Capability and Tools / Technology Mapping, Organised by ICME National Hub, IIT Kanpur, National workshop, 19-Feb-22 to 20-Feb-22
 - b) Modelling of microstructural evolution in steels, Organised by Tata Steel, Webinar, 02-Dec-21 to 03-Dec-21
 - c) IIM ATM 2021, International Conference and NMA, Organised by Indian Institute of Metals, International conference, 13-Nov-21 to 15-Nov-21
- Dr. Debdulal Das International Conference on Advanced Materials and Mechanical Characterization, ICAMMC 2021, Organised by SRM Institute of Science and Technology, Chennai, International conference, 02-Dec-21 to 04-Dec-21

4.15 Department of Mining Engineering (MIN)



In India, tertiary level education and training in mining engineering started at this Institute, way back in 1906. The Department was winded up in 1929 and re-established in1956. The department is dedicated towards in depth education, research and consultancy in mining engineering and its allied fields. The Department offers undergraduate and post graduate programme in Mining Engineering and post graduate programme in Geo-informatics. The Department of Mining Engineering is an approved QIP centre for postgraduate study in Mining Engineering. Research specializations available in the department include Mining Machinery, Carbon sequestration, Coal bed methane, GIS and Remote sensing, Mine Environment, Environmental Management, Mine Planning and Design, Mineral Dressing, Ergonomics, Occupational Health and safety and Rock Mechanics and Strata Control. During 20-21, total 04(four) nos. PhD was awarded total 30 (thirty) consultancy projects with sanctioned amount of Rs. 631.43 Lakhs and 01(one) R&D Project with sanctioned amount of Rs. 32.71 Lakhs was sanctioned in 20-21.

• Sponsored Programme Organised

1. Dr. Netai Chandra Dey – Webinar, 'Computer Application in MiningSolutions to Mining Industrial problems', Sponsored by Institutions of Engineers (India), 27-Feb-22, 1 Day

4.16 Department of Physics



The department of Physics has a century old past and has come through the era of revolutionary thoughts in the world of physics to the present century of technological revolution. The year 2000 can be considered as a landmark for this department when the M.Sc. course in Applied Physics was

introduced. In the last five years the faculty members of the department have contributed more than 100 research papers in international journals of repute and many international conference proceedings. Nearly thirty PhD students are working in this department. Many of our old students are engaged in research and some of them are also in scientific jobs in various premier research institutions of India, such as SINP, IACS, TIFR, BARC, IPR,CGCRIetc. as well as in different well recognized universities and institutes in abroad. The department is endowed with a number of research projects sponsored by various funding agencies. Physics department has also been awarded with phase-I of DST-FIST. At present the departmental faculty members and their research groups are actively working in the following identified broad thrust areas of research like Condensed matter physics theory and applications in magnetic, electronic optoelectronic and photonic materials and devices and Nuclear physics: Experiment and Theory, Cosmology and Theoretical High Energy Physics.

Schools

4.17 School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS)



School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS) has been formally created by the clubbing of erstwhile Centre of Excellence for Green Energy and Sensor Systems (CEGESS) and M. N. Dastur School of Material Science and Engineering (MNDSMSE) in Jan 2021.

CEGESS was established in November, 2009 with the objectives to promote renewable energy in general and Solar Energy in particular, to conduct cutting-edge research as a frontline R&D incubator through a multidisciplinary approach in the field of renewable energy and sensor systems, and to contribute to the development of highly qualified and innovative personnel through specialized training and knowledge build-up in areas of renewable energy and sensor systems. The Research and education at CEGESS is closely associated with industry and several national and foreign academic institutions of repute with an aim to foster cutting edge research and establish ourselves as a leader in this field. Interests and activities in the centre include solar cell design, fabrication and characterization with a special focus on nano-materials, solar photovoltaic systems design and development, solar energy storage system, smart microgrid, sensor design, fabrication and characterization using novel materials and methods for agricultural, environmental, automobile and healthcare applications (including quantum dot-based biosensors) and development of SMART sensor system

MNDSMSE was established in 2001 to address the growing demand amongst the academicians, scientists and practicing engineers. The knowledge of behaviour of materials is a prerequisite for the holistic development of science, engineering and technology with a focus to provide a synergic environment to pursue the interdisciplinary teaching and research. The school has the theoretical and experimental resources to address the scientific and engineering problems. Since last decade the school has been able to make modest footprints in its journey towards development and understanding the characteristics of advanced and emerging materials for efficacious application. From 2003, the School has been offering an M. Tech. Programme in Materials Engineering. Thrust areas of research for the School are Nano-structured semiconducting materials, Energy and Environment Materials, Smart materials, Composite materials, High strength steels, Materials modelling and Optimisation, and Bio-materials. In addition to research the school provides technical consultancy services to various industries and govt agencies.

At SAMGESS both the activities described above are being continued with integrated management of existing resources available to both CEGESS and MNDSMSE.

Workshops/Conferences/Seminars Attended in India and Abroad

 Dr. Joynarayan Mukherjee - Nanomaterials, Physics & Chemistry: Recent Developments & Applications (NPCRDA), Organised by Narajole Raj College, W.B., India, National seminar, 11-Jul-21 to 12-Jul-21

4.18 School of Community Science & Technology (SOCSAT)

Indian Institute of Engineering Science and Technology, Shibpur, (formerly Bengal Engineering & Science University, Shibpur) has a fairly long tradition of rendering community service modestly besides conducting traditional academic programs. Community service rendered by the faculty members has been ranging from formulation to implementation of specific programs like technology innovation and technology transfer to the rural sector. To facilitate such activities of the faculty members of the Institute, the School of Community Science & Technology (SOCSAT) was created in 2004. The school since then made significant progress in the areas of basic and applied research in combination with various training programs that are congruous with the objectives of the school. M.Sc. Course in "Food Processing and Nutrition Science" has been started from the Academic session (2007-2008).



4.19 School of Disaster Mitigation Engineering

In the spirit of developing interdisciplinary research facilities and the development of different mitigation processes against natural hazards, the School of Disaster Mitigation Engineering has been established by this university in 2007. The experimental workstation of the school is under construction near the 2nd gate of this University, where a 1.5 m x 1.5m Horizontal single Axis Seismic Table has been installed in October 2008 under the TEQIP program. For the school, housing has been provided on the 3rd floor in the 8th storied new building under construction in the Southern portion of the University. Proposal for setting up Post Graduate Course in Disaster Mitigation Engg./Earthquake Engg. are being framed for introduction shortly.

4.20 School of Ecology, Infrastructure and Human Settlement Management

The School came into existence in 2006 to conduct inter-disciplinary and cutting edge research, postgraduate studies and to extend technical support services on issues having the critical interface of ecology, human settlements and infrastructure development. The School's activities focus on Spatial and Environmental Planning, Natural Resource Management, and Green Architecture. Identified thrust areas for the department include Spatial and Environmental Planning, Community based Natural Resource Management, Carrying Capacity Assessment for Urban Settlements, Human Settlement Planning for Ecologically Fragile Areas, Planning for Heritage Conservation, and Climate

Change and Human Settlements. The areas in which research work is undertaken also include Natural Resource Extraction and Livelihood, Sustainability for Local Communities, Green Building Techniques, and Institutional Reform and Capacity Building for Urban, Rural and Natural Resource Governance.

4.21 School of Management Sciences (SOMS)



School of Management Sciences has emerged as an Institution of excellence in all facets of management education with highly specialized, sophisticated and 21st Century oriented courses and curriculum. The goal of SOMS is to achieve professional growth through holistic management education to shape future leaders for the corporate through intermingling of functional knowledge of Marketing, Finance, Operations, Human Resource & IT Management.

The MBA programme is designed to deliver the latest business education. The emphasis of the programme is on an integrated understanding of the totality of business, its philosophy and socio-economic inter-relationship. The programme is specially designed to develop and enhance the basic managerial skills and abilities of students and to equip them with tools & techniques of modern management for better decision-making. Different teaching methods like case studies, simulation games, group discussions, group seminars, scenario building and project work are used to make the teaching-learning process interesting. Students are encouraged to analyze, innovate and prepare

themselves for professional challenges of the industry. The two years' programme leading to the Masters in Business Administration

• Sponsored Programme Organised

- 1. Dr. Partha Sarathi Chowdhury
 - a) Webinar, 'Interactive session on Relevance of Cross Functional Management and online courses in the changing times held on o6.08.2021 from 7.30 PM organised by Calcutta Management Association, Kolkata', Sponsored by Calcutta Management Association, Kolkata, o6-Aug-21, 1 Day
 - b) '63rd Annual General Meeting of the Calcutta Management Association, Kolkata to which SOMS, IIESTS is an Institutional Member, held on 21.08.2021 from 4.00 PM organised by Calcutta Management Association, Kolkata and as nominated by Prof. Anirban Gupta, HO Interactive session on Relevance of Cross Functional Management and online courses in the changing times held on 06.08.2021 from 7.30 PM organised by Calcutta Management Association, Kolkata', Sponsored by Calcutta Management Association, Kolkata, 21-Aug-21, 1 Day
 - c) Webinar, 'Webinar on Leadership of the Calcutta Management Association, Kolkata to which SOMS, IIESTS is an Institutional Member, held on 14.12.2021 from 6.30 PM organised by Calcutta Management Association, Kolkata', Sponsored by Calcutta Management Association, Kolkata, 14-Dec-21, 1 Day

• Workshops/Conferences/Seminars Attended in India and Abroad

- 1. Dr. Partha Sarathi Chowdhury
 - a) Webinar on Leadership of the Calcutta Management Association, Kolkata to which SOMS, IIESTS is an Institutional Member, held on 14.12.2021 from 6.30 PM organised by Calcutta Management Association, Kolkata, Organised by Calcutta Management Association, Kolkata, Webinar, 14-Dec-21 to 14-Dec-21
 - b) Online seminar talk on Supply Chain deliberated by Mr. Apurba Musib of TGI Group, South Africa held on 15.12.2021 from 2.30 P.M to 4.30 P.M organised by SOMS, IIESTS, Organised by SOMS, IIESTS, Webinar, 15-Dec-21 to 15-Dec-21

4.22 School of Mechatronics and Robotics (SMR)



Keeping parity with the evolving multi-disciplinary technological advancement, a School of Mechatronics and Robotics had been established in the Institute in 2007. In sync with the changed technological scenario, the School introduced a new specialized interdisciplinary postgraduate programme in Mechatronics in collaboration with three CSIR laboratories, namely - CMERI Durgapur, CEERI Pilani and CSIO Chandigarh. The course has been framed to educate graduate engineers to be an expert in mechatronics, an interdisciplinary subject that involves fusion of mechanical, electrical, and electronics engineering. Doctoral programmes in Mechatronics and Robotics are pursued at the School.

The School has been actively pursuing research in the areas of: Dexterous Robotic Hand, Mobile Robots, Micro Systems; Teleportation, Unmanned Aerial Vehicle, Bio-medical and Exoskeleton Devices, Prosthetics; Intelligent Systems; Multisensory Myoelctric Controlled Intelligent Active Ankle-Foot Prosthesis; Sensor Integrated Multi-Fingered Dexterous Robot Hand with Data Glove Interface, etc.Research facilities created in the School include: Bi-handed robot, humanoid robot, drives and control, sensors, image processing set up, mechanical motion transmission devices, data gloves, lasers, smart materials, haptic devices, embedded systems, virtual instrumentation, modeling and simulation.

4.23 School of VLSI Technology



Founded as a part of the Special Manpower Development Project of the Ministry of Information Technology, the School started functioning in 2006 with a flagship M.Tech Course in VLSI Design. The School aims to integrate the efforts of scientists and engineers working in different fields of Microelectronics and Semiconductor devices, towards design and production of VLSI. Major equipment and instruments procured for the school are Linux Servers, Sun Solaris Servers, Workstations etc.

• Sponsored Programme Organised

 Dr. Tamal Ghosh - International Conference, '5th International Symposium on Devices, Circuits and Systems', Sponsored by IIEST, Shibpur & Hiroshima University, 29-Mar-22, 3 Days

Centre

4.24 Centre for Healthcare Science and Technology (CHST)



This Centre had been established in 2010 with the objectives (a) to provide a platform for interdisciplinary teaching and research in the fields of Health Care Science and Technology leading to a better integrated health care delivery system, (b) to develop highly qualified and innovative professionals in the field of Bio-medical Science and Technology through intensive knowledge and teaching (c) to introduce interdisciplinary master's and doctoral program in Health Care Science and Technology and (d) to collaborate with different medical research institutions and health care institutions.

This Center also offers part time MTech programme in Safety and Occupational Health Engineering as well as inter-disciplinary research. Safety and Occupation Health (SOH) has gained importance due to the dramatic change that has taken place in the work environment where the workforce is exposed to diverse occupational pursuits and hazards. This Centre aims at developing a competent human resource capable of implementing the safety policy for organized and un-organized sectors;

create and strengthen infrastructure for SOH engineering; establish a synergy between the stake holders and carry out research in upcoming fields.

The research activities of this Centre have a diverse hue that include Study of Ergonomics and Physiology in industries; Industrial Health & Hygiene in organized and unorganized sector; Hazard Identification Technique in key industries and Safety Audit and Management.

021-22 Indian Insti	 ng Science and	3/1	

05

Sponsored Research and Industrial Consultancy

5.1 Sponsored Research and Industrial Consultancy Activities

The Research and Consultancy Cell has, of late, matured into the singular channel for diverse externally funded research and industrial consultancy at the Institute. As of now its principal role is to act as a facilitator for R&D activities at the Institute. But, in consonance with the 'make in India' thrust of the Government and in tune with the technology roadmap of the country the Cell is now gearing up to play a greater role to act as the hinge point for multi and interdisciplinary mega research for which the Institute is now well poised.

A tradition of uncompromising quality-concern has put the Institute in good treads and, over the last few years, a good number of government and non-government funding agencies like MNRE, MoE (MHRD), CSIR, DST, DeitY, DAE, DBT, BRNS, DRDO, ISRO, UNICEF, AICTE, UGC, Tata Steel, IBM etc have come forward to sponsor Research Projects. Presently the Institute is putting a purposeful thrust on collaborative research both at national and international level.

In order to enhance the level of intellectual productivity and efficacy, the Institute has established a "Research and Consultancy Cell (RACC)" of which the principal objective is to facilitate - on behalf of the institute, coordination in administration, managerial, liaison, monitoring etc. of sponsored research and consultancy work within the ambit of the administrative framework of the Institute. This allows research workers to devote more time to fruitful research without bothering much on not-too-technical but no-less-important other aspects of the project administration and implementation.

The Institute enjoys a reputation for excellence in research and development. Casting a glance at its academic departments, the Institute can boast of commendable performance of its faculty members, particularly their quality research output which is reflected by a good number of publications in peer-reviewed national and international Journals. A significant number of research projects funded by MHRD, MNRE, Meity, DST, DBT, Digital India Corporation, DST-FIST, Indian Council of Medical Research, UNICEF, Ministry of Earth Science, CSIR, ISRO, DRDO, Ministry of Steel, Ministry of Defense, DAE-BRNS, TATA Steel, Electrosteel Casting Limited (ECL) and international funding agencies like CIDA, USAID, DelPHE, SANEI, UKRI-RCUK etc. bear testimony to the quality of research programmes carried out at the Institute. In the recent past Institute shared its research accomplishments with IISc (ACRC) Bangalore, IBM, TATA Steel, SAIL, Infosys, DRDL, CPRI, TCS, etc.

The number of sponsored projects and the funding have increased steadily. Besides the conventional fields, the Institute in recent years has brought many frontier areas of S&T under the purview of its sponsored research activities. Some of such areas include Advanced Materials, Green Energy and

Sensors, Synthesis of new compounds and catalysis, Computational Chemistry, Robotics, Bio-Mechanics, Power Electronics, VLSI and Embedded Systems, Mechatronics, Earthquake Dynamics, Disaster Management, Environmental Remediation, Healthcare Science and Technology, Computational Biology, Mobile Computing, Nano Science and Technology, Remote-sensing and GIS, Space Technology, Structural Engineering, Communication, Sensor Network, Water Resource and Environment, Transportation Planning, Fluid Mechanics, Carbon Sequestration, Atomic and Nuclear Physics, Soft Computing, Image processing, Mine Safety, Housing and Human Settlement Planning, Electrochemistry, Sedimentology, Environmental Economics, Mathematical & Statistical Theory of Life Testing and Reliability, Rural Technology etc.

Casting a glance at its academic departments, the Institute can boast of commendable performance of its faculty members and research scholars, particularly their quality research output which is reflected by a good number of publications in peer-reviewed national and international journals. Institute shares its research accomplishments with other institutes, research organizations and industry.

Major augmentation in infrastructure for facilitating academic, research and administrative activities in the Institute has been undertaken. A total no. of about 328 research projects worth more than Rs. 152 Cr. and about 695 consultancy projects amounting to about Rs. 73 Cr. sanctioned to the Institute during the period of 2011–2022.

5.2 Research Account Statement for the Last Two Financial Years

Table 5.1: Estimates in terms of Funds Received:

SI.	Financial Year	Amount Received from Different Funding Agencies (Rs.)		Fund (in Rs.) Transferred to Institute Overhead From		Expenditure (Rs.)		
		R&D Project	Consultancy	Testing Fees	R&D Project	Consultancy	Manpower	Equipment
1	2021-22	5,02,69,995 For 59 projects	6,41,78,752 For 104 consultancy works	43,500 For 02 testing	41,61,964	1,61,70,468	2,27,73,923 Total 68 project personnel engaged	6,33,34,716
2	2020-21	5,45,02,159 For 44 projects	7,42,43,486 For 99 consultancy works	NIL	32,77,013	1,54,66,230	2,01,51,967 Total 68 project personnel engaged	1,62,93,734

Table 5.2: Estimates in terms of actual number of projects (R&D and Consultancy) executed and total available funds:

SI.	Financial Year	Total number of R&D and Consultancy Projects executed	Total Fund available for execution of the research and consultancy work (Rs.) [Unutilized fund — Financial Statement (Audit Report) for the Year 2021-22]
1	2021-22	346	30,70,65,101
2	2020-21	319	33,43,88,651

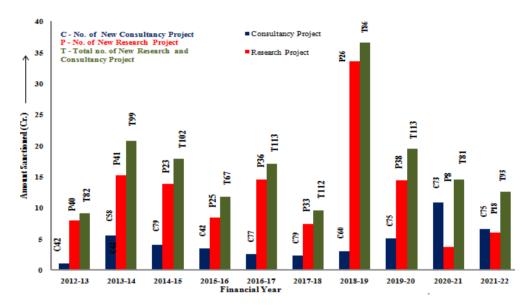


Fig. 1: No. of new sponsored research and consultancy projects sanctioned during the FY 2012-13 to FY 2021-22

5.3 Highlights of Ongoing Sponsored Research Activities

- Ministry of Electronics and Information Technology (MeitY), GoI has sanctioned 3 projects to Electrical Engineering Department under NaMPET-III scheme.
- The DST-IIEST Solar PV Hub centre was formally inaugurated by Shri Ramesh Pokhriyal "Nishank", Hon'ble Education Minister, Government of India on 27th October, 2020.
- 2020 IBM Global University Program Academic Award has been received by the Electronics and Telecommunication Engineering Department.
- Ministry of Education sponsored seven SPARC Projects are ongoing in the present tenure to
 facilitate global research network, improve research eco-system and academic standard. In
 connection with the SPARC projects, experts from Hiroshima University, Duke University,
 University of Illinois, Urbana Champagne and Purdue University have visited this institute for
 academic and collaborative research activities.

- MoE and DST, GoI (through Technology development initiative) supported impacting research innovation and technology (IMPRINT-2) project involving Tata Steel as the participating collaborating industry, are currently undergoing in the Metallurgy and Materials Engineering Department.
- Tata Steel has sanctioned o2 projects in the area of development of advanced high strength steel to the Metallurgy and Materials Engineering Department which are ongoing in the current tenure.
- The Ministry of AYUSH, Govt. of India through the Central Council of Research in Homeopathy (CCRH) has sanctioned the establishment of Dr. Bholanath Chakroborty Fundamental Research Laboratory on Homeopathy. The laboratory will be equipped with several high-end equipments and will act as a coordinating centre for scientific researchers working in evaluation of medicines belonging to this AYUSH system.
- A collaborative research hub being executed by a research consortium led by New Castle
 University, UK with financial support from Research Council UK (RCUK) under the Global
 Challenges Research Fund to address the challenges of delta regions of Ganges-BrahamaputraMeghna.
- School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS, formerly, Centre for Excellence for Green Energy and Sensors System, SAMGESS) has been recognized by Ministry of New Renewable Energy (MNRE) and also by DST Solar Hub with an objective to perform research and development on large scale silicon solar photovoltaic cells, modules and systems including design, fabrication and characterization using novel materials and methods for which financial support has been sanctioned by DST (GoI) in the FY 2018-19. Several instrumental facilities have already been installed in the school.

Table 5.3: New Externally Funded Projects Initiated in 2021-22

SI.	Department	Funding Agency	Amount Sanctioned (Rs. In Lakhs)
1	Aerospace Engineering & Applied Mechanics	DST, Gol	112.4000
2		DRDO, Gol	26.4700
3		SERB-DST, Gol	36.11690
4		DRDO, Gol	1.06000
5		SERB-DST, Gol	45.56816
6		SERB-DST, Gol	6.05000
7		CSIR-NAL	33.9427

SI.	Department	Funding Agency	Amount Sanctioned (Rs. In Lakhs)
8	Architecture, Town & Regional Planning	National Institute of Urban Affairs, Gol	1.0000
9	School of Advanced Materials, Green	DST, Gol	16.66
10	Energy and Sensor Systems (SAMGESS)	DST, Gol	143.3347
11		SERB-DST, Gol	45.79696
12	Chemistry	CSIR, Gol	23.9336
13		DST, Gol	28.49703
14	Civil Engineering	SERB-DST, Gol	14.7081
15		DST-WB	13.0000
16	Computer Science & Technology	DST, Gol	25.9308
17	Electronics & Telecomm. Engineering	DBT, Gol	24.12696
18	Physics	UGC-DAE CSR (CRS)	2.2812
		Total	600.871

Table 5.4: Completed Projects in 2021-22

SI.	Department	Name of the Principal Investigator	Funding Agency
1	Architecture, Town & Regional Planning	Souvanic Roy	DST
2	SAMGESS	Chandan Banerjee	DST-WOS-A
3	Computer Science & Technology	Surajeet Ghosh	DBT
4	SAMGESS	Nilratan Bandyopadhyay	SDF-TATA
5	SAMGESS	Hiranmay Saha	BHEL
6	Electronics & Tele-communication Engineering	Chirashree Roy Chaudhuri	ICMR
7	Computer Science & Technology	Abhik Mukherjee	ICSSR-IMPRESS
8	Chemistry	Jayanta Nanda	DST
9	Chemistry	Sasanka Dalapati	DST
10	Mining Engineering	Prabir Kr. Paul	SERB-DST
11	Chemistry	Debabani Ganguly	DBT
12	SAMGESS	Nilratan Bandyopadhyay	DRDO
13	SAMGESS	Hiranmay Saha	DST
14	Civil Engineering	Ambarish Ghosh	NJB-IJSG
15	Centre for Healthcare Science & Technology	Ananya Barui	ICMR
16	Information Technology	Sukanta Das	SERB-DST
17	VLSI	Hafijur Rahaman	DEITY-MCIT
18	Civil Engineering	Champakali Das	DST-WOS-A
19	Metallurgy & Materials Engineering	Amitava Basu Mallick	SERB-DST

Table 5.5: Details of All Projects in 2021-22

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
1	2021- 2022	SAMGESS	Santanu Maity	Development of artireflective and self-cleaning coatings on solar cover glass with enhanced power output for silicon based solar panels and devices.	DST, Gol	3 years	16.66000	30.08.2024
2	2021- 2022	SAMGESS	Konika Das (Bhattacharya)	Going Remote - Solar Energy for Lighting and Hygienic Sanitation with Smart Exhaust System for Rural Applications	DST, Gol	3 years	143.33470	21.10.2024
3	2021- 2022	AE&AM	Joydeep Bhowmik	Experimental studies to assess the effect of wing flexibility on the aerodynamic performance of Flapping Flight	DRDO, Gol	2 years	26.47000	16.08.2023
4	2021- 2022	ETC	Debasis Mitra	Al based Detection of Acute Respiratory Distrees Syndrome (Al-DARDS): An artificial intelligence aided non-contact framework for detecting acute respiratory distress syndrome using microwave sensors	DBT, Gol	3 years	24.12696	27.10.2024
5	2021- 2022	AE&AM	Joydeep Bhowmik	Development of a novel Unmanned Aerial Aquatic Vehicle (UAAV) with advanced retractable wing and dual propulsion system	SERB- DST, Gol	3 years	36.11690	06.09.2024
6	2021- 2022	Chem.	Mrinal K. Bera	Electrochemistry in organic synthesis: An incredible tool for environmentally benign synthesis of valuable carbocyclic and heterocyclic compounds.	SERB- DST, Gol	3 years	45.79696	28.12.2024
7	2021- 2022	Civil Engg.	Debojyoti Pandit	Development of a numerical method to predict loading history from a given shape of a one-dimensional structure	SERB- DST, Gol	3 years	14.70810	30.12.2023
8	2021- 2022	Chem.	Nanda Dulal Paul	Design and Synthesis of new cheap and earth abundant transition metal catalysts and development of new catalytic methodologies for the dehydrogenative functionalization of alcohols.	CSIR	3 years	23.93360	09.02.2025
9	2021- 2022	Chem.	Chinmoy Bhattacharya	Modulation of scheelite InVO4, CaWO4 semiconductor - employing carbon-supported materials (graphene, g-C3N4, C-dots) as electron flow mediator and electrocatalysts for photoelectrochemical H2-O2 production direct splitting of water.	DST, Gol	3 years	28.49703	07.10.2024
10	2021- 2022	AE&AM	Pritam Kumar	Synthesis, Prilling and Coating of Ammonium Dinitramide (ADN): A promising oxidizer	DRDO, Gol	3 years	1.06000	18.01.2025
11	2021- 2022	CST	Abhik Mukherjee	Development of compact and efficient grid tied solar powered inverter (SPI) systems	DST, Gol	3 years	25.93080	02.09.2024

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
12	2021- 2022	Civil Engg.	Sujit Kumar Dalui	Interference effects on irregular plan shape tall buildings under wind excitation	DST-WB	3 years	13.00000	20.03.2025
13	2021- 2022	AE&AM	Pratim Kumar	Thermal decomposition and combustion studies of prilled and coated ammonium nitrate (AN) and potassium dinitramide (KDN) based novel green oxidizers and propellants for future space and defense applications	SERB- DST, Gol	3 years	45.56816	03.03.2025
14	2021- 2022	Physics	Manish Pal Chowdhury	Chemiresistive-magnetic hybrid gas sensor for NH3 gas detection	UGC- DAE CSR (CRS)	3 years	2.28120	30.03.2025
15	2021- 2022	AE&AM	Amit Roy Chowdhury	Antibiofilm peptide- functionalized titanium implants	SERB- DST, Gol	3 years	6.05000	09.03.2025
16	2021- 2022	AE&AM	Prince Raj Lawrence Raj	Three-Dimensional Ice Accretion Estimation of SARAS MK II Aircraft Under various flying and cloud conditions (Simulation Studies)	CSIR- NAL	11 month S	33.94270	23.10.2022
17	2021- 2022	Arch. T&RP	Souvanic Roy	Documentation of the infrastructure projects implemented under the Smart City Mission of India	National Institute of Urban Affairs, Gol	36 days	1.00000	31.03.2022
18	2020- 2021	AE&AM	Subhabrata Koley	Micromechanics based intra and inter-laminar damage models with emphasis on spatial randomness boundary layer and interface.	DST, Gol	5 years	112.40000	03.08.2025
19	2020- 2021	AE&AM	Joydeep Bhowmik	Design and development of Catapult launch-able Mini fixed wing UAV for defense applications.	DRDO	2 years	49.74600	30.07.2022
20	2020- 2021	Chem.	Ujjal Bhattacharjee	Investigation of two-photon absorption in nanoparticles with delayed fluorescence for nanoscale temperature measurement in biologically relevant samples	SERB- DST	2 years	29.79990	28.12.2022
21	2020- 2021	Chem.	Laksmikanta Adak	Dual transition metal catalysis for C-C and C-heteroatom bond forming reactions: Sustainable approaches to the synthesis of biologically relevant heterocycles	SERB- DST	2 years	24.75000	12.01.2023
22	2020- 2021	Elec. Engg.	Mainak Sengupta	Design and development of magnetic core power inductor (HF-Mag)	MEITY	33 month s	49.24000	27.02.2023
23	2020- 2021	Elec. Engg.	Mainak Sengupta	Design and development of WBG device based high current converters for industry applications	MEITY	36 month s	116.98000	27.05.2023
24	2020- 2021	Elec. Engg.	Mainak Sengupta	MEMS for electric machines and drives (MEMS Machines)	MEITY	36 month s	42.09000	27.05.2023

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
25	2020- 2021	ETCE	Ankita Pramanik	Underground mine monitoring system	IBM	36 month s	19.74627	28.02.2024
26	2020- 2021	School of VLSI Technology	Sarit Chakraborty	Design optimization of Micro- Electrode-Dot - Array based Digital Microfluidic Biochips (MEDA-DMFBs) for Cyberphysical Systems	SERB- TARE	36 month s	10.05000	13.12.2023
27	2019- 2020	CHST	Howa Begam	Development of injectable bone substitute using biphasic calcium phosphate/ biopolymer composite loaded with platelet rich plasma for bone defect	ICMR	3 years	3.14560	06.10.2023
28	2019- 2020	Mining	Netai Chandra Dey	Capacity building for testing and developing software-based fatigue sustainable workload model to monitor and control fatigure sustainablity for Indian underground coal miners-an ergo-experimental approach	SERB- DST	3 years	32.71181	25.02.2023
29	2019- 2020	IT	Prasun Ghosal	Exploring the feasibility of search space minimization in drug designing system using mRNA-Ribosome mathematical modeling and simulation	DST	3 Years	6.6000	08.03.2023
30	2019- 2020	Chemistry	Laksmikanta Adak	Synthesis of iron complexes and their catalytic role in 1.4- addition reactions of organoboron reagents to alpho.beta-unsaturated carbonyl and related compounds	DST- WB(STB)	3 Years	6.3000	02.03.2023
31	2019- 2020	Chemistry	Nanda Dulal Paul	Sustainable and economically affordable synthetic approaches towards bioligically and medicinally active molecules.	DST- WB(STB)	3 Years	3.3000	10.03.2023
32	2019- 2020	Math	Ujjal Debnath	Stability analysis of various dark energy models in the Universe	DST	3 Years	6.6000	18.02.2023
33	2019- 2020	CST	Nirmay Ghosh	SecIoT: An integrated framework for comprehensive security and forensic analysis of IoT-based sment home and healthcare devices and wearables.	DST	2 Years	16.6606	16.02.2022
34	2019- 2020	Civil	Chanchal Majumder	Arsenic-organic interaction: Removal by functional carbon nanocomposite and optimization of the process parameters.	DST- WB(STB)	3 Years	14.4600	
35	2019- 2020	Civil	Pritam Saha	Development of operational strategies for e-rickshaws for improving air quality on roads	DST- WB(STB)	3 Years	11.9580	
36	2019- 2020	ETC	Ankita Pramanik	Development of UV and IoT based sensor for online water quality monitoring	DST- WB(STB)	3 Years	14.9580	
37	2019- 2020	Chemistry	Nanda Dulal Paul	Exploring Homogenous catalysis using transition metal complexes of redox noninnocent ligands	DST	3 Years	32.5970	05.02.2023

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
38	2019- 2020	Mining	Pratik Dutta	Development of a geomechanical model for cyclic CO2 injection and methane release through experimental studies of matrix shrinkage/swelling, mechanical properties, and permeability of coals.	DST	3 Years	49.1089	17.12.2022
39	2019- 2020	Chemistry	Jhuma Ganguly	New Generation Multifunctional Green Nanocomposite Coatings for the control of Biodeterioration of Cultural Heritage	DST	36 Month s	30.9229	17.11.2022
40	2019- 2020	Metallurgy	Manojit Ghosh	Development of advanced ultrafine grained aluminium alloys for aircraft and aerospace applications through Severe Plastic Deformation: Correlating microstructure, mechanical properties and crystallographic texture	Sparc - MHRD	2 Years	39.9563	24.06.2021
41	2019- 2020	SEIHSM	Souvanic Roy	GCRF Living Deltas Hub	UKRI- RCUK	5 Years	201.0126	12.02.2024
42	2019- 2020	Metallurgy	Arunansu Haldar/ Swarup kumar Ghosh	Pilot scale development of abrasion resistance (400 BHN hardness) and advanced high strength steel (1000 MPa) with superior ductility through HSM	TATA STEEL	2 Years	49.5305	22.01.2022
43	2019- 2020	Metallurgy	Arunansu Haldar/ Swarup kumar Ghosh	Design of novel high strength formable steel through HSM	TATA STEEL	2 Years	49.5305	06.02.2022
44	2019- 2020	CST	Susanta Chakraborty	Design Optimization and Security Prediction of Real Time Cyberphysical Digital Microfluidic Biochips	Sparc - MHRD	2 Years	47.5093	10.06.2021
45	2019- 2020	AE&AM	Amit Roy Chowdhury	Functional Optimization and Development of Polymer- Carbon Nanocomposites for Customized Bone Grafting	DST	3 Years	83.6986	27.10.2022
46	2019- 2020	Civil	Anirban Gupta	Fist Program - 2018 [TPN - 20199]	DST	5 Years	148.0000	19.09.2024
47	2019- 2020	Chemistry	Sudip Kumar Chattopadhyay	Development and Application of Cost-Effective AB Intio Methods for Strongly Correlated Electrons: A Challenge for Electronic Structure Theory	CSIR	36 Month s	10.0170	31.08.2022
48	2019- 2020	ΙΤ	Ruchira Naskar	Digital Image Forensics in the Context of a Connected India: Algorithms and Implementation	DST	3 Years	15.1210	11.09.2022
49	2019- 2020	Math	Tapan Kumar Kar	Sustainable use of Ecosystem Services under Global Environmental Change: Developing Coupled Social and Ecological Dynamics	CSIR	36 Month s	16.8630	31.07.2022

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
50	2019- 2020	Earth Science	Moumita Talukdar	Evolutionary History and Origin of the BIF-mafic- ultramafic-anorthosite Packets of Moyar-Bhawani- Cauvery Shear Zone (MBCSZ) from Granulite Terraane of Southern India (GTSI) with a new insight on the calculation of UV Visible Spectroscopy	DST- Inspire	5 Years	35.0000	02.04.2022
51	2019- 2020	Electrical	Anindita Ganguly (PI) & Aparajita Sengupta (Mentor)	Stochastic Pacing Therapy for Cardiac Fibrillation Prevention	DST	3 Years	10.0500	04.12.2021
52	2019- 2020	Chemistry	Debabani Ganguly	Part1 and Sgg: un-tango-ling microtubule regulation	DBT	3 Years	1.5000	24.06.2022
53	2019- 2020	Civil	Anirban Gupta	Low carbon option for wastewater treatment and reuse - A case study in the East Kolkata Wetlands	WBPCB	2 Years	10.0016	30.06.2021
54	2019- 2020	Civil	Anirban Gupta	Determination of volume flow of sewage at point and non- point sources of the East Kolkata Wetlands, the water quality and hydrological parameters at various points	WBPCB	2 Years	10.1140	30.06.2021
55	2019- 2020	ІТ	Hafizur Rahaman	Development of high efficiency power electric converter technology using next generation Si/SiC-based switching devices with integrated gate drivers for high frequency operation at reduced losses	Sparc - MHRD	2 Years	90.1423	14.03.2021
56	2019- 2020	IΤ	Hafizur Rahaman	Device, Circuits and Architectures for implementing Stochastic Spin Logic for Energy Efficient Boolean and Non-Boolean Computing	Sparc - MHRD	2 Years	89.1485	29.04.2021
57	2019- 2020	Electrical	Debabrata Roy	Applications of Magnetostriction in Energy Harvesting	DST	3 Years	58.1359	26.05.2022
58	2019- 2020	Chemistry	Jhuma Ganguly	Development of Benign Microgel Templates for the Control of Deterioration Metal and Oxide Nanoparticles	DST- WB(STB)	3 Years	6.2500	30.01.2022
59	2019- 2020	IT	Hafizur Rahaman	Design-for-Test Solution for 3D Integrated circuits	Sparc - MHRD	2 Years	89.3423	14.03.2021
60	2019- 2020	CST	Abhik Mukherjee	Summarizing Content Streams on Online Social Media during Emergency Events	ICSSR- MHRD	2 Years	13.6500	31.03.2021
61	2019- 2020	IT	Sukanta Das	Exploring Cellular Automata Model for Hardware Security	Sparc - MHRD	2 Years	59.1548	29.04.2021
62	2019- 2020	IT	Sukanta Das	Primitive Polynomials and Cellular Automata	DST	3 Years	6.6000	15.05.2022
63	2018- 2019	Metallurgy	Debdulal Das	Microstructure quantification and structure-property correlation of dual-phase steels (TCS Research Scholar Program - Cycle 14)	TCS Foundati on	30.06.2 020 (Exten dable till	7.7200	Jun-22

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
						June 2022)		
64	2018- 2019	Electrical	Mainak Sengupta	Development of motor ecentricity and vibration monitoring systems and control strategies for switched reluctance motor-based drives	Sparc - MHRD	2 Years	97.2352	14.03.2021
65	2018- 2019	Chemistry	Sangeeta Ghosh (Mentor - Chinmoy Bhattacharya)	Development of composite films for applications in PEC H2O splitting and removal of dyes from water	DST	3 Years	21.7900	23.01.2022
66	2018- 2019	Metallurgy	Arunanshu Haldar	Design and development of new generation advanced high strength steels with enganced strength, ductility and application properties by controlling the amount and stability of retained austenite	SERB	3 Years	114.8983	10.03.2022
67	2018- 2019	Physics	Abhijit Majumdar	Synthesis and Characterization of Piezoelectric & Photoactive Nanocomposite and their application in Root Canal Disinfection	Science & Technolo gy and Biotechn ology (GOWB)	3 Years	16.5500	31.05.2022
68	2018- 2019	CST	Surajeet Ghosh	Development Design and Implementation of a Comparison-Free Scalable High-Throughput Energy Efficient Hardware Sorting Engine for FPGA-Based Embedded System Applications	Science & Technolo gy and Biotechn ology (GOWB)	3 Years	9.3080	25.02.2022
69	2018- 2019	CHST	Ananya Barui	Developing Functional Skin Construct with Embedded Pericytes: Potential for Vasculaeization	Dept. of Biotechn ology, Govt. of India	3 Years	65.9520	12.12.2021
70	2018- 2019	SAMGESS	Nillohit Mukherjee	Flexible polymer nanocomposite films for energy generation and microwave shielding applications	SERB	3 Years	46.5460	23.09.2021
71	2018- 2019	Physics	Dipali Banerjee	Synthesis and characterization of composites of polypyrrole (Ppy)with carbon nanotube (CNT) and graphene for thermoelectric	SERB	3 Years	33.7136	31.10.2021
72	2018- 2019	Civil	Ambarish Ghosh	Prediction of construction induced vibration and development of mitigation strategy	Dept. of Higher Education, Science & Technolog y and Bio- Technolog y (Govt. of W.B.)	3 Years	15.7600	07.10.2021
73	2018- 2019	IT	Sukanta Das	Computational Problems & Cellular Automata	SERB	3 Years	5.4529	03.10.2021

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
74	2018- 2019	ETC	Chirasree Roy Chaudhuri	Young Faculty Research Fellowship of Visvesvaraya Ph.D. Programme	Digital India Corporatio n, A Section 8 Company of Ministry of Electronics and Informatio n Technolog y, Govt. of India	5 Years	7.4000	23.01.2023
75	2018- 2019	Physics	HOD	DST-FIST Programme - 2016	DST-FIST	5 Years	115.0000	03.04.2022
76	2018- 2019	SAMGESS	Anirban Bagui	Performance Optimization Organic Solar Cells	DST- Inspire	5 Years	86.2743	21.08.2022
77	2018- 2019	CHST	Aritri Ghosh (Ananya Barui)	Mitochondrial Dynamics in Oral Cancer: Assessing Functional Link with Appoptosis EMT and Metabolic Dysfunctions through Integrated Spectroscopic and Biochemical Studies	Indian Council of Medical Research	3 Years	2.2840	22.04.2021
78	2018- 2019	CHST	Ananya Barui	Regulation of Lineage Specific Differentiation of Mesenchymal Stem cells under Biomatrices with Varied Elastic Properties	Indian Council of Medical Research	3 Years	20.0040	31.07.2021
79	2018- 2019	SAMGESS	Nillohit Mukherjee	Nanostructured Materials and Interfaces for Enzymeless Electrochemical Sensing of Serotonin and Dopamine	Dept. of Higher Education, Science & Technolog y and Bio- Technolog y (Govt. of W.B.)	3 Years	11.6775	11.06.2021
80	2018- 2019	Civil	Soumya Bhattacharjya	Robust optimum design of structures under extreme loading considering parameter uncertainty	CSIR	3 Years	8.2845	08.07.2021
81	2018- 2019	SAMGESS	Partha Chaudhri	DST Solar PV Hub Pase - II	DST	5 Years	2621.4340	26.06.2023
82	2018- 2019	CHST	Amit Roy Chowdhury	Design and Manufacturing of Patient Specific Dental Implants Composed of Porous Titanium Functionalized with Osseointegration - Promoting and Antibacterial Coatings	SERB	3 Years	29.5320	20.06.2021
83	2018- 2019	ΙΤ	Indrajit Banerjee	Wireless sensor network- based safety measures to curb drowing and accidents water bodies	DST-WB	3 Years	15.8600	31.05.2021
84	2018- 2019	Mining	Prabir Kumar Paul	Identification of Above Ground Vegetation Biomass in the Kalimpong subdivision of West Bengal	SERB	3 Years	34.1764	23.05.2021

SI. No.	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Dura- tion	Total Amount Sanctioned (Rs. in lakh)	Probable Date of Completion
85	2018- 2019	Chemistry	Ajit Kumar Mahapatra	Near-Infrared Chemodosimetric (Nircd) Luminescent Chemosensor for Detecting Toxic lons in Environmental Samples and Biomaging Applications	CSIR	3 Years	11.8017	31.05.2021
86	2017- 2018	CHST	Chitrangada Das Mukhopadhyay	Induction of local hyperthemia to treat brain cancer using electromagnetic	DST-WB	3 Years	15.7600	07.02.2021
87	2017- 2018	Chemistry	Arik Kar	Core@shell semiconductor nanomaterials for the photocatalytic continuous flow treatment of xanthene dyes	The Royal Society, Independe nt Scientific Academy of the UK	5 Years	26.9439	05.10.2022
88	2017- 2018	SAMGESS	Hiranmay Saha	UK India Clean Energy Research Institute (UKICERI)	DST	4 Years	138.1400	23.05.2021
89	2017- 2018	Chemistry	Chinmoy Bhattacharya	Modifications of Aurivillius Type Semiconducting Photocatalysts through Incorporation of Dopants and Cocatalysts for Improvement of Photoelectrochemical water Oxidations Behaviour	CSIR	3 Years	9.0000	30.04.2020
90	2017- 2018	CHST	Ananya Barui, Chirasree Roychaudhuri & Ashoke Sutradhar	Bholanath Chakraborty Laboratory for Fundamental Research in Homeopathy	Central Council for Research in Homeopat hy (CCRH), Ministry of Ayush, Govt. of India	5 Years	30.0000	03.04.2022

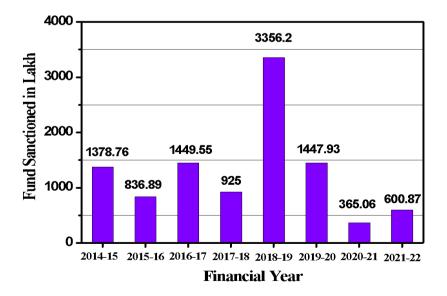


Fig.2: Year wise Sanctioned Project amounts

5.4 Major Consultancy Projects

Important funding agencies like Coal India Limited, Western Coalfields Limited, Eastern Coalfields Limited, Kolkata Municipal Corporation, West Bengal Medical Services Corporation Limited, P.W.DTE, Govt. of West Bengal, Haldia Development Authority, IIT Kharagpur, Larsen & Toubro Limited, ITD Cementation India Ltd., Kolkata Port Trust, Rail Vikas Nigam Limited, Kolkata Metro Rail Corporation Limited, Hooghly River Bridge Commissioners, Second Vivekananda Bridge, VisvaBharati University, Mackintosh Burn Limited, Kolkata Metropolitan Development Authority, Gorkhaland Territorial Administration, Bridge and Roof Co. (India) Ltd., Singareni Collieries Company Limited (SCCL), Hindalco Industries Ltd., PDCL etc are providing significant consultancy activities.

In 2021-22, total 18 new sponsored research projects were sanctioned with an amount of Rs. 6.01 Cr. from different agencies. In 2021-22, total 75 new consultancy works were sanctioned with an amount of Rs. 6.59 Cr. from different agencies. The following tables and diagrams describe the details of new externally funded projects started during the year, ongoing projects, and completed projects, particulars of new consultancy work sanctioned and carried out during year 2021-22.

Table 5.6: List of New Consultancy Projects Sanctioned in 2021-22

SI.	Department	Funding Agency	Amount Sanctioned (Rs. In Lakhs)
1	AE & AM	C. Doctor & Company Pvt. Ltd.	4.72000
2	Civil	Bismi Construction	0.94400
3	Civil	Kamrula Construction Co.	0.59000
4	Civil	U C Consultancy	1.18000
5	Civil	Larsen and Toubro Limited	1.77000
6	Civil	Transtonnelstroy-Afcons J.V.	5.31000
7	Civil	Pinnacle KPO Solutions Private Limited	2.95000
8	Civil	Constell Consultants Pvt. Ltd.	1.18000
9	Civil	Creative Museum Designers	3.54000
10	Civil	P.W. DTE	1.65200
11	Civil	P.W. DTE	2.83200
12	Civil	Kadtech Infra Projects Pvt. Ltd.	2.36000
13	Civil	Traders and Engineers Private Ltd.	10.44000
14	Civil	West Bengal Medical Services Corporation Ltd.	7.78800
15	Civil	Shyama Prasad Mukherjee Port	4.42500
16	Civil	Reliable Building Solutions	1.77000

SI.	Department	Funding Agency	Amount Sanctioned (Rs. In Lakhs)
17	Civil	The Freyssinet Prestressed Concrete Company Ltd.	2.36000
18	Civil	WPIL Limited	15.63500
19	Civil	Traders and Engineers Private Ltd.	1.74000
20	Civil	Traders and Engineers Private Ltd.	3.13200
21	Civil	Larsen and Toubro Limited	8.26000
22	Civil	Tractebel GKW GMBH	5.66400
23	Civil	Ion Exchange (India) Limited	3.54000
24	Civil	Ganapati Projects Private Limited	2.71400
25	Civil	Bridge and Roof Co. (India) Ltd.	23.01000
26	Civil	Primarc Projects Private Limited	4.72000
27	Civil	P.W. (Roads) DTE	6.49000
28	Civil	Batiment Industriel Consultancy Services Private Limited	0.59000
29	Civil	S.D. Udyog Technologies	0.59000
30	Civil	INNATE	5.13000
31	Civil	Central Pollution Control Board	8.17740
32	Civil	Kalyani Mahavidyalaya	1.18000
33	Civil	Batiment Industriel Consultancy Services Private Limited	0.59000
34	Civil	Panchdeep Constructions Ltd.	2.36000
35	Civil	McNally-AML(JV)	2.06500
36	Civil	Malda Division PHE Dte.	3.42200
37	Civil	Progressive Construction Company	0.59000
38	Civil	Constell Consultants Pvt. Ltd.	1.77000
39	Civil	National Mission for Clean Ganga	1.77000
40	Civil	C.E.Testing Company Pvt. Ltd.	1.77000
41	Civil	Benfish	4.13000
42	Civil	Sinha & Associates	1.77000
43	Civil	Sinha & Associates	3.54000
44	Civil	GPT Infraprojects Limited	6.49000
45	Civil	West Bengal Medical Services Corporation Ltd.	2.65500
46	Civil	PWD (Roads) Directorate	7.08000
47	Civil	Sandip Foundation	3.24441
48	Electrical	Switching AVO Electro Power Ltd.	0.10000
49	Mining	Gainwell Commosales Private Limited	8.26000
50	Mining	Mahanadi Coalfields Ltd. and 10 other companies	18.40682

SI.	Department	Funding Agency	Amount Sanctioned (Rs. In Lakhs)
51	Mining	Mahanadi Coalfields Ltd. and 6 other companies	14.84558
52	Mining	Hindalco Industries Ltd.	7.08000
53	Mining	Eastern Coalfileds Ltd. and six other companies	53.98854
54	Mining	Eastern Coalfields Ltd.	2.36000
55	Mining	Mahanadi Coalfields Ltd. and 6 other companies	8.85708
56	Mining	Mahanadi Coalfields Ltd. and 5 other companies	11.55928
57	Mining	Eastern Coalfileds Ltd. and one other company	34.22000
58	Mining	Central Coalfileds Ltd. and one other company	6.75432
59	Mining	Central Coalfileds Ltd. and five other companies	25.36410
60	Mining	Eastern Coalfields Ltd. and 9 other companies	8.85000
61	Mining	Central Coalfields Ltd. and 11 other companies	20.87774
62	Mining	Central Coalfields Ltd. and 8 other companies	14.37712
63	Mining	SECL and 19 other companies	36.99536
64	Mining	Jaiprakash Power Ventures Limited	2.95000
65	Mining	The West Bengal Power Development Corporation Limited	0.29500
66	Mining	Western Coalfields Ltd.	11.80000
67	Mining	Sunflag Iron & Steel Co. Ltd.	4.72000
68	Mining	Powerplus Traders Private Limited	33.98400
69	Mining	Western Coalfields Ltd.	11.80000
70	Mining	Bharat Coking Coal Ltd. and 3 other companies	21.71200
71	Mining	Mahanadi Coalfields Ltd., Talcher Coalfields and nine other companies	24.16050
72	Mining	Eastern Coalfields Ltd.	4.72000
73	Mining	Eastern Coalfields Ltd. and 6 other companies	43.12900
74	Mining	Bharat Coking Coal Ltd.	2.95000
75	Mining	Mahanadi Coalfields Ltd. and nine other companies	20.33730
<u> </u>		Total	659.5386

106 Institution's Innovation Council

Annual Report 2021-22 | Indian Institute of Engineering Science and Technology, Shibpur

6.1 About IIC 4.0

The Ministry of Education (MoE and erstwhile MHRD) in the year 2018, through MoE's Innovation

Cell (MIC) had launched the Institution's Innovation Council (IIC) program in collaboration with AICTE

for Higher Education Institutions (HEIs) to encourage the creative energy of the student population

as well as to systematically foster the culture of innovation, start-up and entrepreneurial ecosystem

in educational institutions.

Primarily, the IICs' role is to engage a large number of faculty and staff, and encourage, inspire, and

nurture young students in various innovation and entrepreneurship-related activities such as

ideation, problem-solving, proof of concept development, design thinking, IPR, project handling and

management at pre-incubation/incubation stage so that innovation and entrepreneurship

ecosystem gets established and stabilized in HEIs. The MIC envisioned the creation of a network of

IICs across selected HEIs to stimulate innovation in institutions through multitudinous modes leading

to an innovation boosted eco-system in these campuses. IIEST, Shibpur has been a part of this

program since its inception. Currently, IIC4.0 is in effect and IIC 2.0 secured 4-star rating last-to-last

year, out of a 5-star rating system before a successful tenure of IIC3.o.

One of the milestones of IIC 4.0 is that we successfully organised E'Woke- 22' in offline mode for the

freshers after a long wait of online curriculum due to Covid19 Pandemic. It basically was a day to

learn about Entrepreneurship and Innovation through specially designed-Workshops, Competitions,

Keynote Addresses. IIC 4.0 is enabling few innovators to shape their idea into the form of prototype

and business venture, as well. Institution's Innovation Council (IIC 4.0), IIEST, Shibpur organized a

day webinar on "3D Printing-Technology and Applications" for the students and faculties of IIEST,

Shibpur on March 16, 2022 on the occasion of the Centenary Celebrations of the Department of

Mechanical Engineering. The program was inaugurated by Director, IIEST, Shibpur.

6.2 Key Functionaries

Director - Prof. Parthasarathi Chakrabarti

President - Prof. SubhasisBhaumik

Vice President - Prof. Konika Das (Bhattacharya)

Convener - Dr. Tanmay Pal

111

Coordinators-

Innovation Activity Coordinator - Dr. Joydeep Bhowmik

Startup Activity Coordinator - Dr. Ankita Pramanik

Internship Coordinator – Dr. Bidyut Pal

IPR Coordinator - Dr. Jhuma Ganguly

Social Media Coordinator - Dr. Averi Mukhopadhyay

ARIIA Coordinator - Dr. Pritam Saha

NIRF Coordinator - Dr. Gautam Anand

IP Expert/ Patent Expert - Dr. Mahuya Hom Choudhury

Startup/ Alumni Entrepreneur - Mr. Amitava Banerjee

Expert from nearby Industry/ Industry association/ Ecosystem Enablers - Mr. Asok Barat

Student Members: Ms. Chitralekha Dutta, Mr. Sachindra Rai, Ms.Manisha De, Mr. Ritwik Bhattacharya, Ms. Sumana Dey, Mr. Prajwal Velupula, Mr. Arnav Anand, Ms. Dibyashree Panda, Ms. Jyoti Jaiswal, Mr. Rajdeep Chakraborty, Mr. Metta Bharat Sai, Mr. Pathivada Venkata Siva Ramadasu, Mr. Pramod Surya, Ms. Asmita Das, Mr. Sarvesh Kumar, Mr. Rajnish Kumar Suman, Mr. Anirban Mukherjee, Mr. AyandeepGarain, Mr. Shubham Mishra, Mr. Sayan Mitra, Mr. Awadh Kishore Jaiswal, Ms. Tiyasa Khan, Mr. Rajat Agrawal, Mr. Sarvesh Dubey, Mr. Anuvab Sen, Ms. Kasturi, Mr. Dilshad Adil, Ms. Prayukta Dey, Ms. Amrita Maji, Mr. Hrithik Raj, Mr. Gaurab Mondal, Mr. Ishan Santosh Kumar Dubey, Md. Merlin Maria Roy, Mr. Joybrata Roy, Mr. Subhajit Mondal, Mr. Allan Davis, Ms. Aishwarya Raj, Ms. Moumita Mukherjee, Mr. YerraManisankar, Mr. Rishideo Raj, Ms. Samriddhi Mukhopadhyay, Ms. Disha Trivedi, Mr. Tathagata Ghosh, Mr. Priyanshu Agrawal, Mr. Raushan Singh, Ms. Swarnila Roy, Ms. Shreetama Majumdar, Mr. Akshansh Agarwal, Mr. Manav Sarkar, Ms. SatarupaMahato, Ms. Sushma Vemunuri, Mr. Soma Sai Sathwik, Mr. Prince Kumar, Ms. Purnima Devinani, Ms. UshaiNaskar, Ms. Sneha Mandal, Ms. Alpana Patel, Ms. Deepa Jha.

6.3 Resource Strength (Human Capital and Physical Capital)

Total No. of IIC Members - 73

Total No. of IAs - 11

Incubation Units - 1

IP Facilitation Unit - 1

6.4 Facilities, Infrastructure of Pre-Incubation & Incubation in Promotion of Innovation and Entrepreneurship in the Campus

Tagore Centre for Green Technology Business Incubation (TCGTBI) supported by National Science and Technology Entrepreneurship Development Board (NSTEDB) / Department of Science & Technology, Government of India.

Despite India's phenomenal economic rise and proven dominance in technology-related fields on a global scale, the country has consistently been plagued by disparity in the economic status amongst the people. One can fathom this from the fact that though there are four Indians in the global list of top ten richest people, there is a large population which lives below poverty line. While the brilliance of India's technical professionals has taken the country to the position of a global R & D hub, there is a large pool of semi-skilled and unskilled workforce in various sectors. Therefore, despite the obvious advantages of a young talent pool, there have been constraints while forming development policies. Indian policy makers are faced with the magnanimous task of balancing the aspirations of the skilled and talented with the basic needs of those at the bottom of the pyramid. Today, India has made commendable progress in terms of growth of a scientific and technological culture. It occupies a prominent place in the world map with regards to its contribution towards knowledge driven products and services, its emergence as a global R&D hub, and the quantity and quality of its professionals related to science and technology. In order to sustain this growth in an ever-changing, ever-challenging global business environment, the speedy translation of innovative ideas into products, processes and services for the market is the need of the hour. Solely individual talent, hard work and initiatives would not be able to guarantee such speed in the face of tremendous pressure and demands of global standards. For that, an appropriate enabling ambience and support system need to be built including provision for initial investment and networking opportunities. In India, while there are a good number of individual level of innovations happening, the systems to productize them through commercial ventures are yet to be fully developed. This is aggravated by the absence of linkages of researchers and innovators with the market, and the social milieu that does not accept failure very kindly. In spite of these hurdles the number of innovative start-ups is rising at a phenomenal rate. Having seen this rising level of interest in entrepreneurial and innovative ventures, particularly in technology related fields, the Government of India (GoI) has initiated setting up of Technology Business Incubators (TBIs) to nourish and promote these ventures through incubation. The process is aimed at enabling individual and group level technology ventures to contribute towards wealth creation and new job creation in their regions. TCGTBI is such an initiative of the Government of India.

Infrastructural facilities are offered to the incubate companies on an individual basis, along with a set of shared/common infrastructure mentioned under:

• Office space: Company specific

• Internet connection

Apart from company specific infrastructure as stated above, TCGTBI provide following facilities to all incubatee companies on shared basis: a) Photocopier b) Scanner c) shredder d) Teleconferencing facilities as available. The usage of this facility will be paid by incubates as per the rate fixed by TCGTBI, time to time. e) Meeting/Conference room with projection equipment f) TCGTBI Library facilities g) Pantry facilities h) Common secretarial pool/staff (depending on availability of such staff).

Besides, TCGTBI will facilitate the incubate companies to access departmental laboratories and other resources of IIEST, Shibpur or at its Partner Institute for their specific requirements. Total plinth area available: 5,000 sqft Including Mezzanine area of 450 sqft for AC Conference Hall 22 AC modular cabinets of carpet area 44 sqft each Common space of 3,245 sqft includes: AC Conference Hall, Reprographic facilities, TCGTBI Office, TCGTBI Library, Pantry Dining Area, Visitors Lobby, Passage, other amenities.

6.5 Achievements

- Number and Different types of I&E and IPR activities Conducted: 32
- No. of student's & faculty ideas generated: o6
- No. of student's & faculty Innovation/prototypes developed: 05
- No. of Technology/Invention Transfer: 1
- No. of Student & Faculty Start-ups/Ventures established
 - Under processing o
 - Completed- o

Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus + Amount grant or fund supported to student and faculty lead innovations, start-ups and IPR is Rs.2,70,000.00

6.6 Highlight of few best IIC Faculty/Student Members and Their Achievements/ Rewarded for the Innovations at Different Forum

Bentleys'

List of teams by IIESTS' students selected for top 20 projects all over the world in Bentley's Become the First Future Infrastructure Star competition:

- 1. Team Paru i) Prakash Kumar, 4th year B. Tech., Metallurgy and Materials Engineering, ii) Arunima Mudi, 4th year, B. Tech., Computer Science and Technology
- 2. Team BEings i) Avishek Das, 4th year, B. Tech., Civil Engineering, ii) Rohit Koiri, 5th year, B. Arch.
- 3. Team Experimenters i) Rahul Kumar Prajapati, 4th year, B. Tech., Civil Engineering, ii) Purushotam Kumar Mehta, 4th year, B. Tech., Civil Engineering

IIT Patna Build O' Innovate Challenge

Association of Civil Engineers of IIT Patna in collaboration with District Administration, Bhojpur, Bihar organised an Ideation Challenge in which Team- THE COGNITIVE BEINGS of IIEST, Shibpur secured 2nd position in the Smart Traffic Problem Statement.

Reliance Foundation Scholarship 2021-22

Soumen Purkait of MTech Control System and Instrumentation Specialisation won the Reliance Foundation Scholarship for the academic year 2021-22 in recognition of his academic achievements and demonstration of leadership with a vision to build next-generation technology solutions for India.

SRISTI-GYTI Appreciation Award 2021

- 1) Abhranila Das, ETC M.Tech, 2020 Batch, has received SRISTI-GYTI Appreciation Award 2021. The Project titled 'An Indigenous Low-cost Smartphone Interfaced Handheld Potentiostat' has been selected for SRISTI GYTI Appreciation 2021.
- 2) Bhaswati Chakraborty, ETC, Ph.D research scholar has received SRISTI-GYTI Appreciation Award 2021. Her Project titled 'An Affordable, Sensitive and Portable Electric Field Mediated Device Towards Label-free, Point of Care Disease Diagnostics' has been selected for SRISTI GYTI Appreciation 2021.

National Civil/Structural Engineering Students Award Competition, 2021

Team Beings (Eo1) consisting of AVISHEK DAS (Civil Engg. 4th year), SWAPNIL BASU (Civil Engg.

4th year), KOLUGURI VARENYA (Civil Engg. 3rd Year), SOMRAJ SEN (Civil Engg. 4th year) secured

first position all over India in this competition conducted by Institute of Steel Development and

Growth (INSDAG). Theme: Iconic Steel Roof Structure Over an Open-Air Theatre and Stage Guiding

Faculty: Dr. Sujit Kumar Dalui, Asst. Professor, Department of Civil Engineering.

Smart India Hackathon (Ideas Generated):

1) Teen Sau Das- Tracing IP address and details of unidentified participants while academic

sessions. Domain-Blockchain and Cybersecurity

2) Shibpur Wizards- Promoting Fitness through Gamification. Theme Name- Fitness and Sports.

3) Development of a happiness index for schools (including mental health and well-being

parameters, among others) with self-assessment facilities. Team Name- VORTEX. Theme

Name- Agriculture, Food Tech and Rural Development.

4) Problem Statement- App-Based Solution to provide market access to micro and small

enterprises. Team Name- VORTEX. Theme Name- Clean and Green Technology.

Women of Mettle Winner Season 5

IIEST Shibpur compliments and takes pride in congratulating one if the talented student of 3rd Year

Electrical Engineering Department, Miss Aishwarya Raj for emerging as a WINNER of 'Women of

Mettle – Season 5', a pioneership scholarship programme conducted by Tata Steel to induct women

in manufacturing sector through a rigorous selection process involving more than 950 young female

students from country's premier engineering institutes. She will be rewarded with the scholarship

and invitation to join Tata Steel as technical intern and subsequently receive a pre placement offer

(PPO).

PoC Hackathon Competition:

Winning teams are:

Name of the Team: The emotional electrons

Year/Department: Research Scholars, IIEST, Shibpur

Name of the Members: Avik Kumar Das (ETC), Ardhendu Sarkar (CST), Priyajit Biswas (IT),

Sourav Bhattacharyya (IT)

Title: IOT based Real Time Home Safety and Caring System (RTHSCS)

116

Annual Report 2021-22 | Indian Institute of Engineering Science and Technology, Shibpur

Name of the Team: Morph

College Name: National Institute of Technology Durgapur

Name of the Members: Aniket Verma, Devansh Goyal, Subham Gupta, Ashishkumar M. Jha,

Yash Maroo

Title: Innovative software solution for Parking problems in Metro cities;

Name of the Team: SAAS

College Name: UG Students, IIEST, Shibpur

Name of the Members: Sachindra Rai, Amritanshu Prasad, Awadh Kishore Jaiswal, Swapnil

Basu

Title: Technology based solution to connect the Agencies and the Donors for donating Old Clothes /Old Books

- Number and Different types of I&E and IPR activities Conducted: 5 plus (by Dr. Bidyut Pal) 3D
 Printing Webinar, Industry-Academia Meet, event at an external institute (JGEC) promoting innovation, and more than 2 mentor clinics to discuss innovation and entrepreneurship)
- No. of student's & faculty ideas generated: 1 (Ms. Kanchan Bharti, 4th year ME, plan developed for a start-up called 'renAbode' in the near future)
- No. of student's & faculty Innovation/prototypes developed: 1 (Mr. Joybrata Dhar, 3rd year ME,
 idea generated and 1st prototype developed for a portable utensil cleaner)

6.7 Highlights of Selected Best Innovations & Images with Mention of Inventor/Innovation Name

Bhaswati Chakraborty, ETC, Ph.D research scholar has received SRISTI-GYTI Appreciation Award 2021

SRISTI- GYTI (Gandhian Young Technological Innovations) national awards are for innovative student projects in engineering, pharmacy, science and other applied technologies. These awards are given in Festival of Innovation (FOIN), organised by the President's Secretariat and is assisted by the National Innovation Foundation (NIF), an autonomous institution under the Department of Science and Technology, Government of India.



Supervisor: Dr. Chirasree Roy Chaudhuri

"Project titled 'An Affordable, Sensitive and Portable Electric Field Mediated Device Towards Label-free, Point of Care Disease Diagnostics' has been selected for SRISTI GYTI Appreciation 2021"

ALL INDIA WINNER OF TATA STEEL 'WOMEN OF METTLE' SEASON-5

Congratulations to Ms Aishwarya Raj, 3rd year Electrical Engg for emerging as WINNER of 'Women of Mettle-Season-5.'

It's a pioneering scholarship programme conducted by Tata Steel to induct women through a rigorous selection process involving 950+ female students from country's premier engineering institutes.

After being selected in Top 10 finalists she presented a case study on the topic 'Identification of various factors that impact the performance of belt weighing system at Tata Steel Kalinganagar and Coke Balance MIS' before a panel of learned jury and was adjudged the winner. She is entitled to be rewarded with the scholarship and invitation to join Tata Steel as technical intern and subsequently receive a pre placement offer (PPO). We wish her more success in all her future endeavors.

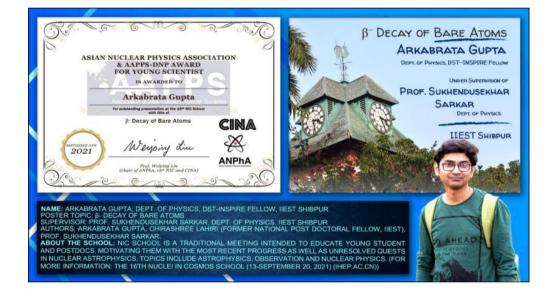


Abhranila Day, ETC M.Tech. 2020 Batch, hay received SRISTI-GYTI Appreciation Award 2021

SRISTI- GYTI (Gandhian Young Technological Innovations) national awards are for innovative student projects in engineering, pharmacy, science and other applied technologies. These awards are given in Festival of Innovation (FOIN), organised by the President's Secretariat and is assisted by the National Innovation Foundation (NIF), an autonomous institution under the Department of Science and Technology, Government of India.

"Project titled 'An Indigenous Low-cost Smartphone
Interfaced Handheld Potentiostat' has been selected
for SRISTI GYTI Appreciation 2021"

Supervisor: Dr. Chirasree Roy Chaudhuri



Congratulations Ms Sanghamitra Ghosal!

Ternary Hybrid junctions of Semiconducting Oxide Nanostructures, Reduced Graphene Oxide and Noble Metal for Improved Gas Sensor Device Applications

SELECTED FOR CONFERMENT OF Innovative Student Projects Award 2021 at (Doctoral Level) by Indian National Academy of Engineering (INAE)

Sanghamitra completed her Doctoral Program, at the School of VLSI Technology in 2020. Her Phd program was supported by Ministry of Electronics & Information Technology (MeitY), Government of India under the Visvesvaraya Scheme. Her project was guided by Dr. Partha Bhattacharya, Dept. of Electronics and Telecommunication. IIEST wishes her success in new frontiers.





MEMS for Electric Machines and Drives (MEMS Machines) Mainak Sengupta

Prof. & PI Dept. of Electrical Engineering



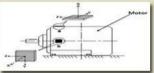
Funded by: NaMPET Amount: 42.09 Lakhs

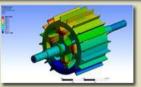
Outline

- Testing MEMS sensors on the following prototypes-
- Vibration sensors and MEMS based accelerometers
- 2. Torque sensors
- 3. Position sensors

\

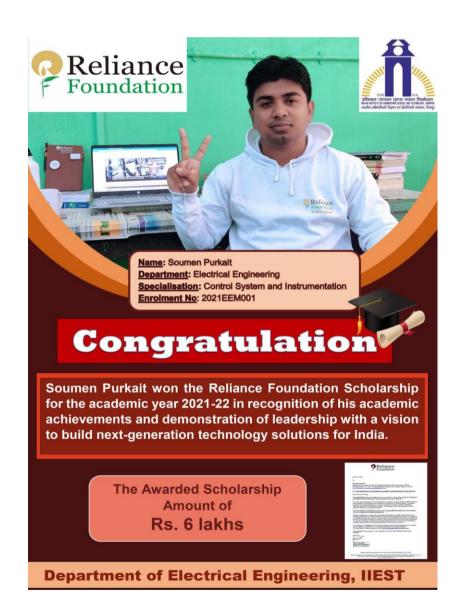
 Design and control of special machines with Embedded

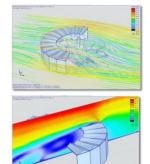




Social impact/ novelty

- Reduction of vibration in electrical machines
- Checking long term vibration induced system faults through monitoring vibration
- Very cheap torque sensors
- Increasing the longevity of machines substantially

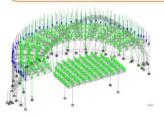


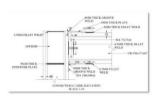




Team BEings (E01) secured first position all over India in National Civil/Structural Engineering Students Award Competition: 2021 Conducted By: Institute for Steel Development & Growth (INSDAG) Theme: Iconic Steel Roof Structure Over An Open-Air Theatre & Stage Guiding Faculty: Dr. Sujit Kumar Dalui

(Asst. Professor, Department of Civil Engineering, IIEST, Shibpur)















SOMRAJ SEN

Congratulations

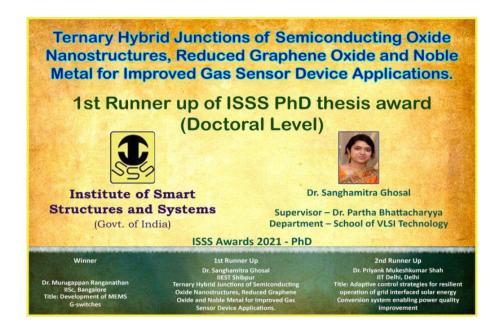




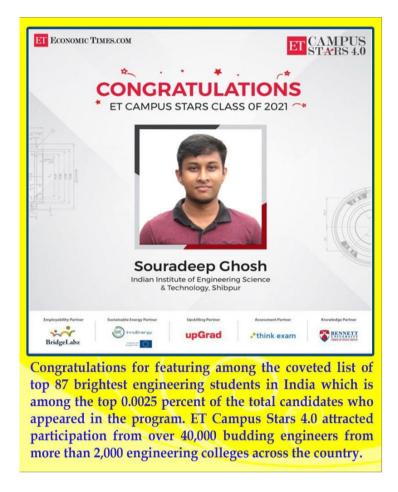
Subhankar Pramanik IT, UG 2019-2023

IIEST, Shibpur congratulates our student for

- Securing a **global rank 10** among **1 lakh+** participants in TCS CodeVita Season 10 Round 2.
- He was one of the top 30 coders who qualified for the Grand Finale.
- The competition was held online on 15th - 16th April, 2022.







6.8. Highlight Selected Start-Ups Established by Students/Faculties with Mention of Founder/Cofounder Name

LOCER

A retail-tech SaaS startup established by current 4th year students of IIEST Shibpur that aims to digitise, modernise and organise the entire unorganised retail sector of India.

- 1) Raushan Singh, 4th Year, B. Tech., Information Technology
- 2) Prajwal Velupala, 4th Year, B. Tech., Electronics and Telecommunications Engineering
- i) Participation of IIC-institute in various programs of Central and Stage Govt. Highlighting specially for the schemes or programs
 - NISP Adoption status underway
 - Smart India Hackathon-3 teams nominated for participation

ii) Detail of Social media & Connections of IIC institute

https://twitter.com/iic_iiests

https://www.linkedin.com/in/iic-iiest-shibpur/

https://www.facebook.com/iic.iiests/

https://www.youtube.com/iiciiestshibpur

https://www.instagram.com/iic_iiests/

Annual Report 2021-22 Indian Institute of Engineering Science and Techn	iology, Snibpur

Training and Placement

7.1 The Mandate

Training and placement of students are administered by the Human Resource Management (HRM) Department of the Institute. Mandates of the Department include, *inter alia*, the following.

- Job Placements of the students of the Institute through Campus and Off-campus selection processes
- Internship of students of the Institute at various industries and research institutes
- Internship of students of other institutes at IIEST
- Facilitation for other options: Preparatory programme for competitive examinations and other educational options abroad
- Industry Interaction Programme / Academic collaborations
- Entrepreneurship Development
- Innovation and IPR awareness and facilitation
- Career Counselling
- Offering PhD Programme in specific inter-disciplinary areas

This predominantly is a service department catering to all UG, PG and PhD students in terms of their placement and training.

7.2 Industry-Connect and Allied Events

Some of the related Industry-Connect and allied events facilitated by HRM Department during 2021-2022 where IIESTS students took part:

SI.	Event	Hosted by
1	Aspiring Engineers Program	TATA STEEL
2	TCS Codevita	TCS
3	Amazon Future Engineer: Afe India Scholarship	Amazon
4	Hackwithinfy 2022	Infosys
5	Ericsson Innovation Awards 2021	Ericsson
6	Data Fiesta 2.0 - Polestar	Polestar
7	Hackathon (Zeta Hacks 3.0)	M/s Zeta.
8	Flipkart's Robotics Hiring Challenge Grid 3.0	Flipkart
9	Hackathon - Technodiva	Monster.com

SI.	Event	Hosted by
10	Hackathon And Jumpstart	Publics sapient
11	Novus X.o PRODUCATHON	Faurecia India
12	The Frank Arnott Award"	Datacode India
13	'Go4youth' 2021	TERI
14	Amazon Wow- Alumni Connect-2022	Amazon
15	Microsoft Unbox Explore Celebrate -2022	Microsoft
16	Hyland Tech Outreach-Virtual Session on Technology	Hyland
17	Walmart Codeher -2022 For Women Engineers	Walmart
18	Webinar- British Council Scholarship for Women	British Council
19	Google First Virtual Girl Hackathon in India	Google
20	Dare 2 Compete	Hero Motor Corp
21	BTL Star Tech- Innovation Challenge in Health Care Industry	BTL Star Tech
22	Aadhar Hackathon	Infosys
23	Amazon WOW- Live Coding Session for Girl Students	Amazon
24	Aditya Birla Group-Elp Conversation Event Cafe -2021	Aditya Birla Group
25	EY Techalan IT Innovation on Challenge	E&Y
26	Hero Campus Challenge	Hero
27	ZS Ace-A-Thon for Women	ZS
28	Steel Challenge- A Competition from TATA Steel	TATA Steel
29	Gre Olympiad	Galvanize
30	National Hackathon- For India's Best Women Coder	Monster.com

7.3 Placement Statistics

The details of the UG and PG placements for the last 3 years with department wise break up are furnished in Table 7.3.1 and Table 7.3.2, respectively. Table 7.3.3 records the details of the placement of the students from schools /centers at the PG level. Table 7.4 documents the Internship / Summer Training data for the last 3 years.

Table 7.3.1: UG Placement

	Department	CST	ЕТС	H	⊨	ME	빙	MET	NIM	AE& AM	ARCH	TOTAL
2021- 2022 (up to 31.03.22)	Total Number of Offers including multiple offers	104	58	78	109	74	88	34	30	20	4	599
2020- 2021		87	71	83	94	57	70	20	23	9	0	514
2019- 2020		88	49	63	78	45	54	16	20	14	0	427

Table 7.3.2: PG Placement (MTech & Dual Degree)

	Dept.	CST	ETC	33	ICE	ME	CE	MET	Z	AE&AM	PHYSICS	CHEMISTRY	МАТН	EARTH Sc	TOTAL
2021-															
2022	Total	15	19	7	18	11	5	5	0	3	О	0	5	0	88
(up to	Number			'											
31.03.22)	of Offers														
2020-	including	10	18	,	10	_	_		_	_					5 2
2021	multiple	10	10	4	10	1	2	3	2	2	0	0	0	0	52
2019-	offers	17	16		2	8	11	1	2	0	1	0	0	0	67
2020		17	10	9		0	11			J		J	J	J	0/

Table 7.3.3: PG Placement (School/Centre)

	Department / Course	Bio Medical	VLSI	Mat. Sc.	Mechatronics	Safety & Occu- pational Health	REST	MBA	FPNS	TOTAL
2021- 2022 (up to		2	12	3	15	1	6	3	3	45
31.03.22)	Total Number of Offers									
2020-	including multiple offers	0	7	0	1	1	0	2	0	11
2021			/	J			J		0	**
2019-		0	2	1	0	2	1	17	0	23
2020					<u> </u>			-/		<u>-3</u>

Table 7.3.4: Vacational Training / Internship

Year	Internship / Training	
2021-2022 (Summer Vacation 2021)	No. of Companies / Organisations	34+
2020-2021	offering Internship	30+
2019-2020		20+

The above figures do not include Internships in different Industries and Academic Institutions organised through individual initiatives of the students.

Figures 7.3.1 and **7.3.2** below depict the status of Total Offers made to the students of 2022 Passout Batch, for Full Time Employment (FTE), vis-à-vis Total Number of eligible / interested students, from UG and PG courses, respectively.

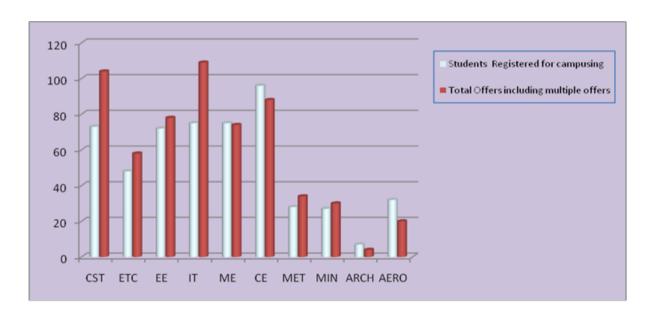


Fig. 7.3.1 : Eligible UG Batch Size vs. Total Offers made through Institutional Placement Process for 2022 Pass-Out Batch (Till 31st March, 2022)

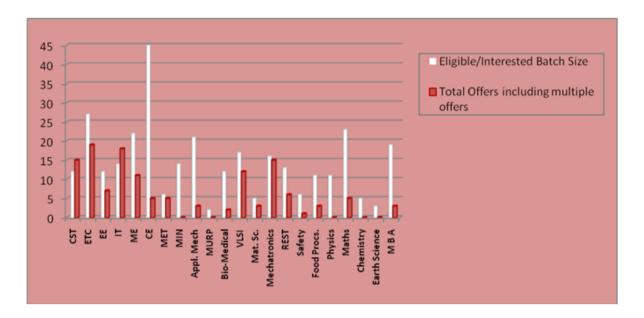


Fig. 7.3.2 Eligible PG Batch Size vs. Total Offers made through Institutional Placement Process for 2022 Pass-Out Batch (Till 31st March, 2022)

7.4 Recruiters

Different Recruiters, as detailed in **Table 7.4**, through their On / Off Campus selection processes have recruited IIEST students of 2022 pass-out batch in different profiles.

Table 7.4: Recruiters of 2022 Pass-Out Batch (Till 31st March, 2022)

Recruiters	Recruiters	Recruiters
221B Baker Street	HCDS Technologies	Saint-Gobain India
Aakash Institute	HCL Technologies	Samsung R&D Institute
Abzooba	HIS Markit	Senrysa Technologies Pvt. Ltd.
Accenture	Hitachi Vantara LLC	Shapoorji Pallonji & Co. Ltd.
Adani Group	HoiChoi Technology Pvt. Ltd.	Shristi Infra Corp
Aditya Birla Group	HSBC India	SMS India Pvt. Ltd.
Amazon India	Hyundai Motor India Ltd.	Sterlite Technologies
Anandpush Technologies Pvt. Ltd.	IBM India	SUBEX Ltd.
Anchanto Services Pvt. Ltd.	ImpactGuru	Swym Technologies Pvt. Ltd.
Atlassian	Incture	Tata Bluescope Steel (Female)
Bajaj Auto Ltd.	IndianOil Petronas Pvt. Ltd.	Tata Consultancy Services
Bentley Systems	Infosys	Tata Consulting Engineers Ltd.
Berger Paints India Ltd.	Interra Systems Pvt. Ltd.	Tata Digital Ltd.
BirlaSoft	ITD Cementation	Tata Electronics Ltd.

Recruiters	Recruiters	Recruiters
Bit Canny Technologies Pvt. Ltd.	Itobuz Technologies Pvt. Ltd.	Tata Metaliks Ltd.
BuyerForesight	Jindal Stainless Ltd.	Tata Power Ltd.
Byju's (Faculty)	JIO Platforms Ltd.	Tata Steel BSL Ltd.
Cambium Networtks	Johnson Controls India	Tata Steel Ltd.
Capgemini	Josh Technology	TEG Analytics
CESC Ltd.	JSW Group	Tega Industries Ltd.
Citius Tech	L&T Ltd.	Tejas Network Ltd.
Cognizant	LatentView Analytics	Telecom Regulatory Authority of India
Concentrix Catalyst	Lexmark International India Pvt. Ltd.	Texas Instruments
Daikin Air-Conditioning India Pvt. Ltd.	Linde India Ltd. (Only for Female)	Think Future Technologies Pvt. Ltd.
Deltax	Mapline	Trilogy Innovations
Deutsche Bank	Maruti Suzuki India Ltd.	UBER
Digite Infotech Pvt. Ltd.	Media.Net	Vedanta Cairn Oil & Gas
DX Corr Hardware Technologies Pvt. Ltd.	Mentor Graphics	Vedanta Ltd.
Dynamic Digital Technologies Pvt. Ltd.	Mercedes-Benz Research & Development India	Veritas Technologies LLP
Ericsson Global Services India	Microsoft	Wells Fargo EGS
Ernst & Young India Pvt. Ltd.	MindTree	
Exide Industries Ltd.	Optum- A United Health group	Willis Tower watson Co.
EXL Services	Oracle Corporation	Wipro Ltd.
Factwise Tech Pvt. Ltd.	PWC	Wood India Engineering & Projects
FIS University	Primetals Technologies India Pvt. Ltd.	Worley India Pvt. Ltd.
GainwellCommosales Pvt. Ltd.	Publicis Sapient	WSP
Grey Orange Pte. Ltd.	Rebel Foods Pvt. Ltd.	Zensar Technologies
Haldia Energy Limited	Runaya Group	Zifo R&D Solutions
Haldia Petrochemicals Ltd.		ZS Associates

7.5 Vacational Training or Summer Internship

Besides, final Placements, many students, predominantly from Pre-final Year, also had the opportunity for Vacational Training (VT) or Summer Internship Programme in reputed industrial / academic institutions - some of which are also maturing to Pre-Placement Offers. However, it may

be mentioned that, due to lock-down arising out of Covid-19 pandemic, many such internships, particularly in physical mode, were affected during summer vacation of 2021. Some of that could successfully conduct the Internship during Summer Vacation 2021 are listed in **Table 7.5** below:

Table 7.5: Some of the Organisations where the Students had undergone their Internship during

Summer -2021

Name of the Organisations	Name of the Organisations
Aditya Birla	NTPC Durgapur
Daikin Airconditioning India Ltd.	DVC Limited (Mejia)
Hyland Software	Vizac Steel Plant
Vedanta Crain Oil	Bharat Heavy Electricals
CESC Limited	Kanti Bijlee Utpadan Nigam Ltd.
Tata Steel Limited	DRDO (Solid State Physics Laboratory), Delhi
Jindal Stainless Ltd.	L &T Limited
Media.Net	Bridge & Roof
Saint-Gobain India	Price-water House Coopers
Digite Infotech	Micro-Soft IDC
Texus Instruments	Telecom Regulatory Authority of India
WBPDCL	WBSEDCL

Annual Report 2	. 021-22 Indian Institute	or Engineering Science	e and Technology, Si	nibpur

Faculty Recruitment

8.1 Status of Regular Faculty Recruitment

The first round of selection process of recruitment for faculty posts in different academic units of the institute against the rolling advertisement (No. JU/RO/19/57, dated: 11.06.2019 and DE/RO/19/104, dated: 05.12.2019) published in the institute website www.iiests.ac.in was extended till 31stJuly, 2021 and further extended till 7th March, 2022 for the second round.

The applications received for the first round of selection were sent to the respective academic units on 27.08.2021 for short listing.

8.2 Special Drive for Faculty Recruitment Against Backlog Reserved Vacancies (Advertisement No. RO/SE/21/12, Dated: 22.09.2021)

The updated monthly report of the status of faculty recruitment against the reserved backlog vacancies of the institute has been sent to the Secretary (HE), Department of Higher Education, Ministry of Education, Government of India [vide D.O. No. 33-2/2021-TS-III (Pt.I), GOI/93/2021, Dated: 24.08.2021]

Institute has already initiated a special drive for faculty recruitment against 23 backlog reserved vacancies (SC = 2, ST = 2, OBC = 19) at the Assistant Professor level. The first page of Advertisement in the institute website has been pasted below. The Advertisement was published on 22nd September, 2021 and the last date of submission of application was 21st October, 2021.

Number of Backlog Vacancies with Reference to the Advertisement No. AU/RO/18/76, Dated: 03/08/2018:

SI.	Assistant Professor	Number of Vacancies
1	ST	02
2	SC	02
3	ОВС	19

Reservation for PWD is applicable as per Central Government Rules.

Annual Report 2021-22 Indian Institute	of Engineering Science and Technology, Shibpur
	140

O9 Academic Contributions

9.1 Journals Pubications

Aerospace Engineering and Applied Mechanics

- M. Rana, A. Chaudhuri, J. K. Biswas, I. Karim, P. Datta, S. K. Karmakar and Amit Roychowdhury, "Design of patient specific bone stiffness mimicking scaffold", Proceedings of Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, Vol.235, pp.1453-1462, 2021 [Impact Factor: 1.76]
- 2. S. Pal, C. Bose and S. Haldar, "Free Vibration Analysis of Laminated Composite Plate with Cut-Out Carrying Concentrated and Distributed Mass", Journal of The Institution of Engineers (India): Series C, Vol.102, pp.1447-1460, 2021 [Impact Factor: 1.42]
- 3. S. Ghosh, S. Haldar and S. Haldar, "Free vibration analysis of laminated composite plate with elastic point and line supports using finite element method", Journal of The Institution of Engineers (India): Series C, Vol.103, pp.369-380, 2022 [Impact Factor: 1.42]
- 4. S. Pal, K. Kalita and S. Haldar, "Genetic Algorithm-Based Fundamental Frequency Optimization of Laminated Composite Shells Carrying Distributed Mass", Journal of The Institution of Engineers (India): Series C, Vol.103, pp.389-401, 2022 [Impact Factor: 1.42]
- 5. K. Kalita, S. Haldar and S. Chakraborty, "A Comprehensive Review on High-Fidelity and Metamodel-Based Optimization of Composite Laminates", Archives of Computational Methods in Engineering, Vol.29, pp.3305-3340, 2022 [Impact Factor: 8.171]
- 6. G. Roy, A. K. Bhoi, S. Das, S. Bhaumik, "Cross-correlated spectral entropy-based classification of EEG motor imagery signal for triggering lower limb exoskeleton", Signal, Image and Video Processing, Vol.13(3), pp.567-573, 2022 [Impact Factor: 2.16]
- 7. S. Bhattacherjee, S. Chatterjee, S. Bhaumik, "Carbon nanotube/glycerol embedded low-cost flexible sensor for large deflection sensing of continuum manipulators", Measurement Science and Technology, Vol.33, pp.45107, 2022 [Impact Factor: 2.398]
- 8. S. Hansda, V K Das, K Debnath, "Temporal modulation of turbulence structure over progressive erosion boundary under influence of wave current combined flow", Environmental Fluid Mechanics, Vol.22, pp.683-713, 2022 [Impact Factor: 2.618]
- 9. S. Roy, V. K. Das, K. Barman, B. Mondal, K. Debnath, "Coupled dynamics of river bank undercut depth increment due to random velocity field", Environmental Engineering & Management Journal (EEMJ), Vol.21, 2022 [Impact Factor: 0.92]
- 10. A. Banerjee, M.P. Khan, A. Barui, P. Datta, A. Roy Chowdhury and K. Bhowmik, "Finite element analysis of influence of cyclic strain on cells anchored to substrates with varying properties", Med. Biol. Eng. Comput., Vol.60, pp.171-187, 2021 [Impact Factor: 3.079]

- 11. R. Roy, L. P. Raj, J.-Hyun Jo, Min-Young Cho, J.-HweKweon, R. Shin Myong, "Multiphysics antiicing simulation of a CFRP composite wing structure embedded with thin etched-foil electrothermal heating films in glaze ice conditions", Composite Structures, Vol.276, 2021 [Impact Factor: 6.603]
- 12. B. Senguptaa, L. P. Raj, M.Y. Cho, C. Son, T. Yoon, K. Yee, R.S. Myong, "Computational simulation of ice accretion and shedding trajectory of a rotorcraft in forward flight with strong rotor wakes", Aerospace Science and Technology, Vol.119, 2021 [Impact Factor: 5.46]
- 13. A. Chakraborty, P. Datta, C.S. Kumar, S. Majumder, A. Roychowdhury, "Probing combinational influence of design variables on bone biomechanical response around dental implant-supported fixed prosthesis", Journal of Biomedical Materials Research Part B: Applied Biomaterials (Wiley), Vol.110, pp.2338-2352, 2022 [Impact Factor: 3.41]
- 14. A. Chakraborty, K.D Sahare, P. Datta, S. Majumder, A. Roychowdhury, B. Basu, "Probing the influence of hybrid thread design on biomechanical response of dental implants: Finite element study and experimental validation", Journal of Biomechanical Engineering (ASME), Vol.145, 2022 [Impact Factor: 2.09]
- 15. S. Chowdhury, M. Rana, A. Chakraborty, S. Majumder, S. Roy, A. Roychowdhury, S. Datta, "Design of patient specific basal dental implant using finite element method and artificial neural network technique", Part H: Journal of Engineering in Medicine (SAGE), Vol.236, pp.1275-1387, 2022 [Impact Factor: 1.76]
- 16. P. Dutta and N. Nandi, "Numerical analysis on the development of vortex structure in 90-degree pipe bend", Progress in Computational Fluid Dynamics, Vol.21, pp.261-273, 2021 [Impact Factor: 1.05]
- 17. S. Saha and N. Nandi, "Effect of guide vane on turbulence characteristics for single-phase flow through 90-degree pipe bend", JAFM, Vol.14, pp.1195-1208, 2021
- 18. A, Das, B. Barman and N. Nandi, "On some aspects of flow characteristics of the bifurcated channel "an experimental approach", ISH Journal of Hydraulic Engineering, 2022
- 19. A. Datta and P. Halder, "Thermal efficiency and hydraulic performance evaluation on AgAl₂O₃ and SiCAl₂O₃ hybrid nanofluid for circular jet impingement", Archives of thermodynamics, Vol.₄₂, pp.16₃-18₂, 20₂1
- 20. S. Koley, C.S. Upadhyay, P. M. Mohite, "Study of boundary layer effects at ply interfaces of laminated composites using homogenization theory", Composite Structures, Vol.286, 2022 [Impact Factor: 6.603]

- 21. A. Banerjee, A.R. Chowdhury, S. Datta, P. Datta, "Cell-Laden Alginate Hydrogel Modelling using Three-Dimensional (3D) Microscale Finite Element Technique", Journal of The Institution of Engineers (India): Series C, Vol. 103, pp. 301-306, 2022
- 22. P. Mondal, A. Wazeer, A. Das, A.R. Chowdhury, A. Karmakar, "Effect of Heat Treatment on Compressive Behavior of Selectively Laser Melted Ti64 Scaffolds", Journal of The Institution of Engineers (India): Series D, pp. 1-9, 2022
- 23. A. Das, S. Adhikary, A.R. Chowdhury, A. Barui, "Leveraging Substrate Stiffness to Promote Stem Cell Asymmetric Division via Mechanotransduction—Polarity Protein Axis and Its Bayesian Regression Analysis", Rejuvenation Research, Vol. 25, pp. 59-69, 2022 [Impact Factor: 3.192]
- 24. A. Banerjee, S. Datta, A. Das, A. Roy Chowdhury, P. Datta, "A Micro-Scale Non-Linear Finite Element Model to Optimize the Mechanical Behavior of Bioprinted Constructs", 3D Printing and Additive Manufacturing, 2022 [Impact Factor: 5.355]
- 25. P. Mondal, A. Das, A. Mondal, AR. Chowdhury, A. Karmakar, "Fabrication of Ti-6Al-4V Porous Scaffolds Using Selective Laser Melting (SLM) and Mechanical Compression Test for Biomedical Applications", Journal of The Institution of Engineers (India): Series D, Vol.103, pp. 181-190, 2022
- 26. K. Bhowmik, H. Ambati, N. Khutia, AR. Chowdhury, "Prediction of Elastic Constants of Spiral MWCNT-Reinforced Nanocomposites by Finite Element Analysis", Recent Advances in Computational and Experimental Mechanics, Vol. 2, pp. 449-458, 2022
- 27. R Barua, S. Das, S. Datta, P. Datta, AR. Chowdhury, "Analysis of surgical needle insertion modeling and viscoelastic tissue material interaction for minimally invasive surgery (MIS)", Materials Today: Proceedings, Vol. 57, pp. 259-264, 2022
- 28. S. Das, P. Datta, AR. Chowdhury, "Optimizing Cell Deformation in Extrusion-Based Bioprinting Process by Importing Inherent Viscoelasticity Using Computational Fluid Dynamic", Recent Advances in Computational and Experimental Mechanics, Vol. 1, pp. 337-348, 2022
- 29. R. Barua, S. Datta, A. RoyChowdhury, P Datta, "A Review on the epidemiology and characteristics of COVID-19", Journal of Current Biomedical Reports, Vol. 2, pp. 95-106, 2021
- 30. A. Das, S. Adhikary, AR. Chowdhury, A. Barui, "Substrate-dependent control of the chiral orientation of mesenchymal stem cells: image-based quantitative profiling", Biomedical Materials, Vol. 16, 2021 [Impact Factor: 4.103]
- 31. S. Datta, R. Barua, A. Das, A. RoyChowdhury, P. Datta, "The biological and mechanical study of Alginate/Honey 3D printed scaffolds", IAR Journal of Engineering and Technology, Vol. 2, 2021
- 32. AR. Chowdhury, MA. Hannan, SK. Dey, M. Jannat, MH. Rahman, "Association of incomplete Circle of Willis with severity of acute ischaemic stroke: Incomplete circle of willis and acute ischaemic stroke", Bangladesh Medical Research Council Bulletin, Vol. 47, pp. 188-191, 2021

33. P. Kumar, P. Hodgson, H. Beladi, AR. Chowdhury, ME. Makhatha, AK. Dutt, "Restoration Mechanism and Sub-Structural Characteristics of Duplex Stainless Steel with an Initial Equiaxed Austenite Morphology during Post-Deformation Annealing", Key Engineering Materials, 882, pp. 64-73, 2021

Architecture, Town and Regional Planning

- 1. A. Mohanta and S. Das, "Decision support system for the early stage of green building envelope design considering energy and maintainability", Arch. Engg. & Design Mgmt., 2022 [Impact Factor: 2.65]
- 2. A. Mohanta, S. Das and RN Mohanty, "Building envelope trade-off method integrated with BIM-based framework for energy-efficient building envelope", Arch. Engg. & Design Mgmt., Vol.17, pp.516-536, 2021 [Impact Factor: 2.65]
- 3. A. Narendr, S. Vinay, BH. Aithal and S. Das, "Multi-dimensional parametric coastal flood risk assessment at a regional scale using GIS", Environment, Development and Sustainability, Vol.24, pp.9569-9597, 2022 [Impact Factor: 4.080]
- 4. A. Mohanta and S. Das, "Causal analysis of slow BIM adoption in eastern India with a special focus on green building sector", J. of IEI India: Series A, Vol.103, pp.319-337, 2022 [Impact Factor: 0.96]
- 5. K. Ghosh and A. Sarkar, "Evaluating urban wastewater remediation efficiency of the Hydroponic Vetiver System through predictive modelling using Artificial Neural Network", Environmental Technology & Innovation, Vol.24, 2021 [Impact Factor: 7.76]
- 6. T. S. Maparu and T. N. Mazumder, "Investigating causality between transport infrastructure and urbanization: A state-level study of India (1991-2011)", Transport Policy, Vol.113, pp.46-55, 2021 [Impact Factor: 6.17]

Chemistry

- 1. A. Karak, S. K. Manna, and A. K. Mahapatra, "Triphenylamine-based small-molecule fluorescent probes", Analytical Methods, Vol.14, pp.972-1005, 2022 [Impact Factor: 3.532]
- 2. A. Jana, A. Aher, P. Brand, P. Bera, S. Sharda, U. Phadikar, S.K. Manna, A. K. Mahapatra and P. Bera, "Evaluation of anticancer activities varying ligand substituents in Co(II/III)-picolyl phenolate derivatives: Synthesis, characterization, DFT, DNA cleavage and molecular docking studies", Dalton Trans., Vol.51, pp.2346-2363, 2021 [Impact Factor: 4.569]
- 3. A. Jana, A. Aher, P. Brand, S. Shard, P. Bera, U. Phadikar, S. K. Manna, A. K. Mahapatra and P. Bera, "Dissociation of a tripodal pyridyl-pyrazole ligand and assortment of metal complex: Synthesis, structure, DFT, thermal stability, cytotoxicity, DNA cleavage, and molecular docking

- studies", Journal of Molecular Structure, Vol.1256, pp.132479-132496, 2022 [Impact Factor: 3.841]
- 4. A. Maiti, S. K. Manna, D. Banik and A. K. Mahapatra, "Name reactions: Strategies in design of chemodosimeters for analyte detection", New Journal of Chemistry, Vol.45, pp.20046 20074, 2021 [Impact Factor: 3.925]
- 5. S. K. Samanta, K. Maiti, S. K. Manna, S.S. Ali, U. N. Guria, A. Ghosh, P. Datta and A. K. Mahapatra, "An aggregation-induced emission (AIE)-active fluorescent chemodosimeter for selective sensing of hypochlorite in water and solid state: Endogenous detection of hypochlorite in live cells", Dyes and Pigments, Vol.196, pp.109758-109766, 2021 [Impact Factor: 5.122]
- 6. S. K. Chattopadhyay, S. Naskar, S. Naskar, H. M. Figge, W. S. Sheldrick, "Square planar Ni(II) thiosemicarbazone complexes as functional models for carbon monoxide dehydrogenase", J. Ind. Chem. Soc., Vol.99, pp. 1-5, 2022 [Impact Factor: 0.24]
- 7. C. Das, A. Mondal, S. Sengupta, C. Cardin, S. K. Chattopadhyay, "Selective cyanide sensing using a Fe(III) complex of pyridoxal-beta alanine Schiff base", Spectrochim. Acta A, Vol.273, 2022 [Impact Factor: 4.83]
- 8. M. Chakraborty, M. Mohanty, R. Dinda, S. Sengupta, S. K. Chattopadhyay, "Cu(II) complexes of a bio-compatible aminoguanidine Schiff base: Histidine sensing and DNA-binding studies", Polyhedron, Vol.211, pp. 1-14, 2021 [Impact Factor: 3.05]
- 9. D. Pan, N. Parshi, B. Jana, K. Prasad, J. Ganguly, "Optimization of the spontaneous adsorption of food colors from aqueous medium using functionalized Chitosan/Cinnamaldehyde hydrogel", International Journal of Biological Macromolecules, Vol.193, pp.758-767, 2021 [Impact Factor: 8.02]
- 10. B. Jana, A. Chatterjee, D Roy, S. Ghorai, D. Pan, SK. Pramanik, N. Chakraborty, J. Ganguly, "Chitosan/benzyloxy-benzaldehyde modified ZnO nano template having optimized and distinct antiviral potency to human cytomegalovirus", Carbohydrate Polymers, Vol.278, 2022 [Impact Factor: 10.72]
- 11. S. Biswas, T. Rahaman, P. Gupta, R. Mitra, S. Dutta, E. Kharlyngdoh, S. Guha, J. Ganguly, A. Pal, M. Das, "Cellulose and lignin profiling in seven, economically important bamboo species of India by anatomical, biochemical, FTIR spectroscopy and thermogravimetric analysis", Biomass and Bioenergy, Vol.158, 2022 [Impact Factor: 5.77]
- 12. D Pan, B Jana, J Ganguly, "Detection of nitro aniline by bovine serum albumin based self-fluorescent hydrogel via FRET process", Journal of Applied Polymer Science, Vol.139, pp.52236, 2022 [Impact Factor: 3.12]

- 13. L. Adak, M. Jin, S. Saito, T. Kawabata, T. Itoh, S.Ito, A. K. Sharma, N.J. Gower, P. Cogswell, J. Geldsetzer, H. Takaya, K. Isozaki and M. Nakamura, "Iron-catalysed enantioselective carbometalation of azabicycloalkenes", Chem. Commun, Vol.57, pp.6975-6978, 2021 [Impact Factor: 6.22]
- 14. C. Ranu, L. Adak and T. Ghosh, "Learning Green Chemistry and its principles from Nature process and development of green procedures mimicking nature", Chemistry Teacher International, Vol.4, pp.127-141, 2021 [Impact Factor: 1]
- 15. L. Adak, D. Kundu, K. Roy, M. Saha and A. Roy, "Reusable Iron/Iron Oxide-based Nanoparticles Catalyzed Organic Reactions", Current Organic Chemistry, Vol.26, pp.399-417, 2022 [Impact Factor: 2.226]
- 16. P. K. Samanta, R. Biswas, S. N. Bhaduri, S. Ray, P. Biswas, "Copper(o) nanoparticles immobilized on SBA-15: A versatile recyclable heterogeneous catalyst for solvent and ligand free CS coupling reaction from diverse substrates", Microporous and Mesoporous Materials, Vol.323, pp.111198, 2021 [Impact Factor: 5.87]
- 17. R. Banerjee, D. Ghosh, Kirti, D. K. Chanda, A. Mondal, D. N. Srivastava and P. Biswas, "Nickel sulphide decorated nitrogen rich ordered mesoporous carbon (NOMC) as an efficient catalyst for the electrocatalytic oxidation of urea in alkaline medium", Electrochimica Acta, Vol.408, pp.139920, 2022 [Impact Factor: 7.33]
- 18. L. Schefzig, T. Kurzawa, G. Rancan, I. Linder, S. Leisering, M. K. Bera, M. Gart, R. Zimmer, H. U. Reissig, "Access to Highly Substituted Pyrimidine N-Oxides and 4-Acetoxymethyl-Substituted Pyrimidines via the LANCA Three-Component Reaction Cyclocondensation Sequence", Synthesis, Vol.53, pp.2067-2080, 2021 [Impact Factor: 2.97]
- 19. A. Nayak, M. Bandyopadhyay, D. Chopra, M. K. Bera, "An Expedient Route to Diaryl Tetrahydropentalenedione Derivatives via Intramolecular Pauson- Khand Carbonylative Cycloaddition-Oxidation Protocol", Chemistry Select, Vol.6, pp.5290-5294, 2021 [Impact Factor: 2.307]
- 20. S. K. Samanta, R. Sarkar, M. K. Bera, "Synthesis of (E)- iodovinyl sulfones via oxidative addition of thio into alkyne under metal free condition", Tetrahedron, Vol.77, pp.132310, 2021 [Impact Factor: 2.45]
- 21. R. De, A. Savarimuthu, S. Chandra, M. K. Bera, "Direct conversion of secondary propargyl alcohols into 1,3-di-arylpropanone via DBU promoted redox isomerization and palladium assisted chemoselective hydrogenation in a single pot operation", New Journal of Chemistry, Vol.45, pp.17871-17877, 2021 [Impact Factor: 3.925]

- 22. R. Sarkar, S. K. Samanta, A. Hasija, D. Chopra, D. Ganguly, M. K. Bera, "A practical route to arylated dihydroacridine derivatives via nickel boride mediated intramolecular reductive cyclization-concomitant dehydration", New Journal of Chemistry, Vol.46, pp.7168-7176, 2022 [Impact Factor: 3.925]
- 23. K. Guin, R. Mondal, G. Chakraborty, S. Pal and N. D. Paul, "Ruthenium Catalyzed Dehydrogenative Functionalization of Alcohols to Pyrroles. A Comparison between Metal-Ligand Cooperative and Non-Cooperative Approaches", The Journal of Organic Chemistry, Vol.87, pp.7106-7123, 2022 [Impact Factor: 4.34]
- 24. R. Mondal, A. K. Guin, S. Chakraborty and N. D. Paul, "Iron Catalyzed Metal-Ligand Cooperative Approach towards Sustainable Synthesis of Azines and N-Acylhydrazones in Air", The Journal of Organic Chemistry, Vol.87, pp.2921-2934, 2022 [Impact Factor: 4.34]
- 25. S. Das, R. Mondal, A. K. Guin and N. D. Paul, "Ligand Centered Redox Enabled Sustainable Synthesis of Triazines and Pyrimidines Using A Zinc-Stabilized Azo-Anion Radical Catalyst", Organic and Biomolecular Chemistry, Vol.20, pp.3105-3117, 2022 [Impact Factor: 3.89]
- 26. R. Mondal, A. K. Guin, G. Chakraborty and N. D. Paul, "Metal-Ligand Cooperative Approaches in Homogeneous Catalysis Using Transition Metal Complex Catalysts of Redox Noninnocent Ligands", Organic and Biomolecular Chemistry, Vol.20, pp.296-328, 2021 [Impact Factor: 3.89]
- 27. R. Mondal, G. Chakraborty, A. K. Guin, S. Pal and N. D. Paul, "Iron Catalyzed Metal-Ligand Cooperative Approaches towards Sustainable Synthesis of Quinolines and Quinazolin-4(3H)-ones", Tetrahedron, Vol.100pp.132479, 2021 [Impact Factor: 2.45]
- 28. R. Mondal, G. Chakraborty, A. K. Guin, S. Sarkar and N. D. Paul, "Iron Catalyzed Alkyne-Based Multicomponent Synthesis of Pyrimidines under Air", The Journal of Organic Chemistry, Vol.86, pp.13186-13197, 2021 [Impact Factor: 4.35]
- 29. G. Chakraborty, R. Mondal, A. K. Guin and N. D. Paul, "Nickel Catalyzed Sustainable Synthesis of Benzazoles and Purines via Acceptorless Dehydrogenative Coupling and Borrowing Hydrogen Approach", Organic and Biomolecular Chemistry, Vol.19, pp.7217-7233, 2021 [Impact Factor: 3.89]
- 30. S. R. Sloman, S. Sain, J. Olszwka, S. K. Pradhan, A. Wheatley, A. Kar, "Reducing indium dependence by heterostructure design in SnO₂In₂S₃ nanocomposites", Materials Chemistry and Physics, Vol.₂₇₇, pp.₁₂₅₄₆₃, 2021 [Impact Factor: 4.778]
- 31. M. Periyasamy, S. Sain, S. Mukhopadhyay, A. Kar, "An investigation into the influence of quartz phase transition on banded iron ore comminution", JOM, Vol.74, pp.222-233, 2021 [Impact Factor: 2.597]

- 32. M. Periyasamy, S. Sain, E. Ghosh, K. J. Jenkinson, A. E. H. Wheatley, S. Mukhopadhyay, A. Kar, "Visible light photocatalysts from low-grade iron ore; the environmentally benign production of magnetite/carbon (Fe₃O₄/C) nanocomposites", Environmental Science and Pollution Research, Vol.29, pp.6698-6709, 2021 [Impact Factor: 5.190]
- 33. M. Mandal, D. Sain, MM. Islam, D. Banik, M. Periyasamy, S. Mandal, AK. Mahapatra, A. Kar, "A ratiometric triazine-based colorimetric and fluorometric sensor for the recognition of Zn2+ ions and its application in human lung cancer cells", Analytical Methods, Vol.13, pp.3922-3929, 2021 [Impact Factor: 3.532]
- 34. K. Hatua, H.S. Das, A. Mondal and P.K. Nandi, "Electronic second hyperpolarizability of alkaline earth metal chains end capped with NH2 and "CN", Journal of the Indian Chemical Society, Vol.98, pp.100234, 2021 [Impact Factor: 0.28]
- 35. H. S. Das, R. Das, P. K. Nandi, S. Biring, S. K. Maity, "Influence of Ga doped transparent conducting ZnO thin film for efficiency enhancement in organic light emitting diode applications", Appl. Phys. A, Vol.127, pp.125, 2021 [Impact Factor: 2.98]
- 36. R. Sinha Roy, S. Ghosh, K. Hatua and P.K. Nandi, "Superalkali-doped borazine and lithiated borazine complexes: diffuse excess electron and large first-hyperpolarizability", J. Mol. Model, Vol.27, pp.74, 2021 [Impact Factor: 2.17]

• Civil Engineering

- A. K. Swarup Ghosh and S. Chakraborty, "A Long Short-Term Memory Based Deep Learning Algorithm for Seismic Response Uncertainty Quantification", Probabilistic Engg Mech, Vol.67, pp.103189, 2022 [Impact Factor: 3.954]
- 2. S. Ghosh and S. Chakraborty, "Seismic Fragility Analysis of Bridges by Relevant Vector Machine based demand prediction Model", Earthq Eng & Eng Vib, Vol.21, pp.253-268, 2022 [Impact Factor: 2.810]
- 3. A. Roy, S. Chakraborty, "Reliability analysis of structures by a three-stage sequential sampling based adaptive support vector regression model", Reliability Engineering and System Safety, Vol.219, pp.108260, 2022 [Impact Factor: 7.247]
- 4. P. Sengupta and S. Chakraborty, "Markov Chain Monte Carlo Simulation based Bayesian Updating of Model Parameters and their Uncertainties", Structural Engineering and Mechanics, Vol.81, pp.103-115, 2022 [Impact Factor: 3.52]
- 5. D. K. Pandey, S. K. Mishra, S. Chakraborty, "A tuned liquid mass damper implemented in a deep liquid storage tank for seismic vibration control of short period Structures", Struct Design Tall Spec Build, Vol31, 2022 [Impact Factor: 2.760]

- 6. R. Sardar and S. Chakraborty, "Wave Vibration Control of Jacket Platform by Tuned Liquid Dampers", Ocean Engg, Vol.247 [Impact Factor: 4.372]
- 7. S. Halder and U. Saha, "Future Projection of Extreme Rainfall for Flood Management due to Climate Change in an Urban Area", Journal of Sustainable Water in the Built Environment, Vol.7, 2021 [Impact Factor: 0.59]
- 8. R. Chatterjee and C. Majumder, "Low temperature synthesis of functionalized activated carbon from blackboard (Alstonia scholaris) with improved selectivity for methylpyridine removal: batch and column analyses", Environmental Science and Pollution Research, Vol.29, pp.28031-28049, 2022 [Impact Factor: 5.190]
- g. R. Chatterjee and C. Majumder, "Uptake of azaarenic 2-Methylpyridine by pre-cooled carboxyl functionalized graphene nanocomposite: Detection, sorption and optimization", Journal of Water Process Engineering, Vol.39, 2021 [Impact Factor: 7.34]
- 10. D. Pandit, B. N. Patel, "On numerical moment-curvature relationship of a beam", Sadhana, 2021, Vol.47, 2021 [Impact Factor: 1.27]
- 11. T. Konar, A. (Dey) Ghosh, "Adaptation of a deep liquid-containing tank into an effective structural vibration control device by a submerged cylindrical pendulum appendage", International Journal of Structural Stability and Dynamics, Vol.21, pp.2150078, 2021 [Impact Factor: 2.96]
- 12. T. Konar, A. Dey Ghosh, "Use of Deep Liquid-Containing Tanks as Dynamic Vibration Absorbers for Lateral Vibration Control of Structures: A Review", Iranian Journal of Science and Technology, Transactions of Civil Engineering, Vol.46, pp.753-769, 2022 [Impact Factor: 1.46]
- 13. S. Chakraborty, A. (Dey) Ghosh, S. Ray-Chaudhuri, "A novel tuned mass-conical spring system for passive vibration control of a variable mass structure", Journal of Vibration and Control, Vol.28, 2022 [Impact Factor: 2.63]
- 14. S. Majumder, G. Datta, S. Bhattacharjya, "A dual response surface-based efficient fragility analysis approach of offshore structures under random wave load", Applied Mathematical Modelling, Vol.98, pp.680-700, 2021 [Impact Factor: 5.336]
- 15. S. Mandal, S. K. Dalui, S. Bhattacharjya, "Wind induced response of corner modified 'U' plan shaped tall building", Wind and Structures, Vol.32, pp.521-537, 2021 [Impact Factor: 2.47]
- 16. G. Datta, S. Bhtaacharjya, S. Chakraborty, "A metamodeling-based robust optimisation approach for structures subjected to random underground blast excitation", Structures, Vol.33, pp.3615-3632, 2021 [Impact Factor: 4.010]
- 17. G. Datta, S. Bhattacharjya, S. Chakraborty, "Robust design of offshore jacket platform structure under random wave in dual response surface framework", Structure and Infrastructure Engineering, Vol.17, pp.887-901, 2021 [Impact Factor: 3.659]

- 18. B. Mondal, A. Adak and P. Datta, "Integrated UV H₂O₂ and biological treatment processes for the removal of cationic surfactant", Journal of Environmental Engineering and Science, Vol.16, pp.85-93, 2021 [Impact Factor: 0.95]
- 19. S. Sarkar, S. Mohanty, S. Moulick, A. Adak, S. K. Maji, "Adsorption/Photodegradation of Reactive Blue (C.l. No. 21) from Aqueous Media by Hydrothermally Synthesized Titanate Nanotube (TNT)", Proceedings of American Institute of Physics, 2022
- 20. S. Kundu and B.V.S. Viswanadham, "Design and development of an in-flight actuator for modelling dynamic compaction in a geotechnical centrifuge", Geotechnical Testing Journal, American Society for Testing and Materials (ASTM), United States, Vol.44, pp.884-911, 2021 [Impact Factor: 1.84]
- 21. S. Kundu and B.V.S. Viswanadham, "Centrifuge Modelling and DIC of Dynamic Compaction on sandy soils with shallow water table", Journal of Geotechnical and Geoenvironmental Engineering, American Society of Civil Enggs.(ASCE), Vol.147, pp.04021037-1:14, 2021 [Impact Factor: 4.42]
- 22. P. Saha and R. Roy, "A descriptive study of vehicle classwise headways using mixed traffic data",

 Journal of The Institution of Engineers (India): Series A, Springer, Vol.103, 2022
- 23. N. Dutta, P. Mondal and A. Gupta, "Optimization of process parameters using response surface methodology for maximum liquid yield during thermal pyrolysis of blend of virgin and waste high-density polyethylene", Journal of Material Cycles and Waste Management, Vol.24, pp.1182-1193, 2022 [Impact Factor: 3.579]
- 24. N. Dutta and A. Gupta, "An experimental study on conversion of high-density polyethylene and polypropylene to liquid fuel", Clean Technologies and Environmental Policy, Vol.23, pp.2213-2220, 2021 [Impact Factor: 4.70]
- 25. N. Dutta, A. Haldar and A. Gupta, "Electrocoagulation for Arsenic Removal: Field Trials in Rural West Bengal", Archives of Environmental Contamination and Toxicology, Vol.8o, pp.248-258, 2021 [Impact Factor: 3.69]
- 26. M. Bhattacharya, K. Bandyopadhyay and A. Gupta, "Design of a cost-effective electrochlorination system for point-of-use water treatment", Environmental Engineering Research, Vol.26, 2021 [Impact Factor: 3.93]
- 27. P. Sanyal, S. Banerjee, and S. K. Dalui, "Prognosis of aerodynamic coefficients of butterfly plan shaped tall building by surrogate modelling", Wind and Structures, An International Journal, Korea (Techno Press), Vol.34, pp.321-334, 2022 [Impact Factor: 2.47]

- 28. R. Kar, and S. K. Dalui, "Metamodelling based optimization approach for wind interference effect on octagonal tall building", Iranian Journal of Science and Technology, Transactions of Civil Engineering, Vol.46, pp.2067-2084, 2022 [Impact Factor: 1.553]
- 29. S. Bhattacharya, and S. K. Dalui, "Effect of Tuned Mass Damper in Wind Induced Response of Plan Shaped Tall Building", The Structural Design of Tall and Special Buildings (John Wiley & Sons), Vol.131, 2022 [Impact Factor: 2.760]
- 30. R. Paul, and S. K. Dalui, "Aerodynamic Shape Optimization of a High-rise Rectangular Building with Wings", Wind and Structures, An International Journal, Korea (Techno Press), Vol.34, pp.259-274, 2022 [Impact Factor: 1.729]
- 31. P. Sanyal, and S. K. Dalui, "Forecasting of aerodynamic coefficients of tri-axially symmetrical Y plan shaped tall building based on CFD data trained ANN", Journal of Building Engineering (Elsevier), Vol.47, 2021 [Impact Factor: 7.144]
- 32. R. Kar, S. K. and Dalui, "Wind interference effect on an octagonal building in varying positions by Large Eddy Simulation", Advances in Structural Engineering (SAGE), Vol.25, pp.201-211, 2021 [Impact Factor: 2.438]
- 33. D. Kumar, S. K. Dalui, "Aerodynamic modifications for reduction of wind loads on cross plan shaped tall building", Wind and Structures, An International Journal, Korea (Techno Press), Vol.33, pp.123-139, 2021 [Impact Factor: 2.47]
- 34. P. Sanghamitra, D. Mazumder and S. Mukherjee, "EvDetermination of kinetic co-efficients for treating synthetic oily wastewater in suspended growth batch fed reacto", Water Science and Technology, Vol.84, pp.1804 1812, 2021 [Impact Factor: 2.43]
- 35. P. Sanghamitra, D. Mazumder and S. Mukherjee, "Treatment of wastewater containing oil and grease by biological method a review", Journal of Environmental Science and Health "Part A, Vol.56, pp.394 412, 2021 [Impact Factor: 2.58]
- 36. R. Bhattacharya and D. Mazumder, "Simultaneous nitrification and denitrification in Moving Bed Bioreactor and other biological systems", Bioprocess and Biosystems Engineering, Vol.44, pp.635-652, 2021 [Impact Factor: 3.434]
- 37. S. Chakraborty and S. Biswas, "Simulation of flow at an ungauged river site based on HEC-HMS model for a mountainous river basin", Arabian Journal of Geosciences, Vol.14, 2021 [Impact Factor: 1.98]
- 38. T. Choudhari, A. Budhkar and A. Maji, "Modeling overtaking distance and time along two-lane undivided rural highways in mixed traffic condition", Transportation Letters: The International Journal of Transportation Research, Vol.14, pp.75-83, 2022 [Impact Factor: 3.59]

Computer Science and Technology

- 1. T. Chatterjee, S. Karmakar and S. Das Bit, "IPLQueeN: Integrity Preserving Low-overhead Query handling over NDN based WSN", IEEE Access, Vol.9, pp.82786-82811, 2021 [Impact Factor: 3.476]
- 2. T. Chatterjee, S. Karmakar and S. Das Bit, "Efficient Data Storage and Name Look-up in Named Data Networking using Connected Dominating Set and Patricia Trie", Automatic Control and Computer Sciences Journal, Vol.55, pp.319-333, 2021,
- 3. M. Basu, S. Das Bit and S. Ghosh, "Utilising Microblogs for Optimized Real-Time Resource Allocation in Post-Disaster Scenarios", Journal of Social Network Analysis and Mining, Vol.12, 2022 [Impact Factor: 2.27]
- 4. A. Garai, S. Biswas, S. Mandal and B. B. Chaudhuri, "Dewarping of document images: A semi-CNN based approach", Multimedia Tools and Applications, Vol.8o, pp.36009-36032, 2021 [Impact Factor: 2.77]
- 5. A. Dutta, A. Garai, S. Biswas, A. K. Das, "Segmentation of text lines using multi-scale CNN from warped printed and handwritten document images", International Journal on Document Analysis and Recognition (IJDAR), Vol.24, pp.299-313, 2021 [Impact Factor: 3.870]
- 6. A. Dutta, S. Biswas, A. K. Das, "CNN-based segmentation of speech balloons and narrative text boxes from comic book page images", International Journal on Document Analysis and Recognition (IJDAR), Vol.24, pp.49-62, 2021 [Impact Factor: 3.870]
- 7. A. Garai, S. Biswas and S. Mandal, "A theoretical justification of warping generation for dewarping using CNN", Pattern Recognition, Vol.109, 2021 [Impact Factor: 8.518]
- 8. A. Sarkar, S. Ghosh and S. Saha Ray, "A Hardware-Based Memory-Efficient Solution for Pair-Wise Compact Sequence Alignment", IETE Journal of Research, Vol.67, 2021 [Impact Factor: 2.33]
- S. S. Ray, D. Adak and S. Ghosh, "Worst Case O(N) Comparison-Free Hardware Sorting Engine",
 IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Vol.41,
 pp.3332-3345, 2021 [Impact Factor: 2.56]
- 10. S. Basu, M. Kule, H. Rahaman, "Implementation of Symmetric Functions Using Memristive Nanocrossbar Arrays and their Application in Cryptography", Journal of Circuits, Systems and Computers, World Scientific Publishing Company, Vol.30, pp.2150223, 2021, [Impact Factor: 1.278]
- 11. N. Das, R. Sen, D. Ray, N. Banerjee, J. Halder, H. Tenhunen, B. K. Sikdar, "A trojan framework in AES core to evade state-of-the-art HT detection", Microelectronics Journal, Vol.111, 2021 [Impact Factor: 1.992]

- 12. S. Kamilya, S. Da and Biplab K Sikdar, "Simulation of non-uniform cellular automata by classical cellular automata and Its application in embedded systems", Journal of Cellular Automata, Vol.16, pp.61-86, 2021 [Impact Factor: 0.378]
- 13. B. Chakraborty, M. Dalui and B. K. Sikdar, "Synthesis of scalable single length cycle, single attractor cellular automata in linear time", Complex Systems, Vol.30, pp.415-439, 2021
- 14. M. Dalui, B. Chakraborty, N. Das and B. K. Sikdar, "NSRT diagram for identification of SACA and TACA rules in null-boundary", International Journal of Modern Physics C, Vol.33, 2022 [Impact Factor: 1.353]
- 15. S. Sarkar, B. K Sikdar and M. Saha, "Cellular automata based multi-bit stuck-at fault diagnosis for resistive memory", Frontiers of Information technology & Electronic Engineering, Vol.23, pp.1110-1125, 2022 [Impact Factor: 2.526]
- 16. S. Roy, N. Ghosh, P. Ghosh, and SK Das, "bioMCS 2.0: A distributed, energy-aware fog-based framework for data forwarding in mobile crowdsensing", Elsevier Pervasive and Mobile Computing (PMC), Vol.73, pp.101381, 2021 [Impact Factor: 3.84]
- 17. S. Roy, P. Ghosh, N. Ghosh, and SK Das, "Transcriptional regulatory network topology with applications to bio-inspired networking: a survey", ACM Computing Surveys, Vol.54, pp.1-36, 2021 [Impact Factor: 14.324]
- 18. P. Das, A. K. Das, J. Nayak, D. Pelusi and W. Ding, "Group incremental adaptive clustering based on neural network and rough set theory for crime report categorization", Neurocomputing (Elsevier), Vol.459, pp.465-480, 2021 [Impact Factor: 5.779]
- 19. P. Das, A. K.r Das, J. Nayak, D. Pelusi and W. Ding, "Incremental classifier in crime prediction using bi-objective Particle Swarm Optimization", Information Sciences (Elsevier), Vol.562, pp.279-303, 2021 [Impact Factor: 8.23]
- 20. W. Ding, S. Chakraborty, K. Mali, S. Chatterjee, J. Nayak, A. K. Das and S. Banerjee, "An Unsupervised Fuzzy Clustering Approach for Early Screening of COVID-19 from Radiological Images", IEEE Transactions on Fuzzy Systems, Vol.30, pp.2902-2914, 2021 [Impact Factor: 12.253]
- 21. S. Chattopadhyay, T. Chakraborty, K. Ghosh and A. K. Das, "Modified Lomax model: a heavy-tailed distribution for fitting large-scale real-world complex networks", Social Network Analysis and Mining (Springer), Vol.11, 2021
- 22. S. Chattopadhyay, T. Basu, A. K. Das, K. Ghosh, C.A. Murthy, "Towards effective discovery of natural communities in complex networks and implications in e-commerce", Electronic Commerce Research (Springer), Vol.21, pp.917-954, 2021, [Impact Factor: 3.462]

- 23. C. Mallick, A. K. Das, W. Ding, and J. Nayak, "Ensemble summarization of bio-medical articles integrating clustering and multi-objective evolutionary algorithms", Applied Soft Computing (Elsevier), Vol.106, 2021 [Impact Factor: 8.263]
- 24. G. Yasmin, S. Chowdhury, J. Nayak, P. Das, and A. K. Das, "Key moment extraction for designing an agglomerative clustering algorithm-based video summarization framework", Neural Computing and Applications, Vol.33, 2021, [Impact Factor: 5.102]
- 25. K. Das, B. Thumu, A. Sarkar, and A.K. Das, "Graph-Based Text Summarization and Its Application on COVID-19 Twitter Data", International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, 2Vol.30, pp.513-540, 022 [Impact Factor: 1.02]
- 26. S. Chakraborty, S. Muhuri, and D. Das, "Detection of Constant members and Overlapping Community from Dynamic Literature Network", Social Network Analysis and Mining, Vol. 11, pp. 1-16, 2021
- 27. S. Sadhukhan, and S. Chakraborty, "Evaluation of dominant loss mechanisms of PERC cells for optimization of rear passivating stacks", Journal of Surfaces and Interfaces (ELSEVIER), vol-27, 2021 [Impact Factor: 6.137]
- 28. C. Das, S. Muhuri, S. Chakraborty, and S. Chakraborty, "Security assessment for routing-based synthesis on cyberphysical MEDA-based digital microfluidic biochip", Journal of SN Applied Sciences, Vol. 3, pp. 1-19, 2021

Earth Science

- 1. B.P. Mukhopadhyay, A. Chakraborty, A. Bera, R. Saha T, "Suitability assessment of groundwater quality for irrigational use in Sagardighi block, Murshidabad district, West Bengal", Applied Water Science, Vol.12, 2022 [Impact Factor: 5.41]
- 2. S. Wadadar, B.P. Mukhopadhyay, "GIS-based landslide susceptibility zonation and comparative analysis using analytical hierarchy process and conventional weighting-based multivariate statistical methods in the Lachung River Basin, North Sikkim", Natural Hazards, Vol.113, pp.1199-1236, 2022 [Impact Factor: 3.15]
- 3. P. Chowdhury, B.P. Mukhopadhyay, A. Bera, "Hydrochemical assessment of groundwater suitability for irrigation in the north-eastern blocks of Purulia district, India using GIS and AHP techniques", Physics and Chemistry of the Earth, Vol.126, 2022 [Impact Factor: 3.31]
- 4. P. Chowdhury, B.P. Mukhopadhyay, S. Nayak, A. Bera, "Hydro-chemical characterization of groundwater and evaluation of health risk assessment for fluoride contamination areas in the eastern blocks of Purulia district, India", Environment Development and Sustainability, Vol.24, pp.11320-11347, 2021 [Impact Factor: 4.08]

- 5. S. Barua, B.P. Mukhopadhyay, A. Bera, "Integrated assessment of groundwater potential zone under agricultural dominated areas in the western part of Dakshin Dinajpur district, West Bengal, India", Arabian Journal of Geosciences, Vol.14, 2021 [Impact Factor: 1.82]
- 6. S. Barua, B.P. Mukhopadhyay, A. Bera, "Hydrochemical assessment of groundwater for irrigation suitability in the alluvial aquifers of Dakshin Dinajpur district, West Bengal, India.", Environmental Earth Sciences, Vol.80, 2021 [Impact Factor: 3.119]
- Bera, B.P. Mukhopadhyay, P. Chowdhury, A. Ghosh, S. Biswas, "Groundwater vulnerability assessment using GIS-based DRASTIC model in Nangasai River Basin, India with special emphasis on agricultural contamination", Ecotoxicology and Environmental Safety, Vol.214, pp.01-Nov, 2021 [Impact Factor: 7.129]
- 8. B. Nath, N. Choudhury and A. K. Mitra, "Observing tectono-geomorphological changes along the Dawki fault and adjoining areas of Sylhet, Bangladesh from 1980 to 2020 using Remote sensing and GIS techniques", Journal of Earth System Sciences, Vol.131, 2022 [Impact Factor: 1.91]
- 9. A. Thorie, A. Mukhopadhyay, P. Mazumdar, T. Banerjee, "Ooid diversity and Ooimuration in the Neoproterozoic Kunihar Formation, Lesser Himalaya, India", Journal of the Palaeontological Society of India, Vol.67, pp.22-31, 2022 [Impact Factor: 0.82]
- 10. P. Mazumdar, A. Mukhopadhyay, A. Thorie, T. Banerjee, S.K. Rai, "Geochemistry of Neoproterozoic Chhaossa shales, Simla Group, Lesser Himalaya: its implications on provenance and tectonics", Journal of Earth System Sciences, Vol.130, 2021 [Impact Factor: 2.04]

• Electrical Engineering

- 1. A. Kar, K. Ghosh, M. Sengupta, and B. Barman, "Analysis and design of efficient SiC-based load-resonant converter with advanced features for arc welding applications", Sadhana, Vol.46, pp.1-5, 2021 [Impact Factor: 1.48]
- 2. H. Samanta, A. Bhattacharjee, A. Das, K. Das Bhattacharya, H. Saha, "Field-Validated Communication Systems for Smart Microgrid Energy Management in a Rural Microgrid Cluster", Energies, Challenges and Opportunities in the Integration of Solar Photovoltaics in Developing Countries, Vol.14, 2021 [Impact Factor: 3.25]
- 3. D. K. Ghosh, S. Bose, G. Das, S. Acharyya, A. Nandi, S. Mukhopadhyay, A. Sengupta, "Fundamentals, Present Status and Future Perspective of TOPCon Solar Cells: A Comprehensive Review", Surfaces and Interfaces, Vol.30, pp.1-38, 2022 [Impact Factor: 6.13]
- 4. N. Dey, U. Mondal, A. Sengupta, "Periodic Disturbance Compensation of Peristaltic Pump: A State Feedback Repetitive Controller-Based Approach", Journal of The Institution of Engineers (India): Series B, Vol.103, 2022 [Impact Factor: 1.31]

- N. Roy, A. Sengupta, A. Sutradhar, "Selection of Tuning Parameter Ranges for PID Controller Design of MIMO Systems Using ETF Techniques", IETE Journal of Research, Vol.67, 2021 [Impact Factor: 2.33]
- 6. S.K. Pandey, J. Dey, and S. Banerjee, "On internal model control (IMC) of MIMO systems", IETE Journal of Research, Vol.67, 2021 [Impact Factor: 2.33]
- 7. S.K. Pandey, J.Dey and S. Banerjee, "Generalized discrete decoupling and control of MIMO systems", Asian Journal of Control, 2022 [Impact Factor: 2.444]
- 8. S. Gunturi, D. Sarkar, L. Sumi, A. De, "A Combined Graph Theory Machine Learning Strategy for Planning Optimal Radial Topology of Distribution Network", Electric Power Components and Systems, Vol.49:13-14, pp.1158-1168, 2022, [Impact Factor: 1.276]
- R. Mukherjee, A. De, "Real-time Dynamic Security Analysis of Power Systems using Strategic PMU Measurements and Decision Tree Classification", Electrical Engineering, Springer, Vol.103, pp.813 - 824, 2021 [Impact Factor: 1.83]
- 10. A. Kar, M. Sengupta, "Design, Analysis and Experimental Validation of a Variable Frequency Silicon Carbide-based Resonant-Converter for Welding Applications", Sadhana, Vol.46, 2021, [Impact Factor: 1.214]
- 11. J. Kundu, M. Sengupta, "Detailed comparative investigations on levitation prototypes of a ball and a rectangular plate of same mass using a novel analytical model and experiments", Sadhana, Vol.46, 2021, [Impact Factor: 1.214]

• Electronics and Telecommunication Engineering

- 1. A. K. Dikshit, Gourav Das, N. Mukherjee and P. Chakrabarti, "SHJ solar cells on an adequately thin c-Si wafer with domelike front and double-layer ITO nanoparticles as rear light trapping arrangements," IEEE Trans. Electron Devices, Vol. 69, pp.216-224, 2022 [Impact Factor:2.913]
- Abhishek Kumar Singh, Arun Dev Dhar Dwivedi, A. Pandey, P. Chakrabarti, "Design and implementation of an inverter and its application in ring oscillator circuits using an organic-thinfilm-transistor based on an FTM-derived channel," Semiconductor Science and Technology, Vol.37, 2021 [Impact Factor: 2.654]
- 3. A.K. Dikshit, S. Maity, N. Mukherjee, P. Chakrabarti, "Hybrid Inorganic–Organic Inverted Solar Cells with ZnO/ZnMgO Barrier Layer and Effective Organic Active Layer for Low Leakage Current, Enhanced Efficiency, and Reliability," IEEE Journal of Photovoltaics, Vol.11, pp.983-990, 2021 [Impact Factor:3.05]
- 4. Vijayakumar Devarakonda, Amritanshu Pandey, P. Chakrabarti, "Enhanced optoelectronic properties of a mercury cadmium telluride based double heterojunction photodetector for

- terahertz applications," Optik-International Journal of Light and Electron Optics, Vol.247, 2021. [Impact Factor:2.187]
- 5. A.K. Dikshit, P. Banerjee, N. Mukherjee, P. Chakrabarti, "Theoretical optimization of double dielectric back reflector layer for thin c-Si based advanced solar cells with notable enhancement in MAPD," Superlattices and Microstructures, Vol.149, 2021 [Impact Factor:2.120]
- 6. D. Saha and S. Lodha, "First-principles based simulations of electronic transmission in ReS2/WSe2 and ReS2/MoSe2 type-II vdW heterointerfaces", Scientific Reports (Nature Portfolio), Vol.11, 2021 [Impact Factor: 4.996]
- 7. S. Das, D. Mitra, and S. R. B. Chaudhuri, "Fractal loaded six element multiple-input-multiple-output antenna configuration for super wideband operation", International Journal of RF and Microwave Computer-Aided Engineering, Vol.32, pp.17, 2022 [Impact Factor: 1.98]
- 8. P. Saha, D. Mitra, and S. K. Parui, "A circularly polarized implantable rectenna for self-charging pacemaker", Journal of Electromagnetic Waves and Applications, Vol.36, pp.1576-1588, 2022 [Impact Factor: 1.87]
- 9. T. Shaw, G. Samanta, and D. Mitra, "Efficient wireless power transfer system for implantable medical devices using circular polarized antennas", IEEE Transactions on Antennas and Propagation, Vol.69, pp.4109-4122, 2021 [Impact Factor: 4.82]
- 10. S. Das, D. Mitra, and S. R. B. Chaudhuri, "Fractal loaded planar super wide band four element mimo antenna for thz applications", Nano Communication Networks, Vol.30, 2021 [Impact Factor: 2.78]
- 11. P. Saha, D. Mitra, and S. K. Parui, "Control of gain and sar for wearable antenna using amc structure", Radioengineering, Vol.30, pp.81-88, 2021 [Impact Factor: 1.24]
- 12. T. Shaw and D. Mitra, "Design of highly directive slot antenna using metamaterial structure under optimal condition", International Journal of RF and Microwave Computer-Aided Engineering, Vol.31, 2021 [Impact Factor: 2.46]
- 13. J. Halder, T. Acharya, M. Chatterjee and U. Bhattacharya, "E-S-RSM-RSA: A novel energy and spectrum efficient regenerator aware multipath based survivable RSA in offline EON", IEEE Transactions on Green Communications and Networking, Vol.5, pp.1451 1466, 2021 [Impact Factor: 3.52]
- 14. D. Bhattacharjee, T. Acharya, S. Chakravarty, "Energy efficient data gathering in IoT networks with heterogeneous traffic for remote area surveillance applications: a cross layer approach", IEEE Transactions on Green Communications and Networking, Vol.5, pp.1165 1178, 2021 [Impact Factor: 3.52]

- 15. J. Halder, T. Acharya, U. Bhattacharya, "A novel RSCA scheme for offline survivable SDM-EON with advance reservation", IEEE Transactions on Network and Service Management, Vol.19, pp.804-817, 2022 [Impact Factor: 4.75]
- 16. S. Bhattacharjee, T. Acharya, U. Bhattacharya, "Cognitive radio based spectrum sharing models for multicasting in 5G cellular networks: a survey", Computer Networks (Elsevier), Vol.208, 2022 [Impact Factor: 5.49]
- 17. S. Banerjee, S. Das Mazumdar, S. Chatterjee, S.K. Parui, "Half mode semi-hexagonal SIW antennas and arrays for cellular V2X communication", Microsystem Technologies, Vol.27, pp.3639-3651, 2021 [Impact Factor: 2.21]
- 18. S. Ballav, G.A. Sarkar, S.K. Parui, "High-selective filtering dielectric resonator antenna by integrating band-rejection resonators in Feedline", Sādhanā Journal, Vol.46, 2021 [Impact Factor: 1.40]
- 19. S. Ballav, G.A. Sarkar, S.K. Parui, "Filtering DRA Array and Its Applications in MIMO for Sub-6 GHz Band", RADIOENGINEERING, Vol.30, pp.73-80, 2021 [Impact Factor: 1.24]
- 20. Ganguly and A. Banerjee, "Precise realization of one-staged 2-D DCT using analog current mode architecture in compressed sensing front-end", Microelectronics Journal, Elsevier, Vol.115, 2021 [Impact Factor: 2.29]
- 21. D. Datta, M. Bhanja, A. Banerjee and B.N. Ray, "A systematic approach for the design of linear filters and oscillators employing tree representation", Analog Integrated Circuits and Signal Processing, Springer, Vol.108, pp.181-203, 2021 [Impact Factor: 1.32]
- 22. B. Chakraborty, N. Mandal, N. Samanta, C. RoyChaudhuri, "Competitive Impedance Spectroscopy in a Schottky-Contacted ZnO Nanorod Structure for Ultrasensitive and Specific Biosensing in a physiological Analyte", ACS Sensors, Vol.7, pp.1634-1647, 2022 [Impact Factor: 9.61]
- 23. N. Das, B. Chakraborty, C. RoyChaudhuri, "A review on nanopores based protein sensing in complex analyte", Talanta, Vol.243, pp.123368-123388, 2022 [Impact Factor: 6.55]
- 24. D. Agashe, S. Maheshwary, J.K. Pattanaik, JPrakash, P. Bhatt, S. S. Arya, S. Chatterjee, P. Kumar, P. Singh, N. Abbas, C. S. Sharma, C. Roy Chaudhuri, P. Devi, "Career challenges for young independent researchers in India", Current Science, Vol.122, pp.135-143, 2022 [Impact Factor: 1.10]
- 25. K Sinha, B. Chakraborty, S. Som Chaudhury, C. Roy Chaudhuri, SK Chattopadhyay, C. Das Mukhopadhyay, "Selective, Ultrasensitive and Rapid Detection of Serotonin by Optimized ZnO Nanorod FET Biosensor", IEEE Transactions on Nanobioscience, Vol.21, pp.65-74, 2021 [Impact Factor: 3.20]

- 26. B. Chakraborty, C. RoyChaudhuri, "Metal / Metal Oxide Modified Graphene Nanostructures for Electrical Biosensing Applications: A Review", IEEE Sensors, Vol.21, pp.17629-17642, 2021 [Impact Factor: 4.32]
- 27. N. Das, V. Damodaran, B. Chakraborty, and C. Roychaudhuri, "Experiment and FEM Analysis of Silica Nanoparticle- Based Impedance Immunosensor for Sensitivity Enhancement", IEEE Transactions on Nanobioscience, Vol.20, pp.247-255, 2021 [Impact Factor: 3.23]
- 28. A. Das, S. Bose, N. Mandal, B. Pramanick, and C. RoyChaudhuri, "HOME-Stat: a handheld potentiostat with open-access mobile-interface and extended measurement ranges", Proceedings of the Indian National Science Academy, Vol.87, pp.84-93, 2021 [Impact Factor: 0.57]
- 29. A. Chatterjee, M. Midya, L. P. Mishra, M. Mitra, "Branch line strip loaded compact printed inverted-F antenna (IFA) for penta band applications", International journal of Electronics & Communication (AUE) (Elsevier), Vol.124, pp.1 to 10, 2021, [Impact Factor: 3.169]
- 30. S. Chakraborty, N. B. Sinha, M. Mitra, "Likelihood ascent search-aided complexity improved performance massive MIMO detection in perfect and imperfect channel state information", International Journal of Communication Systems (Wiley), Vol.35, pp.1 to 23, 2022, [Impact Factor: 1.882]
- 31. A. Chatterjee, M. Midya, L. P. Mishra, M.Mitra, "Two element quad band MIMO antenna employing meandered arm printed Inverted-F Antenna", Wireless Personal Communication (Springer), Vol.126, pp.511-529, 2022, [Impact Factor: 2.017]
- 32. R. Sengupta, A. Chatterjee, M. Mitra, S. Banerjee, "FSS superstrate loaded SIW circular cavity-backed cross-shaped slot antenna for wireless applications", Journal of Electromagnetic Waves and Applications (Taylor & Francis), Vol.36, pp.2271-2288, 2022, [Impact Factor: 1.838]
- 33. A. RayChowdhury, A. Pramanik, G. C. Roy, "New approach for localization and smart data transmission inside underground mine environment," SN Applied Sciences (Springer), Vol. 3, pp. 1-12, 2021
- 34. R. Chakraborty, A. Pramanik, "DCNN-based prediction model for detection of age-related macular degeneration from color fundus images," Medical & Biological Engineering & Computing (Springer), Vol. 60, pp. 1431-1448, 2022 [Impact Factor: 3.079]

• Humanities and Social Sciences

1. S. Mukherjee, M. Roy, "The Postcolonial Nature of the Post-Soviet Space: a reading of the cultural condition of Albania", Balkanistic Forum, Vol.30, pp.369-385, 2021, [SCIE/SCOPUS]

- 2. S. Mukherjee, and M. Roy, "Spectres of Memory in the Works of Ismail Kadare", University of Bucharest Review: Literary and Cultural Studies Series, Vol.11, pp.28-40, 2021
- 3. A. Das, and M. Roy, "Globalization and Transnational Capitalism Giving Rise to a New Colonial Discourse: "A Postcolonial Critique", Journal of the Maharaja Sayajirao University of Baroda, Vol.55, 2021
- 4. S. Mukherjee, and M. Roy, "Eurocentrism and Postcoloniality In The Works Of Ismail Kadare",

 Journal of the Maharaja Sayajirao University of Baroda, Vol.55, pp.127-131, 2021
- 5. A. Das, and M. Roy, "Globalization Becoming Instrumental in Re-thinking the Global City: A Postcolonial Reading", NEW LITERARIA: An International Journal of Interdisciplinary Studies in Humanities, Vol.3, pp.16-22, 2021
- 6. S. Bandyopadhyay, "Facing the Mirror: Questioning the Determinism in Anthropocene", JU Journal of Sociology, Vol.11, pp.16-21, 2021
- 7. M. Ghosh Sarbadhikary, "The Purulia Chhau: Choreographing Identity", Book of Abstracts for AISC Journal of ISS, pp.103-104, 2021
- 8. M. Ghosh Sarbadhikary, "How Ben Jonson Moves from the Stage to the Page: An Introduction." Colloquium, Volume 6, Journal of the Arts Section, BESC.ISSN 2350-1251, pp.77-87, 2021

• Information Technology

- S. Nath and R. Naskar, "Automated Image Splicing Detection using Deep CNN Learned Features and ANN based Classifier", Signal, Image and Video Processing, Springer, Vol.15, pp.1601-1608, 2021 [Impact Factor: 1.583]
- 2. J. Bakas, R. Naskar, M. Nappi and S. Bakshi, "Object based Forgery Detection in Surveillance Video using Capsule Network", Journal of Ambient Intelligence and Humanized Computing, Springer, Vol.12, 2021 [Impact Factor: 3.662]
- 3. D. K. Maity, S. K. Roy, and C. Giri, "A cost-effective repair scheme for clustered TSV defects in 3D ICs", Journal of Microelectronics Reliability, Vol.129, pp.01-Oct, 2022 [Impact Factor: 1.42]
- 4. P. Navdeti, I. Banerjee and C. Giri, "Privacy Preservation and Secure Data Sharing Scheme in Fog Based Vehicular Ad-Hoc Network", Journal of Infromation Security and Applications, Elesevier, Vol.63, 2021 [Impact Factor: 4.96]
- S. Das, S. Bhwomik and C. Giri, "Cross-Layer MAC Protocol for Semantic Wireless Sensor Network", Wireless Personal Communication, Springer, Vol.120, pp.3135-3151, 2021 [Impact Factor: 2.017]

- 6. A. Bose, SP. Maity, "Secure sparse watermarking on DWT-SVD for digital images", Journal of Information Security and Applications, Vol.68, pp.103255, 2022 [Impact Factor: 4.96]
- 7. A. Paul, P. Bhattacharya, SP. Maity, "Histogram modification in adaptive bi-histogram equalization for contrast enhancement on digital images", Optik, Vol.259, 2022 [Impact Factor: 2.84]
- 8. T. Bhattacharjee, HK. Maity, SP. Maity, "On FPGA implementation in medical secret image sharing with data hiding", Multimedia Tools and Applications, Vol.81, pp.18755-18781, 2022, [Impact Factor: 2.577]
- S. Ghosh, T. Acharya, S. P. Maity, "Outage analysis in SWIPT enabled cooperative AF/DF relay assisted Two-Way Spectrum Sharing Communication", IEEE Transactions on Cognitive Communications and Networking, Vol.8, pp.1434-1443, 2022 [Impact Factor: 6.35]
- 10. A. Paul, SP. Maity, "Reinforcement Learning Based Q-Routing: Performance Evaluation on Cognitive Radio Network Topologies", Wireless Personal Communications, Vol.125, pp.1425-1441, 2022 [Impact Factor: 2.01]
- 11. SR. Islam, SP. Maity, AK. Ray, M Mandal, "Deep learning on compressed sensing measurements in pneumonia detection", International Journal of Imaging Systems and Technology, Vol.32, pp.41-54, 2022 [Impact Factor: 2.177]
- 12. A. Paul, S. Kandar, B.C.Dhara, "Boolean operation based lossless threshold secret image sharing,", Multimedia Tools and Applications, Vol.81, pp.14355-14378, 2022 [Impact Factor: 2.75]
- 13. A. Paul, S. Kandar, "Simultaneous encryption of multiple images using pseudo-random sequences generated by modified Newton-Raphson technique", Multimedia Tools and Applications, Vol.52, pp.10979-10998, 2022 [Impact Factor: 2.75]
- 14. A. Paul, B.C. Dhara, S. Kandar, "Image encryption using permutation generated by modified Regula-Falsi method", Applied Intelligence, 2021 [Impact Factor: 5.019]
- 15. P. Biswas, T. Samanta, "A Method for Fault Detection in Wireless Sensor Network Based on Pearson's Correlation Coefficient and Support Vector Machine Classification", Wireless Personal communication, Vol.123, pp.2649-2664, 2022 [Impact Factor: 2.01]
- 16. P. Chanak, I. Banerjee, "Internet-of-Things-Enabled SmartVillages: An Overview", IEEE Consumer Electronics Magazine, Vol.10, 2021 [Impact Factor: 4.13]
- 17. N. Ghosh, I. Banerjee, "IoT-based freezing of gait detection using grey relational analysis.",
 Internet of Things, Vol.13, 2021 [Impact Factor: 10.23]
- 18. S. Mukherjee, K. Bhattacharjee, S. Das, "Clustering Using Cyclic Spaces of Reversible Cellular Automata", Complex Systems, Vol.30, pp.205-237, 2021

- 19. S. Adak, S. Mukherjee, S. Das, "Reachability problem in non-uniform cellular automata", Information Sciences, Vol.543, pp.72-84, 2021 [Impact Factor: 8.233]
- 20. S. Adak, S. Das, "(Imperfect) strategies to generate primitive polynomials over GF(2)", Theoretical Computer Science, Vol.872, pp.79-96, 2021 [Impact Factor: 1.002]
- 21. S. Mukherjee, K. Bhattacharjee, S. Das, "Reversible Cellular Automata: A Natural Clustering Technique", Complex Systems, Vol.16, pp.1-38, 2021
- 22. S. Mukherjee, K. Bhattacharjee, S. Das, "Reversible Cellular Automata: A Natural Clustering Technique", Journal of Cellular Automata, 2021 [Impact Factor: 0.34]
- 23. S. Das, M. Chakraborty, "Formal Logic of Cellular Automata", Complex Systems, Vol.30, pp.187-203, 2021
- 24. D. Sengupta, P. Gupta, A. Biswas, "A survey on mutual information based medical image registration algorithms", Neurocomputing 486: 174-188 (2022), Vol.486, pp.174-188, 2022 [Impact Factor: 5.779]
- 25. S. Dutta, T. Banerjee, N. Dutta Roy, B. Chowdhury, A. Biswas, "Development of a BCI-based gaming application to enhance cognitive control in psychiatric disorders", Innovations in Systems and Software Engineering, Vol.17, pp.99-107, 2021
- 26. D. Sengupta, A. Biswas, P. Gupta, "Non-linear weight adjustment in adaptive gamma correction for image contrast enhancement", Multimedia Tools and Applications, Vol.8o, pp.3835-3862, 2021 [Impact Factor: 2.57]
- 27. S. Das, N. Dutta Roy, A. Biswas, S. K. Saha, "A novel methodology for vessel extraction from retinal fundus image and detection of neovascularization", Multimedia Tools and Applications, Vol.8o, pp.4093-4110, 2021 [Impact Factor: 2.57]
- 28. S. Mondal, A. Biswas, A. Sarkar, "Finding the largest empty cuboid inside a 3D digital object", Multimedia Tools and Applications, Vol.8o, pp.35521-35541, 2021 [Impact Factor: 2.57]
- 29. S. Majumdar, SK. Nandi, S. Ghosal, B. Ghosh, W. Mallik, ND. Roy, A. Biswas, "Deep learning-based potential ligand prediction framework for COVID-19 with drug "target interaction model", Cognitive Computation, 2021 [Impact Factor: 4.890]
- 30. M. Parai, S. Srimani, K. Ghosh, and H. Rahaman, "Multi-source data fusion technique for parametric fault diagnosis in analog circuits", Integration, the VLSI Journal, Vol.84, pp.92-101, 2022 [Impact Factor: 1.64]
- 31. R. Das, C. Bandyopadhyay, H. Rahaman, "An improved synthesis technique for optical circuits using MIG and XMG", Microelectronics Journal, Vol.120, 2022 [Impact Factor: 1.992]

- 32. S. Ghosh, Y.h ateja, JR. Palathinkal, H. Rahman, "Hardware Design with Real-Time Implementation for Security of Medical Images and EPMR", Circuits, Systems, and Signal Processing, Vol.41, pp.867-891, 2022 [Impact Factor: 2.311]
- 33. A. Chakraborty, PS. Gupta, R. Singh, R. Das, H. Rahaman, "BDD-based synthesis approach for in-memory logic realization utilizing Memristor Aided loGIC (MAGIC)", Integration, Vol.81, pp.254-267 [Impact Factor: 1.345]
- 34. L. Biswal, B. Mondal, H. Rahaman, "Fault tolerant quantum implementation of conventional decoder logic with enable input", IET Circuits, Devices & Systems, Vol.15, pp.415-423, 2021 [Impact Factor: 1.62]
- 35. M. Kumari, NK. Singh, M. Sahoo, H. Rahaman, "2-D Analytical Modeling and Simulation of Dual Material, Double Gate, Gate Stack Engineered, Junctionless MOSFET based Biosensor with Enhanced Sensitivity", Silicon, Vol.14, pp.4473-4484, 2021 [Impact Factor: 2.94]
- 36. S. Mazumder, D. Majumder, P. Ghosal, "CARD Predictive Model: COVID-19 in India", IEEE Technology Policy and Ethics, Vol.6, pp.01-May, 2021
- 37. D. Majumder, S. Mazumder, P. Ghosal, "CARD Predictive Modeling and SEI Formulation: COVID-19 Statistics in India", Journal of The Institution of Engineers (India): Series B, Vol.102, pp.1167-1176, 2021,
- 38. S. Paul, N. Chatterjee, P. Ghosal, "Dynamic task allocation and scheduling with contention-awareness for Network-on-Chip based multicore systems", Journal of Systems Architecture, Vol.115, pp.102020, 2021, [Impact Factor: 5.839]

Mathematics

- D. Jana, G.P. Samanta, A. Mondal, S. Mondal, A.K. Pal, D. Manna, "Explosive tritrophic food chain model with herd behaviour of prey and finite time blow-up of the top predator", International Journal of Dynamical Systems and Differential Equations, Vol.12, pp.36-56, 2022 [Impact Factor: 0.46]
- 2. B. K. Das, D. Sahoo, G.P. Samanta, "Impact of fear in a delay-induced predator "prey system with intraspecific competition within predator species", Mathematics and Computers in Simulation, Vol.191, pp.134-156, 2022 [Impact Factor: 3.601]
- 3. S. Mondal, G. Samanta, "A comparison study of predator prey system in deterministic and stochastic environments influenced by fear and its carry-over effects", The European Physical Journal Plus, Vol.137, pp.70, 2021 [Impact Factor: 3.91]
- 4. A. Mondal, A.K. Pal, G.P. Samanta, "Stability analysis of a complex four species food-web model", Filomat, Vol.36, pp.99 123, 2022 [Impact Factor: 0.84]

- 5. A. Mondal, A.K. Pal, P. Dolai, G.P. Samanta, "A system of two competitive prey species in presence of predator under the influence of toxic substances", Filomat, Vol.36, pp.361-385, 2022 [Impact Factor: 0.84]
- 6. S. Majee, S. Adak, S. Jana, M. Mandal and T. K. Kar, "Complex dynamics of a fractional-order SIR system in the context of COVID-19", Journal of Applied Mathematics and Computing, 2022 [Impact Factor: 2.196]
- 7. S. Jana, A. Khatua, M. Mandal and T. K. Kar, "Dynamics of a prey-predator type ecological model in relevance to pest control", International Journal of Modelling and Simulation, Vol.42, pp.1049-1062, 2021
- 8. M. Mandal, S. Jana, U. K. Pahari and T. K. Kar, "Optimal Control and Stability Analysis of Malaria Disease: A Model Based Approach", Journal of Applied Nonlinear Dynamics, Vol.10, pp.775-790, 2021
- 9. P. Paul, E. Das and T. K. Kar, "Reactivity and recovery in an exploited one prey two predators system at equilibrium", The European Physical Journal Plus, Vol.136, 2021 [Impact Factor: 3.91]
- 10. M. Mandal, S. Jana, S. K. Nandi and T. K. Kar, "A Study on Effects of Biotic Resources on a Prey-Predator Population", Discontinuity, Nonlinearity, and Complexity, Vol.10, pp.499-522, 2021
- 11. M. Rahaman, S. P. Mondal, S. Alam, N.A. Khan, A. Biswas, "Interpretation of exact solution for fuzzy fractional non-homogeneous differential equation under the Riemann Liouville sense and its application on the inventory management control problem", Granular Computing, Vol.6, pp.953-976, 2021
- 12. A. Mahata, S. N. Matia, B. Roy, S. Alam, H. Sinha, "The behaviour of logistic equation in fuzzy environment: fuzzy differential equation approach", International Journal of Hybrid Intelligence, Vol.2, pp.26-46, 2021, [Others]
- 13. M. Rahaman, S. P. Mondal, E. A. Algehyne, A. Biswas, S. Alam, "A method for solving linear difference equation in Gaussian fuzzy environments", Granular Computing, Vol.7, pp.63-76, 2022
- 14. M. Rahaman, S.P. Mondal, S. Alam, A. Goswami, "Synergetic study of inventory management problem in uncertain environment based on memory and learning effects", Sādhanā Journal, Vol.46, pp.1-20, 2021, [Impact factor: 1.214]
- 15. T. S Haque, A. Chakraborty, S.P Mondal and S. Alam, "A New Exponential Operational Law for Trapezoidal Neutrosophic Number and Pollution in Megacities related MCGDM Problem", Journal of Ambient Intelligence and Humanized Computing, 2021 [Impact Factor: 7.10]
- 16. A. Chakraborty, S. P Mondal, A. Mahata, S. Alam, "Different Linear and Non-linear Form of Trapezoidal Neutrosophic Numbers, De-Neutrosophication Techniques and its Application in

- Time-Cost Optimization Technique, Sequencing Problem", Rairo Operations Research, Vol.55, pp.97-118, 2021, [Impact factor: 2.526]
- 17. A. Mahata, S. P. Mondal, B. Roy, S. Alam, "Study of two species prey-predator model in imprecise environment with MSY policy under different harvesting scenario", Environment, Development and Sustainability, Vol.23, pp.14908-14932, 2021, [Impact factor: 4.080]
- 18. S. Das P. Das and P. Das, "Optimal control of behaviour and treatment in a Nonautonomous SIR Model in a nonautonomous SIR model", Int. J. of Dynamical Systems and Differential Equations, Vol.11, pp.108-130, 2021 [Impact Factor: 0.46]
- 19. P. Das, S. Das, P. Das, F. A.Rihan, M. Uzuntarlac and D. Ghosh, "Optimal control strategy for cancer remission using combinatorial therapy: A mathematical model-based approach", Chaos, Solitons & Fractals, Vol.145, 2021 [Impact Factor: 9.922]
- 20. P. Das, R. K. Upadhyay, A. K Misra, F. A Rihan, P. Das and D. Ghosh, "Mathematical model of COVID-19 with comorbidity and controlling using non-pharmaceutical interventions and vaccination", Nonlinear dynamics, Vol.106, pp.1213-1227, 2021 [Impact Factor: 5.74]
- 21. R. Banerjee, P. Das and D. Mukherjee, "Effects of fear and anti-predator response in a discrete system with delay", Discrete & Continuous Dynamical Systems B, Vol.22, pp.3643-3661, 2021 [Impact Factor: 1.497]
- 22. S. Das, S. Biswas, R. Banerjee and P. Das, "Role of fear factor in a two-prey one-predator model: comparison between crisp and fuzzy environment", International Journal of General Systems, Vol.50, pp.815-847, 2021 [Impact Factor: 2.435]
- 23. M. Ghosh, S. Das and P. Das, "Dynamics and control of delayed rumor propagation through social networks", Journal of Applied Mathematics and Computing, Vol.68. pp.3011-3040, 2022 [Impact Factor: 2.19]
- 24. S. Das and P. Das, "Coastal shrimp aquaculture and agriculture: a mathematical model on soil salinity", Modeling Earth Systems and Environment, Vol.8, 2022 [Impact Factor: 0.71]
- 25. B. Singh and S. Pal Sarkar, "State-space approach on two-temperature three-phase-lag thermoelastic infinite medium with a spherical cavity due to memory dependent derivative", Archive of Applied Mechanics, Vol.91, pp.3273-3290, 2021 [Impact Factor: 2.467]
- 26. S. Biswas, S. Moi and S. Pal Sarkar, "Study of interval type-2 fuzzy singular integro-differential equation by using collocation method in weighted space", New Mathematics and Natural Computation World Scientific, Vol.18, pp.113-145, 2022
- 27. S. Mandal and S. Pal (Sarkar), "On piezoelectric effect based on Green-Lindsay theory of thermoelasticity", Waves in Random and Complex Media, Vol.31, 2021 [Impact Factor: 4.85]

- 28. S. Biswas, S. Moi and S. Pal Sarkar, "Numerical solution of fuzzy Fredholm integro-differential", Computational and Applied Mathematics, Vol.40, 2021 [Impact Factor: 2.998]
- 29. S. Biswas, S. Moi and S. Pal Sarkar, "Neutrosophic Riemann integration and its properties", Soft Computing, Vol.25, pp.13987-13999, 2021 [Impact Factor: 3.732]
- 30. S. Mandal, M. Middya and S. Pal (Sarkar), "Two temperature generalized thermoelasticity involving memory-dependent derivative under fuzzy environment", Waves in Random and Complex Media, Vol.31, 2021 [Impact Factor: 4.853]
- 31. B. Singh, S. Pal (Sarkar) and K. Barman, "Modeling of memory dependent derivative under three phase lag in generalised thermo-viscoelasticity", International Journal of Applied and Computational Mathematics, Vol.7, 2021

• Mechanical Engineering

- P. Das, N. Khutia, P. P. Dey, P. Arora, S.K. Gupta, "Ratcheting and stress relaxation of SA₃₃₃ Gr.
 carbon steel samples under uniaxial multistep strain-controlled condition", Journal of the Brazilian Society of Mechanical Sciences and Engineering, Vol.43, 2021 [Impact Factor: 2.361]
- 2. N. G. Roy, D. Mondal, P. P. Dey, M. Ghosh, "Optimization of electrical process parameters of WEDM on ECAP Al₇o₇5 alloys considering Radial Overcut (ROC) as output response", Materials Today: Proceedings, Vol.62, pp.6004-6008, 2022 [Impact Factor: 1.46],
- 3. S. Mandal, S. Chakraborty, P. P. Dey, "A study of mechanical properties and WEDM machinability of spark plasma sintered ZrB2B4C ceramic composites", Micron, Vol.153, 2021 [Impact Factor: 2.38]
- 4. P. K. Kundu, S. Chatterjee, "Nonlinear feedback self-excitation of modal oscillations in a class of under-actuated two degrees-of-freedom mechanical systems", International Journal of Non-Linear Mechanics, Vol.135, 2021 [Impact Factor: 3.33]
- 5. P. K. Sahoo, S. Chatterjee, "High-frequency vibrational control of principal parametric resonance of a nonlinear cantilever beam: Theory and experiment", Journal of Sound and Vibration, Vol. 505, pp.116-138, 2021 [Impact Factor: 4.76]
- 6. B. Patel, P. K. Kundu, S. Chatterjee, "Nonlinear feedback anti-control of limit cycle and chaos in a mechanical oscillator: theory and experiment", Nonlinear Dynamics, Vol.104, pp.3223-3246, 2021 [Impact Factor: 5.741]
- J. Mondal, S. Chatterjee, "Controlling self-excited vibration of a nonlinear beam by nonlinear resonant velocity feedback with time-delay", International Journal of Non-Linear Mechanics, Vol.131, 2021 [Impact Factor: 3.33]

- 8. P. K. Sahoo, S. Chatterjee, "Nonlinear dynamics of vortex-induced vibration of a nonlinear beam under high-frequency excitation", International Journal of Non-Linear Mechanics, Vol.129, 2021 [Impact Factor: 3.33]
- g. C. Mandal, A. Ganguly, "Thermo-economic analysis of two stage desiccant supported greenhouse cooling system for Orchid cultivation in the tropical and sub-tropical region", Science and Technology for the Built Environment (ASHRAE), Vol.28, pp.1237-1254, 2022 [Impact Factor: 2.094]
- 10. S. Paul, S. Seal, S. Lanjewar, T. Saha and A. Ganguly, "Performance and Economic Analysis of a Solar Regenerated Liquid Desiccant Room Air Conditioning System using Eco-Friendly Desiccants", International Journal of Air-Conditioning and Refrigeration, Vol.29, 2021
- 11. R. K. De and A. Ganguly, "Enviro-economic analysis of a solar assisted double-effect vapour absorption system based cold storage", International Journal of Ambient Energy, Vol.42, 2021
- 12. R. K. De and A. Ganguly, "Modeling and analysis of a solar thermal-photovoltaic-hydrogen-based hybrid power system for running a standalone cold storage", Journal of Cleaner Production, Vol.293, 2021 [Impact Factor: 11.072]
- 13. S. Patil and A. Ganguly, "Modeling and simulation of series parallel hybrid vehicle", IOP Conference Series-Materials Science and Engineering, Vol. 1080, 2021
- 14. C. Mandal and A. Ganguly, "Thermal model development of a biomass regenerated desiccant supported greenhouse cooling for Orchid cultivation", IOP Conference Series-Materials Science and Engineering, Vol.1080, 2021
- 15. S. Ghosh and A. Ganguly, "Development of a thermal model of a solar powered vapour absorption refrigeration supported greenhouse for strawberry cultivation", IOP Conference Series-Material Science and Engineering, Vol.1080, 2021
- 16. A. Talapatra and D. Datta, "Estimation of improvement in elastic moduli for functionalised defective graphene-based thermoplastic polyurethane nanocomposites: a molecular dynamics approach", Molecular Simulation, Vol.47, pp.602-618, 2021 [Impact Factor: 2.346]
- 17. S. Mondal and D. Datta, "Real-time ultrasonic monitoring of the vulcanization process in nitrile rubbers", Russian Journal of Nondestructive Testing, Vol.57, pp.1072-1081, 2021 [Impact Factor: 0.68]
- 18. K. Biswas and D. Datta, "Numerical simulation of ballistic impact on multilayer ceramic backed fibre reinforced composite target plate", Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, Vol.236, pp.1527-1540, 2022 [Impact Factor: 2.66]

- 19. V. Kumar and S.C. Mondal, "Cutting performance of Ni-W-Cr-B-Si hardfaced turning tool insert", Silicon, Vo.14, pp.4035-4044, 2021 [Impact Factor: 2.941]
- 20. R. K. Ghadai, S. Das, K Kalita, I. Shivakotia, S. C. Mondal, B. P. Swain, "Effect of nitrogen (N2) flow rate over the tribological, structural and mechanical properties diamond-like carbon (DLC) thin film", Materials Chemistry and Physics: Elsevier publication, Vol.260, 2021 [Impact Factor: 4.778]
- 21. P. Mandal, and S. C. Mondal, "Multi-objective optimization of Cu-MWCNT composite electrode in electro discharge machining using MOPSO-TOPSIS", Measurement : Elsevier publication, Vol.169, 2021 [Impact Factor: 5.131]
- 22. P. Mandal, and S. C. Mondal, "Performance analysis of copper-based MWCNT composite coated 316L SS tool in Electro Discharge Machining", Machining Science and Technology: Taylor & Francis, Vol.25, pp.422-437, 2021 [Impact Factor: 2.154]
- 23. S. Chowdhury, A. Anand, A. Singh, B. Pal, "Evaluation of mechanical properties of Ti-25Nb BCC porous cell structure and their association with structure porosity: a combined finite element analysis and analytical approach for orthopedic application", Journal of Engineering in Medicine, Proc. IMechE (Part: H), Vol.235, pp.827-837, 2021 [Impact Factor: 1.76]
- 24. P. Rakesh and B. Pal, "Finite element analysis of Ti6Al₄V porous structures for low-stiff hip implant application", Int. J. Simul. Multidisci. Des. Optim, Vol.12, pp.01-Sep, 2021
- 25. S. Ghosh, R. Roy and B. K. Mandal, "Comparative study on the thermodynamic performances of a two-stage vapor compression refrigeration system using refrigerants R125 and R143a", Invertis Journal of Science & Technology, Vol.14, pp.105-113, 2021,
- 26. Ranjan, H R, Saha, S K, "Hydro-thermal characteristics of laminar flow through a square duct having transverse ribs and helical screw-tape inserts", Int. Comm. Heat Mass Transfer, Vol.130, 2022 [Impact Factor: 6.78]
- 27. S. Paul, S. Bhattacharjee, S. K. Acharyya, P. Sahoo, "Study of Weibull parameters at different loading rates for 20MnMoNi55 steel using Beremin model", Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, Vol.236, pp.6728 6739, 2022 [Impact Factor: 1.75]
- 28. M. Rana, S. K. Karmakar, B. Pal, P. Datta, A. Roychowdhury and A.Bandyopadhyay, "Design and manufacturing of biomimetic porous metal implants", Journal of Materials Research, Vol.36, pp.3952-3962, 2021 [Impact Factor: 2.91]

• Metallurgy & Materials Engineering

- B. Krishna, A. Chaturvedi, N. Mishra and K. Das, "Quasi-static and dynamic nanomechanical characterization of PMMA/ZnO nanocomposite thick films synthesized by ultrasonication and spin-coating", Polymers and Polymer Composites, Vol.29, pp.S229 - S238, 2021 [Impact Factor: 1.84]
- 2. N. Mishra and K. Das, "A Comparative Study of Incremental Self Consistent And Eshelby-Mori-Tanka Models For Estimating Electro-Elastic Properties Of Piezoelectric Polymer Composite With Orthotropic Matrix", Mechanics of Composite Materials, 2022 [Impact Factor: 1.33]
- 3. H. Mohammadi, A.R. Eivani, S.H.Seyedein, M. Ghosh, H.R. Jafariana, "An investigation of hot deformation behavior of Zn22Al alloy and development of its processing maps during isothermal compression", Journal of Materials Research and Technology, Vol.14, pp.507-520, 2021 [Impact Factor: 6.26]
- 4. K. Das, A. Ghosh, A. Bhattacharya, H. Lanjewar, J. Dutta Majumdar, M. Ghosh, "Effect of beam current on the microstructure, crystallographic texture and mechanical properties of electron beam welded high purity niobium", Materials Characterization, Vol.179, pp.111318, 2021 [Impact Factor: 4.53]
- 5. S. Saha, M. Ghosh, A. K. Pramanick, C. Mondal, J. Maity, "Attainment of high specific hardness and specific modulus in spark plasma sintered aluminium-copper-silicon carbide-titanium carbide hybrid composite", Materials Science and Engineering Technology, Vol.52, pp.965-981, 2021 [Impact Factor: 1.03]
- 6. S. Saha, M. Ghosh, A. K. Pramanick, C. Mondal, J. Maity, "Microstructure and Mechanical Properties of Al/Cup/SiCp/TiCp-Based Hybrid Composites Fabricated by Spark Plasma Sintering", Journal of Materials Engineering and Performance, Vol.31, pp.424-428, 2021 [Impact Factor: 2.036]
- 7. P. P Dey, P. Modak, D. Chakrabarti, P. S Banerjee, M. Ghosh, "A Study on the Phase Formation and Physical Characteristics of Hot-Dip Aluminized Coating at 750°C", Metallography, Microstructure, and Analysis, Vol.10, pp.823-838, 2021
- 8. M. Howeyze, A.R. Eivani, M. Ghosh, H.R. Jafarian, "Effects of annealing temperature on microstructure and mechanical behavior of conventionally and severely deformed Fe24Ni steel by accumulative roll bonding", Journal of Materials Research and Technology, Vol.14, pp.2428-2440, 2021 [Impact Factor: 6.26]
- 9. B. Ghosh, H. Das, A. Samanta, J. Dutta Majumdar, M. Ghosh, "Influence of tool rotational speed on the evolution of microstructure and mechanical properties of precipitation-hardened

- Aluminium 6061 butt joint during friction stir welding", Engineering Research Express, Vol.4, 2022
- 10. L. Zhang, B. Onat, G. Dusson, G. Anand, R. J. Maurer, C. Ortner, J. R. Kermode, "Equivariant analytical mapping of first principles Hamiltonians to accurate and transferable materials models", npj COmputational Materials, Vol.8, 2022 [Impact Factor: 12.256]
- 11. I. Dey, R. Saha and S. K. Ghosh, "Effect of low-temperature isothermal holding on microstructure and mechanical properties of hot rolled high carbon Nb microalloyed steel plate", International Journal of Materials and Product Technology, Vol.62, pp.111-125, 2021 [Impact Factor: 0.74]
- 12. I. Dey and S. K. Ghosh, "Study on microstructure and mechanical properties of two stir cast 6061-Al metal matrix composites", Indian Foundry Journal, Vol.67, pp.24-32, 2021
- 13. D. Roy, S. Chakraborty, AK. Gupta, A. Basu Mallick, R. O. Scattergood, C. C. Koch, "Synergistic effect of Nb and Zr additions on the structure-property relationships of nanocrystalline Cu processed by mechanical alloying and hot pressing", Journal of Alloys and Compounds, Vol.854, pp.157174, 2021 [Impact Factor: 6.371]
- 14. R. Majumder, T. Pal, A Basu Mallick, C Das Mukhopadhyay, "Functionalized carbon nano onion as a novel drug delivery system for brain targeting", Journal of Drug Delivery Science and Technology, Vol.63, pp.102414, 2021 [Impact Factor: 5.062]
- 15. S.K. Basantia, A. Bhattacharya, N. Khutia and D. Das, "Plastic behavior of ferrite pearlite, ferrite bainite and ferrite martensite steels: experiments and micromechanical modelling", Metals and Materials International, Vol.27, pp.1025-1043, 2021 [Impact Factor: 3.451]
- 16. A.P. Sekhar and D. Das, "Two-Body Abrasive Wear Behavior and Its Correlation with Mechanical Properties of Aged AA6063 Alloy", ASME Journal of Tribology, Vol.144, pp.071703 (16 pages), 2021 [Impact Factor: 2.04]
- 17. S. Roy, D. Das and T.K. Roy, "Two stage sintering behaviour of Er2O₃ doped high performance ZnO varistors", Journal of the European Ceramic Society, Vol.41, pp.5184-5192, 2021 [Impact Factor: 6.36]
- 18. S.K. Basantia, A. Bhattacharya, N. Khutia and D. Das, "Influence of microstructural parameters on nanohardness of various dual-phase steels: Experiment, Finite Element simulation and Statistical analysis", Materialstoday Communications, Vol.30, pp.103125, 2022 [Impact Factor: 3.66]

Mining Engineering

- 1. K. Ghosal, S. Das Bhattacharya, P. K. Paul, "Estimation of aboveground forest biomass in Himalayan region of West Bengal, India using IRS P6 LISS IV data", Arabian Journal of Geosciences, Vol.15, 2022, [Impact Factor: 1.827]
- 2. M. Periyasamy, S. Sain, U. Sengupta, M. Mandal, S. Mukhopadhyay, A. Kar, "Bandgap tuning of photo Fenton-like Fe₃o₄/C catalyst through oxygen vacancies for advanced visible light photocatalysis", Material Advances, Vol.2, pp.4843-4858, 2021 [Impact Factor: 3.10]
- 3. T. Chowdhury, S. Sinha, S. K. Roy, "Analysis of mine haul road performance using artificial neural network", Journal of The Institution of Engineers (India): Series D, Vol.102, pp.1, 2021
- 4. T. Chowdhury, S. Sinha, S. K. Roy, "Artificial neural network and fuzzy rule based two-stage system for estimating mine haul road performance of Mines", Metals and Fuels, Vol.69, 2021
- 5. G. Samanta, T. Dey, B. Samanta and S. Sinha, "Stope boundary optimization for an underground copper deposit using mixed integer linear programming based algorithm", Journal of Mines, Metals & Fuels, Vol.69, 2021
- 6. R. Banerjee, S. Sen, S. K. Roy, S. Sinha and M. Dutta, "Estimation of external cost of congestion: a hypothetical case study from kolkata", Urban India, pp.102, 2021

Physics

- S. Jana and S. Mitra, "Compositional dependence of the luminescence properties of Nd₃+ ions in lead phosphate glasses: The efficient laser active materials", Optics and Laser Technology, Vol.141, pp.107123, 2021 [Impact Factor: 4.93]
- 2. A. Maity and S. Jana, "Excitation dependent tunable emission colour of Eu₃+-Tb₃+ co-doped titanium zinc sodium phosphate glass", Physica B: Physics of Condensed Matter, Vol.619, pp.413186, 2021 [Impact Factor: 2.98]
- 3. A. Maity, S. Jana and S. Mitra, "Luminescence studies on varied concentration of Eu₃+ doped SrO-ZnO-PbO-P₂O₅ glasses for photonic applications", Materials Research Bulletin, Vol.146, pp.111595, 2022 [Impact Factor: 5.6]
- 4. A. B. Siddique, S. M. Hossain, A. K. Pramanick, M. Ray, "Excitation dependence and independence of photoluminescence in carbon dots and graphene quantum dots: insights into the mechanism of emission", Nanoscale, Vol.13, pp.16662-16671, 2021 [Impact Factor: 8.307]
- 5. S. Biswas, A. Nandi, U. Ghanta, B. Jana, S. Mukhopadhyay, H. Saha, S. M. Hossain, "Hot-carrier radiative recombination through phonon confinement in silicon nanocrystals embedded in colloidal xerogel matrix", Journal of Applied Physics, Vol.130, pp.33102, 2021 [Impact Factor: 2.87]

- 6. D. Basu, K. Sen, S. M. Hossain, J. Das, "Influence of pore diameter on physical and sensing properties of free-standing Chitosan-Silica Nanocomposite membrane", Journal of Porous Materials, Vol.28, pp.1595-1607, 2021 [Impact Factor: 2.52]
- 7. K. Sen, D. Basu, S. M. Hossain, J. Das, "Calcium selective optical sensor based on calmodulin functionalized porous silicon", Applied Physics A, Vol.127, pp.01-Aug, 2021 [Impact Factor: 2.983]
- 8. B. Das, S. M.Hossain, A. Nandi, D. Samanta, A. K. Pramanick, S. O. M. Chapa, M. Ray, "Spectral conversion by silicon nanocrystal dispersed gel glass: efficiency enhancement of silicon solar cell", Journal of Physics D: Applied Physics, Vol.55, pp.25106, 2021 [Impact Factor: 3.409]
- g. A. B. Siddique, K. Mukhuti, S. Choudhury, A. K. Pramanick, S. M. Hossain, M. Ray, "Critical investigation of up-conversion and dual emission from nitrogen functionalized graphene quantum dots", Journal of Luminescence, Vol.244, pp.118763, 2022 [Impact Factor: 4.171]
- 10. M. Rakshit, D. Jana, D. Banerjee, "General strategies to improve thermoelectric performance with an emphasis on tin and germanium chalcogenides as thermoelectric materials", J. Mater. Chem. A, Vol.10, pp.6872-6926, 2022 [Impact Factor: 14.51]
- 11. Sk. T. Ahamed, C. Kulsi, Kirti, D. Banerjee, D. N. Srivastava, and A. Mondal, "Synthesis of multifunctional CdSe and Pd quantum dot decorated CdSe thin films for photocatalytic, electrocatalytic and thermoelectric applications", Surfaces and Interfaces, Vol.25, pp.101149, 2021 [Impact Factor: 6.137]
- 12. A. Adhikari, D. Pramanik, S. Sarkar, M. Saha Sarkar, A. Bisoi, S. Ray, S. Rajbanshi, S. Saha, J. Sethi, B. S. Naidu, R. Donthi, V. Nanal, R. Palit, Experimental evidences of shape co-existence in 154Ho", Nucl. Phys. A., Vol.1027, pp.122495, 2022 [Impact Factor: 1.68]
- 13. Y. Sapkota, R. Rahaman, Abhijit Bisoi, A. Adhikari, A. Gupta, A. Das, H. Ghosh, S. Sarkar, D. Pramanik, S. Das, S. Sharma, S. Ray, S. Rajbanshi, Shabir Dar, S. Nandi, S. Bhattacharya, T. Bhattacharjee, G. Mukherjee, S. Bhattacharyya, S. Samanta, S. Das, S, "Structural evolution and K-mixing in 49V", Phys. Rev. C, Vol.105, pp.44304, 2022 [Impact Factor: 3.199]

School of Advanced Materials, Green Energy and Sensor Systems

- 1. R. R. Das, A. Chowdhury, A. Chakroborty, S. Maity, "Effect of positive/negative interface trap charges on the performance of multi Fin FinFET (M-FinFET)", Silicon, Vol.14, 2022 [Impact Factor: 2.941]
- 2. R. R. Das, S. Maity, A. Chowdhury, A. Chakraborty, "Impact of temperature on radio frequency/linearity and harmonic distortion characteristics of Ge multi-channel fin shaped field effect transistor", International Journal of RF and Microwave Computer Aided Engineering, Vol.32, November, 2021 [Impact Factor: 1.98]

- 3. T. Panda, S. Sadhukhan, S. Acharyya, A. Nandi, S. Bose, N. Mondal, G. Das, S. Maity, P. Chaudhuri, H. Saha, "Losses in Bifacial PERC Solar cell due to rear grid design and scope of improvement", Sustainable Energy Technologies and Assessments, Vol.22, 2022 [Impact Factor: 7.63]
- 4. S. Baruah, J. Borah, J. Bora, S. Maity, "Optical Modelling of Gaas/Gasb Core-Shell Cone Topped Octagonal Faced Nanopillar Array With Periodic Trapezoidal Textured Cut For High Photon Trapping Efficiency", Journal of Computational Electronics, 2022 [Impact Factor: 1.983]
- 5. S. Mishra, S. Maity, G. Saini, S. Saha, A. Chauhan, A. Kumar, "A survey on multi-criterion decision parameters, integration layout, storage technologies, sizing methodologies and control strategies for integrated renewable energy system", Sustainable Energy Technologies and Assessments, Vol.52, 2022 [Impact Factor: 7.632]
- 6. S. Acharyya, S. Sadhukhan, T. Panda, D. K. Ghosh, N. C. Mandal, A. Nandi, S. Bose, G. Das, D. Banerjee, S. Maity, P. Chaudhuri, H. Saha, "Performance analysis of different dielectrics for solar cells with TOPCon structure", Journal of Computational Electronics, 2022 [Impact Factor: 1.983]
- B. Biswas, B. Hazra, N. Mukherjee and A. Sinha, "Nanomechanical Behaviour of ZrO₂ Dispersed Sisal-based Polymeric Composites", J. Materials: Design and Applications, Vol.235, pp.1841-1849, 2021 [Impact Factor: 2.663]
- 8. B. Biswas, N. Mukherjee and A. Sinha, "Indentation Behavior of Cellulosic Fibers/Fly Ash-Incorporated Polymer Composites at Sub-Micron Scale", Proc IMechE Part J. J Engineering Tribology, Vol.236, pp.242-249, 2021 [Impact Factor: 1.822]
- g. B. Biswas, B. Hazra, S. Chakraborty, N. Mukherjee and A. Sinha, "Mechanical Behavior of Cellulosic Fiber-Incorporated Modified Fly Ash-Dispersed Polymeric Composites", Proc IMechE Part E: J Process Mechanical Engineering, Vol.235, pp.2201-2208, 2021 [Impact Factor: 1.82]
- 10. A. Baral, A. Nandi, N. Bose and N. Mukherjee, "Crumpled Graphene Oxide/Spinel Cobalt Oxide Composite Based High Performance Supercapacitive Energy Storage Device", J. Energy Storage, Vol.42, pp.1-11, 2021 [Impact Factor: 8.907]
- 11. T. Chakraborty, A. Das, B. Biswas, S. Sarkar, N. Mukherjee, A. Sinha and S. Datta, "Hydroxyapatite Dispersed Sulphonated PEEK Composite Membrane: Synthesis, Structural and Mechanical Characterization", Proc IMech E Part E: J Process Mechanical Engineering, Vol.236, 2022 [Impact Factor: 1.82]

• School of Community Science & Technology

- A. Chakraborty, S. Majumdar, and J. Bhowal, "Phytochemical screening and antioxidant and antimicrobial activities of crude extracts of different filamentous fungi", Archives of Microbiology, Vol.203, pp.6091-6108, 2021 [Impact Factor: 2.667]
- B. Goswami, S. Majumdar, R. Dutta, and J. Bhowal, "Optimization of enzymatic hydrolysis of Pleurotus ostreatus derived proteins through RSM and evaluation of nutritional and functional qualities of mushroom protein hydrolysates", Brazilian Journal of Food Technology, Vol.25, pp.01-Dec, 2022
- 3. S. Majumdar, and J. Bhowal, "Studies on production and evaluation of biopigment and synthetic dye decolorization capacity of laccase produced by A. oryzae cultivated on agro-waste", Bioprocess and biosystems engineering, Vol.45, pp.45-60, 2022 [Impact Factor: 3.43]
- 4. A. Chakraborty, B.N. Paul, D.K. Bhattacharyya, J. Bhowal, "Evaluation of fungal single cell protein as aqua feed on carcass analysis and growth performance of Cirrhinus reba fingerlings", Aquaculture Research, Vol.53, pp.3140-3153, 2022 [Impact Factor: 2.184]
- 5. S. Ghosal, D.K. Bhattacharyya, and J. Bhowal, "Production, characterization, and storage stability of nutritionally enriched flaxseed-based spread", Journal of Food Processing and Preservation, Vol.46, 2022 [Impact Factor: 2.609]

Centre for Healthcare Science and Technology

- 1. M. Das, A. Das, A. Barui, R. R. Paul, "Comparative evaluation of proliferative potential and replicative senescence associated changes in mesenchymal stem cells derived from dental pulp and umbilical cord", Cell and Tissue Banking, Vol.23, pp.157-170, 2022 [Impact Factor: 1.752]
- 2. K. Layek, B. Basak, S. Samanta, S. P. Maity, A. Barui, "Stiffness prediction on elastography images and neuro-fuzzy based segmentation for thyroid cancer detection", Applied Optics, Vol.61, pp.49-59, 2022 [Impact Factor: 1.98]

9.2 Books Authored

- 1. S. Majumder, G. Datta and S. Bhattacharjya, Applied Mathematical Modeling, Elsevier, July, 2021
- 2. K. Budhkar, G. Asaithambi, A. K. Maurya and S. S. Arkatkar, Transportation Research in India: Practices and Future Directions, Springer Transactions in Civil and Environmental Engineering (STICEE), March, 2022
- 3. S. Bhattacharjee, S. Roy and S. Das Bit, Post-disaster Navigation and Allied Services over Opportunistic Networks, Springer, May, 2021
- 4. S. Sengupta and A. K. Das, Development of Intelligent Prediction System using Data Mining Techniques, Kripa Drishti Publications, Pune, November, 2021
- 5. M. Mitra, Satellite communication (2nd Edition), Prentice Hall of India, January, 2022
- 6. G. Samanta, Deterministic, Stochastic and Thermodynamic Modelling of Some Interacting Species, Springer Nature Singapore Pte Ltd., December, 2021
- 7. S. Kundu and S.C.Mondal , Design for Tomorrow, Volume 3, Smart Innovation, Systems and Technologies, Springer, 2021
- 8. N. C. Dey, Multiple Choice Questions & Solutions for Mining Professionals, Lovely Prakashan, Dhanbad, January, 2021

9.3 Books Edited

- 1. A. K. Das, J. Nayak, B. Naik, S. Dutta and D. Pelusi, Computational Intelligence in Pattern Recognition: Proceedings of CIPR 2021, Springer Verlag, Singapore, 2021
- 2. J. Nayak, B. Naik, D. Pelusi and A.K. Das, Handbook of Computational Intelligence in Biomedical Engineering and Healthcare, Academic Press, 2021
- 3. M. Mitra, M. Nasipuri and M. Ray Kanjilal, Computational Advancement in Communication, Circuits and Systems, Springer, 2022
- 4. D. Giri, K. K. R. Choo, S. Ponnusamy, W. Meng, S. Akleylek and S. P. Maity, Proceedings of the Seventh International Conference on Mathematics and Computing, Springer, 2022
- 5. B. Sikdar, S. P. Maity, J. Samanta and A. Roy, Proceedings of the 3rd International Conference on Communication, Devices and Computing, Springer, 2021
- 6. H. Rahaman, C. Giri, T. Iizuka, and B. B. Bhattacharya, Emerging Electronic Devices, Circuits and Systems, Applied Sciences & Engineering, Springer Nature, Springer, 2022
- 7. K. Pal, S. Verma, P. Datta, A. Barui, S. A. R. Hashmi and A.K. Srivastava, Advances in Biomedical Polymers and Composites Materials and Applications, Elsevier, 2022

9.4 Book Chapters Authored

- S. Pal and S. Haldar, Data-Driven Optimization of Manufacturing Processes, Optimization of Drilling Parameters for Composite Laminate Using Genetic Algorithm, IGI Global, pp.191-213,2021
- 2. S. Ghosh and S. Haldar, Recent Advances in Computational and Experimental Mechanics, Vol II, Free Vibration analysis of isotropic and laminated composite plate on elastic point supports using finite element method, Springer, Singapore, pp.371-384,2022
- 3. P. K. Raushan, S. K. Singh and K. Debnath, River Hydraulics, Turbulence Flow Statistics Downstream of Grids with various Mesh Size, Springer, pp.59-69,2022
- 4. S. K. Singh, P. K. Raushan and K. Debnath, River Hydraulics, Turbulent Flow over a train of k type roughness, Springer, pp.207 215,2022
- 5. P. Chauhan and K. Bhowmik, Recent Advances in Computational and Experimental Mechanics, Vol-I, Lect. Notes Mech. Eng., Effect of Stone-wales defects on elastic moduli of Multi-walled Carbon Nanotubes using nanoscale continuum modeling, Springer, pp.425-434,2022
- K. Bhowmik, H. Ambati, N. Khutia and A. Roy Chowdhury, Recent Advances in Computational and Experimental Mechanics, Vol-II, Lect. Notes Mech. Eng., Prediction of Elastic Constants of Spiral MWCNT Reinforced Nanocomposites by Finite Element Analysis, Springer, pp.449-458,2022
- 7. R. Barua, S. Das, P. Datta, A. RoyChowdhury, "Computational FEM Application on Percutaneous Nephrolithotomy (PCNL) Minimum Invasive Surgery Through Needle Insertion Process", Advances in Computational Approaches in Biomechanics, pp. 210-222, 2022
- 8. R. Barua, P. Datta, AR. Chowdhury, S. Das, "Computational Study of In-Vitro Ureter Urine Flow in DJ Stent", Advances in Computational Approaches in Biomechanics, pp. 198-209, 2022
- 9. R. Barua, S. Datta, P. Datta, A. Roychowdhury, "Study and Application of Machine Learning Methods in Modern Additive Manufacturing Processes", Applications of Artificial Intelligence in Additive Manufacturing, pp. 75-95, 2022
- 10. R. Barua, P. Datta, AR. Chowdhury, "The Impact of 3D Printing Technology on the COVID-19 Pandemic", Quality of Healthcare in the Aftermath of the COVID-19 Pandemic, pp. 135-154, 2022
- 11. R. Barua, S. Datta, P. Sengupta, AR. Chowdhury, P. Datta, "Advances in MEMS micropumps and their emerging drug delivery and biomedical applications", Advances and Challenges in Pharmaceutical Technology, pp. 411-452, 2021
- 12. P. C. Singh and P. Halder, Thermo-Fluids and System Design, Modeling of a Gd-Based Active Magnetic Regenerator for Near Room Temperature Magnetic Cooling System, BS Publications, pp.43-52, 2022

- 13. S. Mitra, S. Roy and S. K. Paul, Social Transformations in India, Myanmar, and Thailand: Volume I, Rehabilitative Planning Strategy for Transformative Changes of Vulnerable Communities in Indian Sundarban, Palgrave Macmillan, pp.259-277, 2021
- 14. S.K.Paul, S. Roy and S. Mitra, Social Transformations in India, Myanmar, and Thailand: Volume I, Urban Dynamics, Socioeconomic Transformation and Built Heritage in a Historic Town of India: An Appraisal, Palgrave Macmillan, pp.115-135, 2021
- 15. M. Hom Choudhury and S. K. Paul, Geographical Indication Protection in India, Geographical Indication Registrations for Rural Enterprise Development, Springer Nature, 2022
- 16. C. Ranu, T. Ghosh, L. Adak and S. Panja, Comprehensive Heterocyclic Chemistry IV, Selenophenes, Oxford: Elsevier, pp.653-674,2022
- 17. R. Mondal, A. K. Guin and N. D. Paul, Handbook of CH-Functionalization (CHF), Heterocycles Synthesis by (Cross)-Dehydrogenative Coupling, Willy, 2022
- 18. P. Hajra, D. Sariket, S. Ghosh, S. Baduri, D. Ray and C. Bhattacharya, Nanostructured Photocatalysts: From Fundamental to Practical Applications, Photoelectrochemical oxidation of water and degradation of pollutants using simple Bi-based metal oxide semiconductors under visible light irradiation, Elsevier B.V., Science Direct, pp.279-303,2021
- 19. P. Sengupta, S. K. Mishra and S. Chakraborrty, Recent development in Structural Health Monitoring and assessment -Opportunities and Challenges, Bayesian Updating of Structures based on a Metropolis-Haastings based Heteroscedastic Hierarchial Model, World Scientific press, pp.111-1362022, 2022
- 20. R. De, A. Kundu and S. Chakraborty, Recent Advances in Computational and Experimental Mechanics, Vol II. Lecture Notes in Mechanical Engineering, Deep Learning Algorithm for Damage Detection of Structure, Springer, Singapore, 2022
- 21. P. Sarkar, T. Biswas, C. Chandra, A. Saha, M. Sudarshan, C. Majumder and S. Ray Chaudhuri, Bioresources Utilization and Management, Spent Coffee Waste Conversion to Value-Added Products for the Pharmaceutical and Horticulture Industry, Apple Academic Press with CRC Press, pp.471-487,2021
- 22. A. Bhattacharjee and A. (Dey) Ghosh, Recent Advances in Computational and Experimental Mechanics, Vol. II, Lecture Notes in Mechanical Engineering, A Comparative Study on the Vibration Control of a Bridge Under Moving Springing Mass by TMD and TMDI, Springer Singapore, pp.651-663, 2022
- 23. T. Konar and A. (Dey) Ghosh, Recent Advances in Computational and Experimental Mechanics, Vol II, Lecture Notes in Mechanical Engineering, Design of overhead water tank with floating base

- for utilization as tuned liquid damper against lateral excitation, Springer, Singapore, pp.665-672, 2022
- 24. T. K. Roy and A. S. Ghosh, Proceedings of the 7th Indian Young Geotechnical Engineers Conference, 7 IYGEC-2019, Evaluating the Utility of Pond Ash as an Alternative Foundation Material Partially replacing Sand for Foundation Layers, Springer Nature Singapore Private Ltd., pp.157-165,2022
- 25. D. Bhattacherjee and B.V.S Viswanadham, Ground Improvement Techniques (ISBN: 978-981-15-9987-3). Lecture notes in Civil Engineering, Centrifuge Modelling of Marginal Soil Slopes under Rainfall with Hybrid Geosynthetic Inclusions, Springer, Singapore, pp.329-338, 2021
- 26. D. Bhattacherjee and B.V.S Viswanadham, Dynamics of Soil and Modelling of Geotechnical Problems (ISBN: 978-981-16-5604-0). Lecture notes in Civil Engineering, Studies on Centrifuge Modelling of Rainfall Induced Landslides, Springer, Singapore, pp.207-216, 2022
- 27. P. Ray, A. Ghosh and D. Bhattacherjee, Soil Dynamics, Earthquake and Computational Geotechnical Engineering, Lecture notes in Civil Engineering, Simplified Plane Strain Consolidation Modeling of Stone Column, Springer, Singapore, 2022
- 28. Das, S. Sarkar, S. S. Basak and A. Adak, Emerging per- and polyfluroalkyls substances (PFASs):
 Occurrence, Environmental Impacts, and Treatment Technologies, Advances and Emerging
 Treatment Methods for Per- and Polyfluoroalkyl Substances, Elsevier, 2022
- 29. B.V.S Viswanadham and S. Kundu, Latest Developments in Geotechnical Earthquake Engineering and Soil Dynamics-Springer Transactions in Civil and Environmental Engineering, Studies on modelling of Dynamic Compaction in a Geocentrifuge, Springer, Singapore, pp.373-391, 2021
- 30. S. Kundu and B.V.S Viswanadham, Ground Improvement Techniques (Hardcover ISBN: 978-981-15-9987-3) Lecture Notes in Civil Engineering, Influence of geofoam infilled trenches in attenuation of ground vibrations induced during dynamic compaction, Springer, Singapore, pp.63-72, 2021
- 31. S. Kundu and B.V.S Viswanadham, Transportation, Water and Environmental Geotechnics (Hardcover ISBN: 978-981-16-2259-5) Lecture Notes in Civil Engineering, Use of dynamic compaction for densifying MSW landfills, Springer, Singapore, pp.159-169, 2021
- 32. S. Bhattacharya and S. K. Dalui, (2021), Proceedings of SECON™21, Lecture Notes in Civil Engineering, Springer, pp.873-887,2021
- 33. R. Kar, and S.K. Dalui, Recent Advances in Computational and Experimental Mechanics, Wind-Induced Effect on Octagonal Building Interfered by Square Buildings in T Pattern, Springer, pp.249-262,2022

- 34. Debabrata Mazumder, Green Engineering and Sustainable Development, Perspectives of Green Engineering and Sustainable Development, Narosa Publishing House, India, pp.2.1-2.13,2021
- 35. R. Loganath and Debabrata Mazumder, Climate Impacts on Water Resources in India, Acclimation and Treatability Studies on Slaughter House Wastewater by Hybrid UASB Reactor, Springer, Champ, pp.193-201,2021
- 36. D.Roy, S. Mumu and S. Biswas, Water Management and Water Governance, Agricultural crop mapping using MODIS Time-series Data in DVC Command Area, Springer, pp.167-178, 2021
- 37. K. Budhkar, G. Asaithambi, A. K. Maurya and S. S. Arkatkar, Transportation Research in India-Practices and Future directions, Emerging Traffic Data Collection Practices Under Mixed Traffic Conditions: Challenges and Solutions, Springer Transactions in Civil and Environmental Engineering, pp.101-130,2022
- 38. C. Mallick, S. Das and A. K. Das, Understanding COVID-19: The Role of Computational Intelligence, Evolutionary Algorithm Based Summarization for Analyzing COVID-19 Medical Reports, Springer Cham, pp.31-58,2021
- 39. A. Halder and A. Sarkar, Advanced Machine Learning Approaches in Cancer Prognosis, Automatic Detection of Tumor Cell in Brain MRI Using Rough-Fuzzy Feature Selection with Support Vector Machine and Morphological Operation, Springer, pp.221-246,2021
- 40. R.Paul, A. Sengupta, S. Purkait and S.Khan, Noise filtering for Big Data analytics, Application of discrete domain wavelet filter for signal denoising, De Gruyter, 2022
- 41. N. Dey, U. Mondal and A. Sengupta, Adaptive Repetitive Control of Peristaltic Pump Flow Rate with an Optical Flow Sensing System, CRC Press, pp.343-358, 2021
- 42. K. Rai, S. Chanda and A. De, Advances in Smart Grid Automation and Industry 4.o, Lecture Notes in Electrical Engineering (LNEE), Vol. 693, Economic Integration of Renewable Energy Sources for Optimal Operation of Smart Grid, Springer, 2021
- 43. C. RoyChaudhuri and N. Mandal, Printed and Flexible Sensor Technology Fabrication and applications, Screen printed electrochemical and impedance biosensors, Institute of Physics (UK), pp.9.1-9.47,2021
- 44. A. Pramanik and R. Chakraborty, A Deep Learning Prediction Model for Detection of Cancerous Lesions from Dermatoscopic Images, Advanced Machine Learning Approaches in Cancer Prognosis Challenges and Applications, Springer, pp. 395-423,2021
- 45. J. Das, S. Ghosh, R. Chakraborty and A. Pramanik, Deep Learning Based Classification of Brain Tumor Types from MRI Scans, Advanced Machine Learning Approaches in Cancer Prognosis Challenges and Applications, Springer, pp. 425-454,2021

- 46. S. Bandyopadhay, The Hindu Nation State, The Retrograde Politics of State Power Today and An Unfinished Project, SETU PRAKASHANI, 2022
- 47. A Banerjee and S. P. Maity, Green Engineering and Technology: Innovations, Design, and Architectural Implementation, On Energy Harvesting in Green Cognitive Radio Networks, CRC Press, 2021
- 48. S. Das, The Mathematical Artist: A Tribute to John Horton Conway, Game of Life, Athenian Democracy and Computation, Springer, pp.159-170,2022
- 49. S. Mukherjee, O. Bandyopadhay and A.Biswas, Current Applications of Deep Learning in Cancer Diagnostics, Detection and Classification of Brain Tumors using Light Weight Convolutional Neural Network, Taylor and Francis, 2022
- 50. L. Biswal, B. Mondal, A. Chakraborty and H. Rahaman, Artificial Intelligence Driven Circuits and Systems, Efficient Quantum Implementation of Majority-Based Full Adder Circuit Using Clifford+T-Group, Springer, 2022
- 51. P. Saha and P. Ghosal, Computers and Devices for Communication, Power Analysis and Optimization Using Nonlinear Modeling of Memristor: A Design Case Study, Springer, pp.441-447,2021
- 52. S. Mazumder, D. Majumder and P. Ghosal, Intelligent Modeling, Prediction, and Diagnosis from Epidemiological Data, A Systematic Review of Predictive Models on COVID-19 with a Special Focus on CARD Modeling with SEI Formulation An Indian Scenario, Taylor & Francis, pp.21,2021
- 53. S. Ghosh and G. P. Samanta, Computational Management: Applications of Computational Intelligence in Business Management, Gross Domestic Product Modeling Using Panel-Data Concept, Springer, pp.195-218,2021
- 54. M. Mandal, S. Jana, S. Adak, A. Khatua and T. K. Kar, Modeling, Control and Drug Development for COVID-19 Outbreak Prevention, A Model-Based Analysis to Predict and Control the Dynamics of COVID-19, Springer, CHAM, pp.87-118, 2022
- 55. S. Adak, S. Jana and T. K. Kar, Modeling, Control and Drug Development for COVID-19 Outbreak Prevention, Investigation of COVID-19 Using an Artificial Intelligence Based Approach, Springer, CHAM, pp.455-478, 2022
- 56. M. Rahaman, S. P. Mondal, A. El Allaoui, S. Alam, A. Ahmadian and S. Salahshour, Advances in Fuzzy Integral and Differential Equations, Solution Strategy for Fuzzy Fractional Order Linear Homogeneous Differential Equation by Caputo-H Differentiability and Its Application in Fuzzy EOQ Model., Springer, Cham, pp.143-157,2021
- 57. M. Rahaman, S. P. Mondal and S. Alam, Optimal Decision Making in Operations Research and Statistics Methodologies and Applications, Memory Effect on an EOQ Model with Price

- Dependent Demand and Deterioration, Routledge and CRC Press, Taylor & Francis group, p.434,2021
- 58. M. Rahaman, S. P. Mondal and S. Alam, Soft Computing Approach for Mathematical Modeling of Engineering Problems, Solution of Linear Difference Equation in Interval Environment and Its Application, CRC Press, Chapter 2, p.23,2021
- 59. M. Rahaman, S. P. Mondal and S. Alam, Artificial Neural Network Applications in Business and Engineering, Artificial Neural Network for Solving the Inventory Control Problem in Fuzzy Environments, IGI Global, Chapter-6, pp.126-143,2021
- 6o. S. Moi, S. Biswas, and S. Pal (Sarkar), Neutrosophic Operational Research, Neutrosophic Linear Differential Equation with a New Concept of Neutrosophic Derivative, Springer Nature, pp.395-410,2021
- 61. B. J. Hemrom, U. Rana and A. Ganguly, Lecture Notes in Mechanical Engineering, Enhancement of the Thermal Performance of a Parabolic Trough Collector with Cavity Receiver, Springer Nature Singapore Pte. Ltd., 2021
- 62. K. Pradeep and B. Pal, Advancements in Additive Manufacturing: Artificial Intelligence, Nature Inspired and Bio-manufacturing, Selected Biomedical Applications of Additive Manufacturing Techniques, Elsevier, 2022
- 63. S. Chowdhury, A. Singh and B. Pal, Advances in Biomedical Polymers and Composites: Trends and Applications, Introduction to biomedical polymers and composites, Elsevier, 2022
- 64. S. Chowdhury, P. Datta and B. Pal, Reference Module in Materials Science and Materials Engineering, Composite Biomaterials for Bone Grafting and Other Biomedical Applications, Elsevier,2021
- 65. R. Bhattacharya, K. Mukherjee and B. Pal, Reference Module in Materials Science and Materials Engineering, Polyethylene in Orthopedic Implants: Recent Trends and Limitations, Elsevier, 2021
- 66. A. Naskar, A. Ghosh, A. Roy, K. Chattopadhyay and M. Ghosh, Reference Module in Materials Science and Materials Engineering, Polymer-Ceramic Composite Electrolyte for Li-Ion Batteries, Elsevier, 2021
- 67. I. Dey, P. Manna, M. Yadav, N. K. Tewary, J. K. Saha and S. K. Ghosh, Stainless Steels, Study on the Perspective of Mechanical Properties and Corrosion Behaviour of Stainless Steel, Plain and TMT Rebars, IntechOpen,2021
- 68. M. A. Bakkar, B. Kanrar and D. Das, Processing and Characterization of Materials, Low Cycle Fatigue Behavior of a Microalloyed Steel, Springer, Singapore., pp.125-134,2021
- 69. M.A. Bakkar, R. Saha and D. Das, Processing and Characterization of Materials, Seismic Performance Assessment of a TMT Rebar, Springer, Singapore, pp.135-145,2021

- 70. P. P.Sahu and S. Maity, Biosensors in Food Safety and Quality, Optical Biosensors: Principles, Techniques, Sensor Design and Their Application in Food Analysis, CRC, pp.14,2022
- 71. S. Maity and P. P. Sahu, Biosensors in Food Safety and Quality, Electrochemical Sensors: Core Principle, New Fabrication Trends, and Their Applications, CRC, pp.47-61,2022
- 72. S. Saha, S. Dasgupta and A. Barui, Food, Medical, and Environmental Applications of Nanomaterials, Nanotechnology-based interventions for interactions with the immune system, Elsevier, 2022
- 73. S. Adhikary, R. R. Paul, M. Mandal, S. P. Maity and A. Barui, Advanced Machine Learning Approaches in Cancer Prognosis. Intelligent Systems, Overlapping Oral Epithelial Cells Segmentation: Voronoi-Based Hybrid Active Contour Model, Springer, Cham., 2021

9.5 Patents and Copyrights

- P. Chakrabarti, Electrochemical Process of Immuno-Based Thinonine Doped Nanosilica Electrode Modification and Its Use as an Enzymatic Sensor for Electrochemical Detection of Platelet Hyperactivity, 2021, Granted, Patent no.375935
- 2. P. Chakraborti, A. Adak, S. S. Basak and A. Pramanik, A Surface Disinfection System, 2022, Published, Application no. 202131012559
- 3. Myong, P. Raj, Nam, Hojin, Minyoung, Jaewon, Jho, Aircraft Anti-icing and De-icing System, 2021, Approved, Patent no. 10-2315288
- 4. S. Basupal, K. Das (Bhattacharya) and D. Mukherjee, A Novel I-V Curve Tracer For Solar PV Generators, 2021, Published, Application no. 201831041698, Patent no. 383877
- 5. S. Sengupta, S. Debnath and A. Sengupta, A system for testing Dynamically bending behavior of semi-rigid fabrics and a method of such testing, 2021, Approved, Application no. 1118/KOL/2014, Patent no. 362012
- 6. S. Chaudhuri, An improved on line leakage detection system and water flow monitoring for machine cooling water circuit for caster rolls, 2021, Approved, Application no. 1427/KOL/2011, Patent no. 366595
- 7. S. Chaudhuri, An improved system of a Multiple Rollers based charging chute to improve segregation of sinter-mix during charging into pallets in sintering process, 2022, Approved, Application no. 168/KOL/2013, Patent no. 389575
- 8. A. Pramanik and R. Mukherjee, Automated AMD Detection by a Novel Deep Neural Network, 2021, Registration Number: SW-14634/2021
- 9. A. Das, S. Bose and C. RoyChaudhuri, A Handheld Open-Access Mobile-Interface Potentiostat, 2021, Published, Application no. E-12/77/2021/KOL(202031033036)
- 10. I. Banerjee, S. Shakhari, C. Ghorai and A. Sen, An IOT Based Real Time Portable Water Quality Monitoring System, 2021, Approved, Application no. 202031009277, Patent no. 356392
- 11. C. Ghorai, I. Banerjee, S. Sinha, S. Mukhapadhyay and K. Singh, Real-time Remote Air Quality Monitoring System with Automatic Sprinkler System, 2022, Applied, Application no. 202231040929
- 12. S. Poddar, A. Hazarika, P. C. Naidu and H. Rahaman, Hardware Accelerator For Efficient Convolution Processing, 2021, Published, Application no. 16858637, Patent no. US20200264935
- 13. P. Ghosal, A. Saha, S.A. Nadaf, V. K. Shukla and G. C. Saha, Methods and systems for wireless charging of smart cards, 2021, Published, Application no. 201821035337
- 14. S. Sinha, Real Time Air Quality Monitoring System with automatic sprinkler system, 2022, Applied, Application no. TEMP-1/45412/2022-KOL

15. N. C. Dey and Shibaji Ch Dey, Underground Man-riding system, 2021, Published, Application no.
202131055306, Patent no. 52/2021

9.6 Awards / Honours

Aerospace Engineering and Applied Mechanics

 Dr. Nityananda Nandi - Sir Rajendra Nath Mookerjee Memorial Prize awarded by Institution of Engineers (India), 2021

Architecture, Town and Regional Planning

- 1. Dr. Parthasarathi Mukhopadhyay Alternate Member of the Panel for Timber and Bamboo (CED 46:P6) awarded by Bureau of Indian Standards, 2022
- 2. Dr. Swati Saha Prediction modelling of riverine landscape dynamics in the context of sustainable management of floodplain: a Geospatial approach awarded by Annals of GIS, 2021

Chemistry

- 1. Dr. Shyamal Kumar Chattopadhyay Professor H.L. Nigam memorial Lifetime achievement award from Indian Chemical Society awarded by Indian Chemical Society, 2022
- 2. Dr. Chinmoy Bhattacharya Elected Member of the Indian Society for ElectroAnalytical Chemistry (ISEAC) awarded by ISEAC, BARC, Mumbai, 2021

Civil Engineering

- 1. Dr. Subrata Chakraborty
 - a) Fellow West Bengal Academy of Science and Technology awarded by West Bengal Academy of Science and Technology, 2022
 - b) Fellow, Council of Vibration specialists awarded by Council of Vibration specialists, 2021
- 2. Dr. Tapash Kumar Roy The IGC-2021 Springer Best Paper Award awarded by IGC2021 and Springer, 2022
- 3. Dr. Dipankana Bhattacherjee IGS-Kolkata Chapter Young Geotechnical Engineer (YGE) Award on Earth Retaining Structures awarded by Indian Geotechnical Society (IGS), 2021
- 4. Dr. Saptarshi Kundu IGS-Mr. H.C. Verma Diamond Jubilee Award on Innovative Instrument Design awarded awarded by Indian Geotechnical Society, 2021
- 5. Dr. Anirban Gupta Partha Chatterjee Memorial Prize (for excellence in application of science and technology) awarded by Bongiyo Bigyan Parishad, 2022

Electrical Engineering

 Dr. Subhasis Chaudhuri - National Research Development Corporation (NRDC), Government of India Innovation Award awarded by National Research Development Corporation (NRDC),

• Electronics and Telecommunication Engineering

- 1. Dr. Dipankar Saha
 - a) Outstanding Reviewer Awards 2021 awarded by IOP for Journal of Physics D: Applied Physics, 2021
 - b) IEEE Senior Member awarded by IEEE, 2022
- 2. Dr. Chirasree RoyChaudhuri
 - a) Selected in WOMEN in STEM: Vanguards of India@75 awarded by Confederation of Indian Industry, 2022
 - b) Selected as member of National Academy of Science, NASI awarded by NASI, 2022
 - c) Member of the Executive Committee of Futuristic and Advanced Manufacturing Forum of India (FAMFI) awarded by National Institute of Foundry and Forge Technology (NIFFT), Ranchi, 2021

• Information Technology

- 3. Dr. Hafizur Rahaman
 - a) General Co-Chair, ISDCS 2021 awarded by ILDP, Hiroshima University, Japan, 2021
 - b) General Co-Chair, ISDCS 2022 awarded by ILDP, Japan, 2022
 - c) ATS Steering Committee Member awarded by IEEE, 2021
 - d) General Co-Chair, VLSID 2024 awarded by VLSI Society of India (VSI), 2021

Mechanical Engineering

- Dr. Aritra Ganguly Outstanding Faculty In Mechanical Engineering Awarded By Venus International Foundation, 2022
- 2. Dr. Sujoy Kumar Saha
 - a) STAIR awarded by STAIR Committee, 2021
 - b) Stanford University Top 2 % worldwide list awarded by Stanford University USA, 2021

Metallurgy & Materials Engineering

 Dr. Debdulal Das - Excellent Reviewer awarded by Journal of 'Transaction of Indian Institute of Metals', Springer, 2022

• Mining Engineering

- 1. Dr. Sudipta Mukhopadhyay Nominated as one of the members of the Advisory Board for the National Library awarded by Ministry of Culture, Government of India, 2022
- 2. Dr. Netai Chandra Dey
 - a) IEI Fellowship and Council position in Mining at National Level awarded by Institution of Engineers (India), 2022
 - b) Council Member awarded by MGMI (India), 2021
 - c) Committee in Apex R&D committee of CIL awarded by Coal India Limited, 2022

• School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS)

1. Dr. Santanu Maity - Fellow (FIETE) awarded by IETE, 2022

School of Management Sciences

- 1. Dr. Partha Sarathi Chowdhury
 - a) Conferred with the title Honorary National Resource Person & Consultant awarded by the Quality Institute of India, New Delhi in December 2002 & Quality Culture Award received in December 2002 awarded by Quality Institute of India, New Delhi
 - b) Conferred with title Leading Professional of the World 2013 awarded by the International Biographical Centre, Great Britain in May 2013 awarded by International Biographical Centre, Great Britain
 - c) Conferred with the Cambridge Certificate for Outstanding Scientific Achievement by the International Biographical Centre, Great Britain in March 2017 awarded by International Biographical Centre, Great Britain
- 2. Dr. Mandira Dey Best Paper Presenter Award in the session "Human Resource" in International Conference on Interdisciplinary Research in Technology & Management organized by IEM in Collaboration with IEEE Kolkata Section and SMART Society, USA (24th-26thFebruary,2022).

• Centre for Healthcare Science and Technology

 Dr. Ananya Barui - Mentor of Research scholar awarded Newton Bhabha Fellowship awarded by DBT, 2021

9.7 PhD Supervised

SI.	Supervisor (s)	Name of the candidate	PhD Awarded with effect from			
Department of Aerospace Engineering and Applied Mechanics						
1	Dr. Nityananda Nandi	10.08.2021				
Depa	rtment of Architecture, Town and R	tegional Planning				
2	Dr. Arup Sarkar	Kaushik Ghosh	18.02.2022			
Depa	rtment of Chemistry					
3	Dr. Bibhutosh Adhikari Dr. Sabyasachi Sarkar	Subrata Ghosh	01.04.2021			
4	Dr. Chinmoy Bhattacharya	Debasis Sariket	06.07.2021			
5	Dr. Sudip Kumar Chattopadhyay	Shovan Manna	24.07.2021			
6	Dr. Shyamal Kumar Chattopadhyay	Moumita Chakraborty	02.08.2021			
7	Dr. Sudip Kumar Chattopadhyay Dr. Suman Kumar Banik	Jagannath Das	09.08.2021			
8	Dr. Ajit Kumar Mahapatra	Uday Narayan Guria	19.8.2021			
9	Dr. Sabyasachi Sarkar Dr. Papu Biswas	Sheli Maity	30.09.2021			
10	Dr. Bhibhutosh Adhikary	Jit Satra	27.12.2021			
11	Dr. Nanda Dulal Paul	Gargi Chakraborty	10.01.2022			
12	Dr. Nanda Dulal Paul	Siuli Das	10.02.2022			
13	Dr. Ajit Kumar Mahapatra Dr. Pulakesh Bera	Abhimanyu Jana	18.02.2022			
Depa	rtment of Civil Engineering					
14	Dr. Debabrata Mazumder	Biswabandhu Chatterjee	29.04.2021			
15	Dr. Tapas Kumar Roy	Sandip Karmakar	10.06.2021			
16	Dr. Sujit Kr.Dalui	Debasish Kumar	12.06.2021			
17	Dr. Aparna (Dey)Ghosh Dr. Pallab Datta	Sandip Mondal	07.07.2021			
18	Dr. Tapas Kumar Roy	Raja Mistry	11.08.2021			
19	Dr. Asok Adak Dr. Ananya Barui	Sushma Das	11.08.2021			
20	Late Dr. Kalyan Kumar Bhar	Sanghamitra Medda	18.08.2021			

SI.	Supervisor (s)	Name of the candidate	PhD Awarded with effect from	
21	Dr. Sudip Kumar Roy	Sandip Chakraborty	02.09.2021	
22	Dr. Ashis Kumar Bera	Arya Das	08.09.2021	
23	Dr. Sudip Kumar Roy Dr. Subhamay Gangopadhyay	Tanumoy Ghosh	23.09.2021	
24	Dr. Sujit Kr. Dalui	Rajdip Paul	16.09.2021	
25	Dr. Sujit Kr. Dalui	Amlan Kumar Bairagi	25.10.2021	
26	Late Dr. Kalyan Kumar Bhar	Sheak Hasim	10.11.2021	
Depa	rtment of Computer Science and Te	chnology		
27	Dr. Susanta Chakraborty Dr. Sanjit Kr. Setua	Tapan Chowdhury	12.04.2021	
28	Dr. Jaya Sil	Anindita Mukherjee	24.05.2021	
29	Dr. Samit Biswas Dr. Sekhar Mandal	Arpan Garai	30.07.2021	
30	Dr. Asit Kumar Das Dr. Swagatam Das	Arka Ghosh	14.09.2021	
31	Dr. Asit Kumar Das Dr. Subhas Chandra Nandy	Swati Goswami	06.10.2021	
32	Dr. Asit Kumar Das	Priyanka Das	27.11.2021	
33	Dr. Asit Kumar Das	Ghazaala Yasmin	23.11.2021	
34	Dr. Sipra Das Bit	Tamal Pal	14.02.2022	
35	Self - Guided	Somnath Pal	14.02.2022	
36	Dr. Uma Bhattacharya	Smita Paira	23.02.2022	
37	Dr. Uma Bhattacharya Dr. Tamaghna Acharya	Joy Halder	28.01.2022	
Depa	rtment of Earth Science			
38	Dr. Ananya Mukhopadhyay	Alono Thorie	06.12.2021	
39	Dr. Ananya Mukhopadhyay	Tithi Banerjee	09.02.2022	
Department of Electrical Engineering				
40	Dr. Mainak Sengupta	Sourabh Paitandi	05.07.2021	
41	Dr. Abhinandan De	Rituparna Mukherjee	05.01.2022	

SI.	Supervisor (s)	Name of the candidate	PhD Awarded with effect from		
42	Dr. Abhinandan De Dr. Gautam Bandyopadhyay	Shampa De	05.01.2022		
43	Dr. Debabrata Mazumder Dr. Amalendu Bikash Choudhury	Anirban Upadhyay	25.02.2022		
Depa	rtment of Electronics and Telecomn	nunication Engineering			
44	Dr. Debasis Mitra	Tarakeswar Shaw	12.05.2021		
45	Dr. Debasis Mitra	Saikat Chandra Bakshi	27.08.2021		
46	Dr. Tamaghna Acharya Dr. Santi P. Maity	Sutanu Ghosh	14.09.2021		
47	Dr. Santatu Das Dr. Susanta Kumar Parui	Mukesh Kumar	07.10.2021		
48	Dr. Monojit Mitra Dr. Debasis Mitra	Goutam Kumar Das	17.11.2021		
49	Dr. Santanu Das	Sk.Nurul Islam	28.12.2021		
50	Dr. Debasis Mitra	Swarup Das	03.03.2022		
Depa	rtment of Human Resource Manage	ment			
51	Dr. Manas Kumar Sanyal	Arundhati Banerjee	22.09.2021		
Depa	Department of Information Technology				
52	Dr. Santi P. Maity Dr. Ajoy Kumar Ray	Sheikh Rafiul Islam	02.08.2021		
53	Dr. Prasun Ghosal	Tuhin Subhra Das	05.08.2021		
54	Dr. Sukanta Das	Supreeti Kamilya	14.09.2021		
55	Dr. Arindam Biswas	Sharmistha Mondal	12.11.2021		
56	Dr. Sukanta Das	Sumit Adak	01.12.2021		
57	Dr. Malay Bhattacharyya	Sankar Kumar Mridha	24.11.2021		
58	Dr. Prasun Ghosal	Suraj Paul	30.11.2021		
59	Dr. Tuhina Samanta Dr. Indrajit Banerjee	Mrinmoy Sen	30.12.2021		
60	Dr. Sukanta Das	Souvik Roy	31.12.2021		
Department of Mathematics					
61	Dr. Basudeb Mukhopadhyay	Kamalesh Paul	28.05.2021		

SI.	Supervisor (s)	Name of the candidate	PhD Awarded with effect from		
62	Dr. Parbati Saha Dr. T.K. Samanta	Pratap Mondal	02.06.2021		
63	Dr. Tapan Kumar Kar Dr. Soovoojeet Jana	Manotosh Mandal	20.05.2021		
64	Dr. Smita Pal (Sarkar)	Biswajit Singh	08.06.2021		
65	Dr. Shariful Alam Dr. Tapan Kumar Roy	Suklal Tudu	24.06.2021		
66	Dr. Murari Mitra	Ruhul Ali Khan	22.07.2021		
67	Dr. Murari Mitra	Dhrubasish Bhattacharyya	24.07.2021		
68	Dr. Guruprasad Samanta Dr. Alakes Maiti	Meghadri Das	31.07.2021		
69	Dr. Pritha Das	Samhita Das	08.08.2021		
70	Dr. Basudeb Mukhopadhyay Dr. Soumen Shaw	Santanu Banerjee	17.08.2021		
71	Dr. Binayak Samadder Choudhury Dr. Nikhilesh Metiya	Sunirmal Kundu	11.09.2021		
72	Dr. Binayak Samadder Choudhury Dr. Nikhilesh Metiya	Debashis Khatua	18.09.2021		
73	Dr. Binayak Samadder Choudhury Dr. Himadri Sekhar Mondal	Devosmita Chatterjee	10.10.2021		
74	Dr. Parbati Saha	Nabin Chandra Kayal	05.10.2021		
75	Dr. Tapan Kumar Kar	Anupam Khatua	23.11.2021		
<u>7</u> 6	Dr. Guruprasad Samanta	Amartya Das	21.12.2021		
77	Dr. Basudeb Mukhopadhyay	Indranil Sakar	27.01.2022		
Depa	rtment of Mechanical Engineering				
78	Dr. Partha Pratim Dey Dr. Surajit Kumar Paul	Amit Kumar Rana	28.09.2021		
79	Dr. Shyamal Chatterjee	Suman Chattopadhyay	14.03.2022		
Depa	Department of Metallurgy & Materials Engineering				
80	Dr. Swarup Kr.Ghosh Dr. Subrata Chatterjee	Gurudas Mandal	14.08.2021		
81	Dr. Manojit Ghosh Dr. Partha Sakha Banerjee	Partha Pratim Dey	30.10.2021		

SI.	Supervisor (s)	Name of the candidate	PhD Awarded with effect from		
82	Dr. Manojit Ghosh	Kalyan Das	24.02.2022		
Department of Physics					
83	Dr. Bichitra Kumar Guha Dr. Saibal Ray	Suparna Biswas	20.05.2021		
84	Dr. Sampad Mukherjee Dr. Dipankar Das	Sanchayita Nag	27.07.2021		
85	Dr. Abhijit Majumdar	Arun Kumar Mukhopadhyay	29.07.2021		
86	Dr. Dwipesh Majumder	Debashis Das	20.08.2021		
87	Dr. Bichitra Kumar Guha Dr. Krishnendu Mukherjee	Rajdeep Basak	28.09.2021		
88	Dr. Samar Jana	Subhash Sharma	07.10.2021		
89	Dr. Samar Jana	Mithun De	25.10.2021		
90	Dr. Mousumi Basu Dr. Sukhen Das	Debopriya Bhattacharyya	24.12.2021		
91	Dr. Mousumi Basu Dr. Sukhen Das	Debopriyo Ghoshal	28.12.2021		
92	Dr. Sampad Mukherjee	Biplab Dutta	13.01.2022		
93	Dr. Sampad Mukherjee Dr. Chitrangada Das Mukhopadhyay	Preetha Bhadra	31.01.2022		
94	Dr. Abhijit Majumdar Dr. T.N.Chattopadhyay	Adrija Banerjee	09.02.2022		
95	Dr. Dwipesh Mazumder	Moumita Indra	25.02.2022		
Scho	ol of Advanced Materials, Green End	ergy and Sensor Systems			
96	Dr. Arijit Sinha Dr. Nillohit Mukherjee	Bhabatosh Biswas	23.08.2021		
97	Dr. Subrata Chatterjee Dr. Rajat K. Roy	Siuli Dutta	30.09.2021		
98	Dr. Hiranmay Saha Dr. Bichitra Kumar Guha	Nabin Chandra Mandal	29.09.2021		
99	Dr. Amitava Basu Mallick Dr. Debdas Roy	Subhabrata Chakraborty	30.12.2021		
100	Dr. Anup Mondal Dr. Utpal Gangopadhyay	Soma Ray	27.01.2022		

SI.	Supervisor (s)	Name of the candidate	PhD Awarded with effect from	
101	Dr. N.R. Bandyopadhyay Dr. Mallar Ray	Debosmita Karar	30.03.2022	
Scho	ol of Ecology, Infrastructure and Hu	man Settlement Management		
102	Dr. Suranjan Sinha Dr. Surajit Chakraborty	Dipankar Shome	30.05.2021	
Scho	ol of Community Science and Techn	ology		
103	Dr. Jayati Bhowal Dr. Jhuma Ganguly	Bhaswati Goswami	28.01.2022	
104	Dr. Jayati Bhowal Dr. D.K. Bhattacharyya	Manisha Maity	02.02.2022	
105	Dr. Jayati Bhowal Dr. Prasanta Kumar Nandi	Sucharita Sengupta	15.02.2022	
106	Dr. S.K. Mukherjea Dr. M. Ghosh	Moumita Dev	22.02.2022	
107	Dr. S.K. Mukherjea Dr. D.K. Bhattacharyya	Nabanita Ghosh	22.02.2022	
Scho	ol of VLSI Technology			
108	Dr. Hafizur Rahaman	Anindita Chakraborty	27.07.2021	
109	Dr. Partha Bhattacharyya	Indranil Maity	18.10.2021	
110	Dr. Hafizur Rahaman	Supriyo Srimani	21.12.2021	
Cent	re for Health Care Science and Techr	nology		
111	Dr. J.C. Misra Dr. Amit Roy Chowdhury	Biswajit Mallick	28.7.2021	
112	Dr. Chitrangada Das Mukhopadhyay Dr. Pritha Das	Bhuban Ruidas	24.11.2021	
113	Dr. Chitrangada Das Mukhopadhyay Dr. Jaya Sil	Sutapa Som Chaudhury	23.12.2021	
114	Dr. Pallab Datta Dr. Amit Roy Chowdhury	Sudipto Datta	25.02.2022	

Picture Gallery

10. Institutional Programs





Azadi Ki Amrit Mahotsav, 75 Years of India's Independence, 15th August 2021





Inauguration of Ground Water Recharge, 15th August 2021





Inauguration of Volleyball Court, 15th August 2021



Green Plantation, 18th August 2021



Inauguration of Hindi Fortnight Celebration (Online), 1st September 2021





Ishwar Chandra Vidyasagar Birthday Celebration, 26th September 2021





Republic Day Celebration, 26th January 2022





International Women's Day Celebration, 8th March 2022





Convocation 11th and 14th March 2022





 $5^{ ext{th}}$ International Symposium on Devices, Circuits and Systems, 29-31 March 2022

A	Annual Report 2021-	22 Indian Institute	of Engineering S	cience and Technolo	ogy, Shibpur

Students' AcademicPerformance andAmenities

11.1 Performance in Graduate Aptitude Test in Engineering (GATE)

Name	Graduation Year	Department	Rank & Paper Code
Thuniki Shrenith Suhas	2023	Aerospace Engineering and Applied Mechanics	AIR 54 (AE)
Sk Mohammad Zaheer	2023	Aerospace Engineering and Applied Mechanics	AIR 62 (AE)
Niladri Dutta	2023	Electrical Engineering	AIR 4 (EE)
Sourav Pal	2023	Electrical Engineering	AIR 158 (EE)
Himanshu Agarwal	2023	Electronics & Telecommunication Engineering	AIR 27 (EC)
Arijeet Maji	2023	Mining Engineering	AIR 180 (MN)
Subhrajyoti Biswas	2022	Aerospace Engineering and Applied Mechanics	AIR 4 (AE)
Dipayan Parbat	2022	Aerospace Engineering and Applied Mechanics	AIR 13 (AE)
Mainak Mallick	2022	Aerospace Engineering and Applied Mechanics	AIR 28 (AE)
Shruti Rajpara	2022	Aerospace Engineering and Applied Mechanics	AIR 32 (AE)
Arpit Gupta	2022	Aerospace Engineering and Applied Mechanics	AIR 49 (AE)
Arnab Hazra	2022	Aerospace Engineering and Applied Mechanics	AIR 66 (AE)
Dheeraj Sappa	2022	Aerospace Engineering and Applied Mechanics	AIR 84 (AE)
Jyoti Prakash	2022	Civil Engineering	AIR 15 (GE)
Divya Bharti	2022	Civil Engineering	AIR 187 (ES)
Shubhojit Naskar	2022	Electrical Engineering	AIR 6 (IN)
Arunava Mukherjee	2022	Mechanical Engineering	AIR 41 (ES)
Ritik Kumar	2022	Metallurgy and Materials Engineering	AIR 96 (MT)
Shubh Kumar	2022	Mining Engineering	AIR 113 (MN)
Sachin Paul	2022	Mining Engineering	AIR 134 (MN)
Aditya Vikram Choudhari	2021	Computer Science & Technology	AIR 68 (CST)
Rupesh Kumar	2021	Mining Engineering	AIR 134 (MN)
Chandra Duari	2021	Mining Engineering	AIR 70 (MN)

11.2 Students' Amenities

On the recommendation of the Review Committee (1953), a proctorial department was established at the erstwhile Bengal Engineering College, Shibpur in the year 1956. The principal objective of the department was to look after their discipline, welfare, and extra-curricular activities of students. With the conversion of this Institute to a CFTI, the Institute switched over to a Dean based mode of functioning and, as such, since 2014, it functions under the direct supervision of the Dean (Student Welfare). In order to create an environment conducive to fostering growth of academic and cultural life in the Institute and to develop sound mental health of students the Institute considers it important to engage those students creatively in various activities to hone their soft skills. Such activities include, inter-alia, activities in the domain of sports, culture, soft skill, and hobbies. Various students' societies like Societies for Artistic Expression, Music and Dance, Debate and Quiz, Drama and Literature, Modelling and Robotics have been formed with befitting names. These societies function under the overall guidance of the Dean - Student Welfare.

11.2.1 Proctorial Board

A Proctorial Board has been constituted at the Institute to monitor and oversee the discipline related matters and to advise the Director on corrective and other necessary measures. For imposing disciplinary measures, the Board is guided by the 'Manual on Student discipline' framed by the Institute Senate.

11.2.2 Students' Hostels

There are 18 Hostels/Halls of Residence for students. Three women's hostels cater exclusively to girl students and research scholars. Day to day management of each of the halls/ hostels is looked after by a Warden/ Superintendent appointed from amongst the members of the faculty/ officer. At every hostel, a mess committee constituted from amongst the borders oversee the messing arrangements. At the Institute level, a Joint Mess Committee (JMC), comprising representatives from every mess committee, ensures co-ordination and takes policy decisions. While the overall hostel administration is looked after by the Chief Warden, responsibility for dispute resolution is vested with the Dean (Student Welfare).

11.2.3 Sports and Games

The Athletic Club is the hub of the activities involving sports, games and physical exercises. Athletic Club plays a key role in the everyday lives of students cultivating and nurturing their talents in the sports and games arena. The students under the auspices of the Institute's athletic club participate in a variety of physical activities during their time beyond academic hours.

The campus has two play grounds - The 'Lords' in the east and the 'Oval' towards the west. These play grounds provide opportunities to the students for practising sport like cricket, football, etc. A newly constructed Basketball Ground is a new attraction. A swimming pool is open to the students and campus-inmates for nine months of the year. The gymnasium of the Institute has undergone significant modernisation in the recent past.

Sport facilities available at the Institute include Volleyball Ground, Badminton Court (Concrete), Basketball (hard court) and a well-equipped gymnasium. A Students' Amenity Centre and a Yogic practice arena have recently been added to the facilities. Activities relating to Sports and Games are overseen by the Institute Sports Board.

11.2.4 Sports Training

The first-degree curricula of the Institute require the students to opt for one of the many programmes offered under the aegis of the sports board. Apart from two regular physical instructors, a few part timers are associated in the physical training and sport related training/ coaching of the students. Stress is put on scientific training procedure for development of sports performances in different sporting events.

11.2.5 National Service Scheme (NSS)

The Institute's NSS programme is oriented towards developing socially sensitised personality in the students. NSS cadres offer complimentary assistance in academic pursuits of local destitute children in the form of free tuition. NSS units also raise and distribute books and related learning materials. Exercise books, copies, pen, pencil, and erasers are distributed on "No charge basis". During the year under review, the NSS unit organized a garment distribution programme and also organized a Voluntary Blood Donation camp in the Institute campus.

In the last session, the NSS unit of the Institute have undertaken number of social activities with the volunteers of the Institute.

- Displayed hoarding, banner at prominent places in the slum areas regarding Health, Nutrition,
 Hygiene, Sanitation, ill-effects of drug & smoking, child labour, early marriage etc. for focusing public attention and awareness.
- Numbers of dustbins have been installed in different parts of the campus to keep the campus clean under "SWACHH BHARAT ABHYAN".
- Continuing self defence activities for female students. A total of 20 girls were actively engaged in this programme.
- Organized one Women's Self Defence workshop in the campus.

11.2.6 National Cadet Corps (NCC)

The NCC unit at the Institute is affiliated to the Senior Division of 49 Bengal Battalion NCC. The Unit aims to serve the nation through appropriate activities. It also prepares the students for NCC certification examination.

As of now, the Institute Sports Board registered 40 students' cadet in the 41 Bengal Bn NCC. We have supported the unit to conduct Firing activities twice in the Institute Firing Range. But due to unavoidable circumstances, no cadets of this institute took part in the said Small Arm firing activities. In the coming year, we are planning to register more than 40 students as NCC cadets to the unit. Also this year, we are going to organize an additional programme on advantages of NCC in future endeavour of the Engineers and technocrats, having engineering degrees. They could get ample scope to crack SSB examination in the Defence Services as Engineers.

11.2.7 Students' Senate

In order to create an environment conductive for fostering growth of academic and cultural life in the Institute and to develop sound mental health of the students by engaging themselves creatively within the Institute campus, an idea of constituting a Students' body named Students' Senate was conceived. The principal objective for forming the Students' Senate has been to empower the students so that they can express themselves and act creatively in diverse areas of academics, culture, sports, and games with a sense of fraternity.

With all bonafide students as its members, the General Council of the Students' Senate is elected by its members. The General Council comprises Secretaries, Treasurers from various Students' Academic Societies, Students' Societies of Creative Expressions and Captains of Students' Clubs of Games and Sports.

The executive committee of the Senate is constituted mostly from amongst the members of the general council through a process of election. The Director nominates the President and the Vice-President of the executive committee from amongst the members of the faculty.

11.2.8 Students' Societies

Various students' clubs/societies are active; the societies provide platforms to students to pursue extra-curricular activities and hobbies. The Students' Societies active in 2019-20 include:

1)	Camera Buff	The Cine Club
2)	Catharsis	The Photographic Society
3)	Code IIEST	The Coding Club
4)	Debsoc	The Debating Society
5)	Euphony	The Music Club
6)	Les Thespiens	The Drama Club
7)	Lit Soc	The Literary Society
8)	Quiz Maniac Being	The Quiz club
9)	Reflex-o Beta	The Dance Club
10)	Robodarshan	The Robotic Society
11)	SCAGE	The Society for Creative Arts and Green Environment
12)	Entrepreneurship Development Cell	The Society for Entrepreneurship Development and Innovation
13)	Society of Games and Sports	The Society for Games and Sports activities
14)	Club on Engineering Safety (ENSAFE)	The Club for addressing Engineering Safety
15)	Vivekananda Youth Circle	The Club for promoting eternal ideals preached by Swami Vivekananda
16)	Animal Welfare Club	The Club for taking care of stray animals staying and moving inside the institute campus

At the 'Students' Centre for Creative Expression', the students practise dramatics, music, photography, quiz and debates, etc. Students interested in scientific modelling and Robotics, find

ample scope to develop innovative models, including robots. The students' Robotics club has developed a number of different types of Robots, including Robots with vision. A Coding Club nurtures the students to hone their software development acumen. Instruo, the inter-collegiate techno-management festival and the REBECA, the Annual Students' Social are the inter-collegiate events that cause reverberations in the campus through hundreds of foot-falls.

LitSoc

LitSOC, the Literary Society of IIEST Shibpur was established as a sanctuary, a safe haven for all its students, where everyone is free to express themselves. LitSoc aims to provide a platform, not to just creative writers and avid readers, but to all the like-minded individuals to come together and learn the art of expression. The very root of the Society is in creating an atmosphere of creativity and out-of-the-box thinking through countless successful events.

Reflexo-Beta

The dance club is a hub for all the dancers in the campus to dance out their motivations. The club has members starting from freshers to research scholars - who practise a wide range of dance form from Indian classicals like Kathak, Bharatnatyam, Kathakali to western forms like hip hop, dubsteps, contemporary, Bollywood and several other dance forms. The club is focused in the art and is interested in promoting message through concept expression forms and its compositions.

Camera Buff

Camerabuff is the official film club of IIEST, Shibpur. In this club, the knowledge and ideas of different aspects of cinema are reviewed. Apart from that the knowledge about the technicalities of a cinema is also imparted to the students of this college. As a whole, students enjoy every bit of what thet do and what they watch for creating a good bond and togetherness with the today's society.

Les Thespians

Les Thespians, the official dramatics society of IIEST Shibpur was founded back in 2009. It has produced many successful and tremendously praised theatrical productions. The society helps the theatre enthusiasts of the Institute to build a common platform. Les Thespians produces many home production dramas throughout the year and invites professional drama groups as well to perform on various occasions.

Euphony

Music: the word that brings to our memory the reverberations of our favourite songs and artists. It is much more than a few vocal melodies or instrumental rhythms. It is an art; it is an emotional expression. And at Euphony, we respect, love, practice, and spread the joy of this art form. It isn't just a place for guitarists, drummers, or singers; it consists of an assortment of people who love music, who find passion in music and enjoy it. From folk songs to electronic compositions, we house a multitude of music styles. So, while our namesake may be synonymous to pleasing sounds, the music society, at the end of the day, also becomes a music learning school, a family, a home that nurtures talents of young musicians and helps them flourish.

Quizmanic BEings

Quizmaniac BEings started in 2008 with regular sessions being conducted in N-235 Classroom and since then it has grown in size. We aim to change the way people think about quizzing and shed their redundant ideas about it as its questions have come to privilege not just memory but also breadth, deduction and lateral thinking. This new shape was a response to the rise of the internet. By conducting regular open quiz sessions in college create a conducive atmosphere for quizzing. The biggest trick to succeed in a quiz isn't just knowledge or memorizing facts but the inherent curiosity to find out The Why.

DebSoc

The aim of the society is to serve as a platform for avid orators and help build a debating culture on campus. The activities hone speaking skills, instil confidence and helps develop public speaking abilities.

Robodarshan

Robodarshan is a club founded in 2009 to invoke interest in students about robotics. Robodarshan's motto is 'there is nothing a bot can't do. The primary activities of Robodarshan includes conducting lecture sessions on robotics, the lecture sessions are followed by hands-on sessions, where Robodarshan mentors in making a robot for specific tasks. Robodarshan conducts DIY, exclusively for the first-year students of IIEST and a plethora of fun robotics competitions, which goes by the name Automaton, a part of Instruo – the techno-management fest of IIEST. Robodarshan also collaborates with other departments of IIEST Shibpur to organise Robotics events.

Entrepreneurship Development Cell

Entrepreneurship Development Cell, IIEST Shibpur (EDC IIESTS) was set up in the year 2009 under the AICTE initiative and is working under the guidance of the Department of Human Resources Management, IIEST Shibpur in coordination with NRDC-IIEST IFC, TCGTBI and now with IIC IIESTS. With the sole aim of enhancing the standard of innovations around the region of IIEST Shibpur, Entrepreneurship Development Cell focuses on fostering the corporate culture onto the pool of IIEST students through several external activities like raising the awareness on the field of Medium, Small and Medium Enterprises with the involvement of the students from IIEST & Non-IIEST and faculty under a single pool of working community.

CodeIIEST

In this age of increasing automation, programming is not limited to only computer science and related fields. Every competent engineer needs to know how to program. This makes Code IIEST one of the most important clubs in the institute. As of now it has four different chapters - Competitive Programming, Machine Learning, Security, and Open Source. A platform is created, which allows students to gain assistance and mentorship to come together to learn and solve algorithmic challenges, participate in various contests all over the globe, develop web and system applications and solve intriguing problems enhancing their coding ability. Aim of the club is to propagate the enthusiasm for coding in the Institute and especially amongst freshmen. The secret of getting ahead is getting started and this club provides every student with the right start.

Catharsis

It is a family of engineers, who found their solace in photography, their passion, their expression, their catharsis. They say, there are things that nobody would see, had a photographer not captured them, and at Catharsis, the young shutterbugs try to freeze those moments with their shutters and bring out the greater truths of life. While Catharsis is now decade-old club, this student's society began its journey as BECPhos – B E College Photographic Society back in 1971. The club welcomes all photography enthusiasts among college students, beginners and old-timers alike, to explore this field of art and bring out their creative gifts.

Society of Games and Sports

Since the inception of this glorious Institute, the two major wonders of the campus is the Oval and Lords Ground and the Gymnasium formed in the later years. Fostering the sporting culture, this

society has been serving the Institute right from its very establishment. Firstly, known as the Athletic Club of IIEST, Shibpur had a unique structure which got renamed as the Sports Board of IIEST, Shibpur. It boasts of its age-old traditions and never ceases to stop excelling.

SCAGE (Society for Creative Arts and Green Environment)

SCAGE is a platform where students get to express themselves in all forms of Art domains. The club intends to nurture Creativity within oneself, while keeping in mind one's responsibility towards conserving Green Environment.

Club on Engineering Safety (ENSAFE)

The ENSAFE is said to be dedicated to address the burning issues of safety across various engineering domains and spread awareness of the same in the society.

Vivekananda Youth Circle

The Vivekananda Youth Circle is said to provide excellent opportunity to those students of the institute, who are striving to work, think and build their characters on the eternal ideals preached by Swami Vivekananda by reading and organizing appropriate literature.

Animal Welfare Club

The Animal Welfare Club is said to take care of stray animals staying and moving inside the institute campus systematically and efficiently as a self-less job.

11.2.9 Infrastructural Development in Sports Board

The global pandemic (Covid-19) not only affected Academic fields but also ruined the participatory actions in the field of games and sports too. Like other academic institutes, the IIEST Shibpur Sports Board had no scope to conduct/organize any activities during the session 2020-21.

Moreover, in spite of adversities, the institute authority helped a lot to develop the Students' Sports infrastructure in this crisis. For Sports Facility development programme, the Sports Board has taken few steps:

- 1. Installation of Electronic LED Cricket score board at OVAL.
- 2. Renovation of the existing wooden heritage cricket score board at OVAL.
- 3. Installation of 1000 L PVC water tank at OVAL.

- 4. Installation of Glow-sign board at the entrance of OVAL.
- 5. Renovation of the galleries of the OVAL ground.
- 6. Renovation work of the gymnasium is in progress.

Moreover, the Alumni Association of the Institute also developed an international standard synthetic poly-grass coated volleyball court. It is to be handed over to Sports Board shortly.

Annual Accounts

ANNUAL ACCOUNTS FOR THE YEAR 2021-22

CONTENTS

Sl. No.	Description
1	Balance Sheet as on 31 st March, 2022
2	Income and Expenditure for the year ended 31 st March, 2022
3	Receipts and Payments Accounts for the year ended 31st March, 2022
4	Schedule – 1 : Corpus Fund / Capital Fund
5	Schedule – 2 : Designated / Earmarked / Endowment Funds
6	Schedule – 2A : Endowment Funds
7	Schedule – 3 : Current Liabilities & Provisions
8	Schedule – 3(a): Sponsored Projects
9	Schedule – 3(b): Sponsored Fellowships and Scholarships
10	Schedule – 3(c): Unutilized Grants from UGC, Government of India and State Governments
11	Schedule – 4 : Fixed Assets
12	Schedule – 4A: Non-Recurring (Creation of Capital Assets out of Non-Recurring Grant)
13	Schedule – 4B : Non-Plan
14	Schedule – 4C : Intangible Assets
15	Schedule – 4D : Others
16	Schedule – 5 : Investments from Earmarked / Endowment Funds
17	Schedule – 5A: Investments from Earmarked / Endowment Funds (Fund-wise)
18	Schedule – 6 : Investment – Others
19	Schedule – 7 : Current Assets
20	Schedule – 8 : Loans and Advances
21	Schedule – 9 : Academic Receipts
22	Schedule – 10 : Grants / Subsidies (Irrevocable Grants received)
23	Schedule – 11 : Income from Investments
24	Schedule – 12 : Interest Earned
25	Schedule – 13: Other Income
26	Schedule – 14 : Prior Period Income
27	Schedule – 15 : Staff Payments & Benefits (Establishment Expenses)
29	Schedule – 16 : Academic Expenses Schedule – 17 : Administrative and General Expenses
30	Schedule – 17: Administrative and General Expenses Schedule – 18: Transportation Expenses
31 22	Schedule – 19 : Repairs & Maintenance
32 22	Schedule – 20 : Finance Costs
33	Schedule – 21 : Other Expenses
34 35	Schedule – 22 : Prior Period Expenses
35 36	Schedule – 23 : Notes on Accounts
	PROVIDENT FUND ACCOUNT:
37	Balance Sheet as on 31 st March, 2022
38	Receipts and Payments Accounts for the year ended 31 st March, 2022
39	Income and Expenditure for the year ended 31st March, 2022
40	Annexure – I Endowment Fund Fixed Deposits as at 31 st . March, 2022
41	Annexure – II Earmarked Fund Fixed Deposits as at 31 st . March, 2022
42	Annexure – III & IV Term Deposits with Bank (General) as at 31 st . March, 2022
43	Annexure – V Bank Balance in Current A/c as at 31 st . March, 2022
44	Annexure – VI Bank Balance in Savings A/c as at 31 st . March, 2022
45	Annexure – VII List of unadjusted Advance as at 31 st . March, 2022
45 46	Annexure – VIII List of unadjusted Advance given to Suppliers as at 31 st . March, 2022
43 47	Annexure – IX List of unadjusted Advance given to Students/Research Scholars as at 31 st
₹/	March, 2022
	Maich, 2022

BALANCE SHEET AS ON 31ST MARCH, 2022

Amount in Rupees

SOURCES OF FUNDS	Schedule	Current Year	Previous Year
CORPUS / CAPITAL FUND	1	2,52,30,69,220	2,48,56,13,429
DESIGNATED / EARMARKED / ENDOWMENT FUNDS	2	93,24,03,176	87,51,84,999
CURRENT LIABILITIES & PROVISIONS	3	50,49,25,191	50,85,46,692
TOTAL		3,96,03,97,587	3,86,93,45,120

APPLICATION OF FUNDS	Schedule		Current Year	Previous Year
FIXED ASSETS	4		1,32,41,53,099	1,37,88,83,362
- Tangible Assets		1,29,76,48,787		-
- Capital Work in Progress		-		
- Intangible Assets		2,65,04,312		-
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5		75,10,18,761	72,29,02,442
- Long Term		31,45,93,513		
- Short Term		43,64,25,248		
INVESTMENTS - OTHERS	6		2,62,56,034	1,39,29,320
CURRENT ASSETS	7		1,58,00,77,640	1,53,26,93,467
LOANS, ADVANCES & DEPOSITS	8		27,88,92,053	22,09,36,528
TOTA	L		3,96,03,97,587	3,86,93,45,120

SIGNIFICANT ACCOUNTING POLICIES 23
CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS 24

Dy. Registrar (Finance) Registrar Director

For DEBASIS BANDYOPADHYAY & CO. Chartered Accountants (Debasis Bandyopadhyay) Proprietor Membership No. - 057861

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2022

Amount in Rupees

Particulars	Schedule	Current Year	Previous Year
INCOME			
Academic Receipts	9	20,47,79,480	17,16,00,803
Grants / Subsidies	10	1,39,27,86,078	1,31,10,26,092
Income from Investments	11	76,18,252	65,92,168
Interest earned	12	93,18,218	2,19,90,992
Other Income	13	73,19,596	98,94,758
Prior Period Income	14	35,30,871	10,63,475
TOTAL (A)		1,62,53,52,495	1,52,21,68,288
EXPENDITURE			
Staff Payments & Benefits (Establishment expenses)	15	1,16,11,78,442	1,00,21,52,437
Academic Expenses	16	19,02,47,741	19,55,63,205
Administrative Expenses	17	9,77,54,082	8,68,84,221
Transportation Expenses	18	2,37,701	10,48,458
Repairing & Maintenance	19	3,85,18,890	3,50,46,480
Depreciation	4	16,22,27,849	16,35,67,455
Finance Costs	20	38,900	20,304
Other Expenses	21	-	655
Prior Period Expenses	22	5,53,455	12,37,931
TOTAL (B)		1,65,07,57,060	1,48,55,21,146
Balance being excess of Income over Expenditure (A-	В)	(2,54,04,565)	3,66,47,142
Transfer to / from Designated Fund			
Building fund			
Others (specify)			
Balance being Surplus / (Deficit) carried to Capital Fu	nd	(2,54,04,565)	3,66,47,142

Significant Accounting Policies 23
Contingent Liabilities and Notes to Accounts 24

Dy. Registrar (Finance) Registrar Director

For DEBASIS BANDYOPADHYAY & CO. Chartered Accountants (Debasis Bandyopadhyay) Proprietor Membership No. - 057861

RECEIPTS AND PAYMENTS ACCOUNTS FOR THE YEAR ENDED 31st MARCH 2022

וורכרוו וז אונס		200013100	AD I ALIMENTES ACCOUNTS FOR THE LEAR ENDED STATINGHIER EVER	7-7	
RECEIPTS	CURRENT YEAR	CURRENT YEAR PREVIOUS YEAR	PAYMENTS	CURRENT YEAR	CURRENT YEAR PREVIOUS YEAR
I Opening Balances			l Expenses		
a) Cash Balances	1	1	a) Establishment Expenses	1,15,65,28,462	1,00,42,84,652
b) Bank Balances			b) Academic Expenses	19,02,76,674	19,54,51,186
i. in Current Accounts	18,64,81,076	14,53,73,022	c) Administrative Expenses	9,65,06,377	8,95,74,847
ii. Savings Accounts	1,07,95,51,996	89,65,55,308	d) Transporatation Expenses	2,37,701	10,48,458
			e) Repairs & Maintenance	3,75,77,510	3,64,74,580
c) Cheques in hand	ı	ı	f) Prior Period Expenses	ı	1
			g) Other Expenses	38,880	17,873
II Grants Received			II Payments against	12,35,734	3,84,323
			Earmarked/Endowment Funds		
a) From Govt. of India	1,42,21,86,078	1,49,42,25,000			
b) From State Govt.	ı	ı	III Payments againsts Sponsored/Scheme	20,90,77,481	21,17,59,409
c) From UGC-Non Plan	1	1			
c) Form Other Sources (Details)	1	1	IV Payments against	2,16,96,087	2,61,04,666
			Sporsored/Fellowship/Scholarship		
			:		
III Academic Receipts	21, 19, 64, 126	17,76,90,472	V Investments and Deposits made		
			a) Out of Earmarked/Endowments	70,00,000	56,01,398
			Funds		
IV Receipts against Earmarked/Endowment	2,03,79,307	3,39,63,449	b) Out of Own Funds (Investments-	ı	1
Funds			Others)		
V Receipts againsts Sponsored/Scheme	17,20,49,310	22,94,18,249	VI Term Deposits with Schedule Banks	1	1
VI Receipts against	1,75,01,326	2,29,19,079	VII Expenditure on Fixed Assets and		
Sporsored/Fellowship/Scholarship			Capital Works-in-progress		
			a) Fixed Assets	9,95,94,933	10,43,99,173
VII Income on Investments from			b) Capital Works-in-Progress	1	•
a) Earmarked/Endowment Funds	1,00,84,211				
b) Other Investments	12,28,013	13,17,307	VIII Other Payments including Statutory	47,09,80,589	33,20,64,317
			Payments		
					Contd.

228

	RECEIPTS	CURRENT YEAR	CURRENT YEAR PREVIOUS YEAR	PAYMENTS	CURRENT YEAR	CURRENT YEAR PREVIOUS YEAR
>	VIII Interest Received on			IX Refunds of Grants	ı	1
	a) Bank Deposits b) Loans & Advances			X Deposit and Advances	1,28,92,879	14,93,42,572
	c) savings bank Accounts d) Providend Fund	93,18,218	2,23,81,42 <i>/</i> -	XI Other Payments (including Finance Cost)		1
	IX Investments Encashed	1,75,129	1,71,835	XII Other Payments (including prior period /write off)	1	1
	X Other Income (Including Prior Period Income)	70,45,177	97,82,738			
×	XI Deposit and Advances	1,58,96,669	3,92,46,030	XIII Closing Balances a) Cash Balances b) Bank Balances		1
×	XII Miscellaneous Receipts including Statutory Receipts	46,36,09,865	31,63,17,206	i. in Current Accounts	18,63,50,539	18,64,81,076
<u>×</u>	XIII Any Other Receipts	1	1,67,89,558	ii. Savings Accounts	1,12,74,76,655	1,07,95,51,996
	(Tuition Fees Received, to be refunded)			c) Cheques in hand	1	1
		3,61,74,70,501	3,42,25,40,526		3,61,74,70,501	3,42,25,40,526

For DEBASIS BANDYOPADHYAY & CO. Chartered Accountants (Debasis Bandyopadhyay) Proprietor Membership No. - 057861

Dy. Registrar (Finance)

SCHEDULE - 1 CORPUS FUND / CAPITAL FUND

	Particulars	Current Year	Previous Year
	Balance at the beginning of the year	2,48,56,13,429	2,34,73,20,330
Add:	Contributions towards Corpus / Capital Fund	-	-
Add:	Grants from UGC, Government of India and State Government to the extent utilized for capital expenditure	-	8,34,63,749
Add:	Assets Purchased out of Earmarked Funds\Assets Purchased out of Sponsored Projects, where ownership vests in the institutions	6,33,34,716	1,73,83,711
Add:	Assets Donated / Gifts received	-	-
Add:	Other Additions / (Deletions)	(4,74,360)	17,90,881
Add:	Excess of Income over Expenditure transferred from the Income & Expenditure Account	(2,54,04,565)	3,66,47,142
	Total	2,52,30,69,220	2,48,66,05,814
Deduct	Adjustment of excess debit balances under various heads	-	9,92,385
Deduct	Deficit transferred from the Income & Expenditure Account	-	-
	Balance at the end of the year	2,52,30,69,220	2,48,56,13,429

SCHEDULE - 2 DESIGNATED / EARMARKED / ENDOWMENT FUNDS

		A.	Particulars						B. Utilization /	'Expenditure t	B. Utilization / Expenditure towards objective funds	ive funds	
Fund wise breakup	reakup	a) Opening balance	b) Additions during the year	c) Income from investments made of the funds	d) Accrued interest on investments/ advances	e) Interest on Savings Bank a/c	f) Other additions (specify nature)	Total (A)	i) Capital Expenditure	ii) Revenue Expenditure	iii) Transferred to Schedule 3(a)	Total (B)	Closing balance at the year end (A- B)
1 Fund - NSS	NSS	3,23,019	ı	ı	1	11,299	1	3,34,318	1	1	,	ı	3,34,318
Corpus Fund - 2 Future Development	Fund -	49,65,72,652	ı	1	1,88,99,297	1	ı	51,54,71,949	1	1	,	1	51,54,71,949
Institutional 3 Development Fund	ional	22,95,88,895	2,08,30,376	1	1,13,72,246	1		26,17,91,517	1	16,335	1	16,335	26,17,75,182
Students' Welfare Fund	ts' e Fund	2,51,218	2,05,182	1	1	33,520	ı	4,89,920	1	53	1	53	4,89,867
Corpus Fund - a/c Teqip	Fund - ip	1,62,16,934	24,751	1	905'95'9	1,00,158	ı	1,69,98,349	1	1	ı	1	1,69,98,349
Faculty Development	pment	7,92,295	-	100	31,351	666	1	8,24,745	-	1	1	-	8, 24, 745
Fquipment Replacement	nent ement	7,24,414	-	37,672	54,944	1,450	ı	8,18,480	-	1	1	-	8, 18, 480
Maintenance Fund - a/c	nance a/c	2,06,75,445	-	-	10,02,259	53	1	2,16,77,757	-	1	1	-	2,16,77,757
Depreciation 9 Fund - a/c	iation a/c	84,68,647	1	-	4,27,325	2,685	ı	88,98,657	-	1	1	-	88,98,657
Staff Development	pment	126,97,971	1	1	4,89,873	74	ı	1,01,87,918	-	-	ı	-	1,01,87,918
11 Digital Education Hub	on Hub	896'02'66	1	-	-	-	1	896'02'66	4,80,000	1,48,886	1	6,28,886	93,42,082
12 Endowment Funds	ment	8,19,02,541	1	15,56,422	19,53,355	6,93,502	ı	8,61,05,821	1	5,21,949	1	5,21,949	8,55,83,872
Current Year	rear	87,51,84,999	2,10,60,309	15,94,194	3,48,87,156	8,43,740	ı	93,35,70,399	4,80,000	6,87,223	1	11,67,223	93,24,03,176
Previous Year	Year	79,90,61,207	3,39,41,189	-	4,18,12,104	7,32,476	ı	87,55,46,976	1	3,61,977	-	3,61,977	87,51,84,999

SCHEDULE - 2A ENDOWMENT FUNDS

Sub-schedule to support the figures in the column "Endowment Funds" in the schedule "Earmarked / Endowment Funds" forming part of the Balance Sheet

		Opening Balance	Balance	Additions during the year	ing the year	Total	tal	Expenditure		Closing Balance	
SI. No.	Name of the Endowment	Endowment	Accumulated Interest	Endowment	Interest	Endowment (3+5)	Accumulated Interest (4+6)	on the object during the year	Endowment	Accumulated Interest	Total (10+11)
Н	2	3	4	5	9	7	8	6	10	11	12
Н	Von Newman Scholarship Fund	53,747	26,954		2,950	53,747	29,904		53,747	29,904	83,651
2	Dr. S. P. Brambha Memorial Merit Sch	1,06,895	52,079		5,867	1,06,895	57,946		1,06,895	57,946	1,64,841
3	Prabir Sengupta Memorial Prize Fund	7,599	6,093		851	7,599	6,944		7,599	6,944	14,543
4	Renu Chakraborty V. L. Fund	55,737	29,165		3,334	55,737	32,499		55,737	32,499	88,236
2	Dr. Fazlue Kader Memorial Scholarshi	1,15,629	93,720		11,587	1,15,629	1,05,307		1,15,629	1,05,307	2,20,936
9	J. N. Neogi Students' Benefit Fund	72,248	59,254		7,241	72,248	66,495		72,248	66,495	1,38,743
7	Sunita Memorial Prize Fund	15,407	12,636		1,544	15,407	14,180		15,407	14,180	29,587
8	Dr. B. N. Dey Scholarship Fund	37,519	30,768		3,761	37,519	34,529		37,519	34,529	72,049
6	Kunja Kusum Scholarship Fund	77,444	37,733		4,250	77,444	41,983		77,444	41,983	1,19,427
10	Sanat Kanta Nirmalya Basini Biswas G	20,087	10,508		1,205	20,087	11,713		20,087	11,713	31,800
11	Prof. N. N. Sen Memorial Scholarship	39,432	19,778		2,162	39,432	21,940		39,432	21,940	61,372
12	Acharya P. C. Roy Scholarship	91,587	44,661		5,027	91,587	49,688		91,587	49,688	1,41,275
13	Ramlal Nandy & Ganoda Sundari Nanc	46,928	22,865		2,574	46,928	25,439		46,928	25,439	72,367
14	Liluah Iron Works Ltd. Scholarship	46,928	24,303		2,575	46,928	26,878		46,928	26,878	73,806
15	R & K Ahmed Merit Scholarship	56,769	28,468		3,116	56,769	31,584		56,769	31,584	88,353
16	The President of India Gold Medal	56,769	3,511		3,116	56,769	6,627		56,769	6,627	63,396
17	Alumni Donation Seminar Series	3,52,521	2,72,161		37,209	3,52,521	3,09,370		3,52,521	3,09,370	6,61,891
18	Jogesh Chandra Banerjee Memorial St	4,78,376	2,39,879		26,254	4,78,376	2,66,133		4,78,376	2,66,133	7,44,509
19	Anir Burnwal Memorial Merit cum Me	1,07,110	53,410		6,568	1,07,110	59,978		1,07,110	59,978	1,67,088

		Opening Balance	Balance	Additions during the year	ing the year	Total	- E	Expenditure		Closing Balance	
SI. No.	. Name of the Endowment	Endowment	Accumulated Interest	Endowment	Interest	Endowment (3+5)	Accumulated Interest (4+6)	on the object during the year	Endowment	Accumulated Interest	Total (10+11)
20	Jaya Smriti Puroskar (BESUS)	24,189	10,176		2,515	24,189	12,691	2,000	24, 189	10,691	34,879
21	Jaya Smriti Puroskar	21,374	15,164	,	1,829	21,374	16,993		21,374	16,993	38,367
22	BEC (55) Scholarship Fund	2,81,033	2,40,967		26,834	2,81,033	2,67,801		2,81,033	2,67,801	5,48,834
23	BEC Sholarship	1,00,592	(5,174)	1	30,543	1,00,592	25,369		1,00,592	25,369	1,25,961
24	BECA - 1964	2,30,040	1,87,061		25,617	2,30,040	2,12,678		2,30,040	2,12,678	4,42,718
25	Prof. S. C. Dasgupta Gold Medal	1,43,098	78,822		29,241	1,43,098	1,08,063	19,092	1,43,098	88,971	2,32,069
26	Siddhananada Memorial Lecture	53,875	56,744	•	10,939	53,875	67,683		53,875	67,683	1,21,558
27	BESU Endowment Fund	50,00,000	31,17,347	1	4,17,227	50,00,000	35,34,574		50,00,000	35,34,574	85, 34, 574
28	Prabodh Chandra Mitra Scholarship Fu	1,53,625	17,607	1	9,430	1,53,625	27,037		1,53,625	27,037	1,80,662
29	Dhaibat Ghosh Memorial Scholarship	4,33,732	3,38,274	1	43,338	4,33,732	3,81,612		4,33,732	3,81,612	8,15,344
30	Prof. P. C. Mitra Memorial Award	51,458	(7,169)	1	11,532	51,458	4,363		51,458	4,363	55,822
31	Bijoy Ashu Chair Professor Fund	1,00,48,394	57,21,307	1	7,28,845	1,00,48,394	64,50,152		1,00,48,394	64,50,152	1,64,98,546
32	Prabodh Kumar Chatterjee Fund	1,94,000	46,331	•	16,752	1,94,000	63,083		1,94,000	63,083	2,57,083
33	Rai Sahib Amulya Chandra Mitra Endo	3,00,000	1,11,759	•	30,147	3,00,000	1,41,906		3,00,000	1,41,906	4,41,906
34	Rai Sahib Amulya Chandra Mitra Endo	2,00,000	1,83,374	1	10,911	2,00,000	1,94,285		2,00,000	1,94,285	3,94,285
35	S. C. Dasgupta Memorial Fund	11,00,000	11,04,350	1	78,532	11,00,000	11,82,882		11,00,000	11,82,882	22,82,882
36	Prabodh Kumar Chatterjee Fund	50,000	91,878	1	2,533	50,000	94,411		50,000	94,411	1,44,411
37	Madhusudan Bhattacharjee Memorial	2,15,000	12,282	1	25,348	2,15,000	37,630	12,000	2,15,000	25,630	2,40,630
38	B. K. Bose Lecture Fund	2,25,000	56,989	1	14,019	2,25,000	71,008		2,25,000	71,008	2,96,008
39	Students Reward Programme Fund	16,50,000	2,53,281	-	77,962	16,50,000	3,31,243		16,50,000	3,31,243	19,81,243
4	Sougata Mukherjee Memo. Award for	5,09,507	1,19,242		56,750	5,09,507	1,75,992	30,000	5,09,507	1,45,992	6,55,499
41	Suhas Choudry Swimming Excellence	1,22,132	11,557	•	8,076	1,22,132	19,633		1,22,132	19,633	1,41,765
42	Ujjal Dasgupta Scholarship Corpus Fur	13,61,590	1,46,656		1,59,819	13,61,590	3,06,475	1,17,000	13,61,590	1,89,475	15,51,065
43	GAABESU Admission Grant - 2	5,82,400	2,50,441		30,285	5,82,400	2,80,726		5,82,400	2,80,726	8,63,126
4	Prof A K Seal Gold Medal	1,00,000	26,473		35,883	1,00,000	62,356	28,722	1,00,000	33,634	1,33,634

		Opening Balance	Balance	Additions during the year	ing the year	Total	le	Expenditure		Closing Balance	
SI. No.	Name of the Endowment	Endowment	Accumulated Interest	Endowment	Interest	Endowment (3+5)	Accumulated Interest (4+6)	on the object during the year	Endowment	Accumulated Interest	Total (10+11)
45	BEC Prize	2,07,870	35,087		1	2,07,870	35,087		2,07,870	35,087	2,42,957
46	TATA Steel Chair Professor	8,18,006	(98,926)		1	8,18,006	(98,926)		7,19,080	1	7,19,080
47	Besus Foundation (GAABESU)	81,66,380	64,50,383		7,30,162	81,66,380	71,80,545	1,62,778	81,66,380	70,17,767	1,51,84,147
48	K K Pal Chaudhuri Arch	50,000	39,485		5,571	50,000	45,056		50,000	45,056	92,056
49	Prof. P. C. Mitra Memorial Award - 2	1,00,000	66,183		5,041	1,00,000	71,224		1,00,000	71,224	1,71,224
20	Amiya Basu Endowment Fund	64,44,262	9,44,234		2,75,538	64,44,262	12,19,772		64,44,262	12,19,772	76,64,034
51	Arun Ch Mitra, Ganesh Mitra, Sindhubala Mitra Memorial Fund	2,00,000	(49,828)		92,001	2,00,000	42,173	42,173	2,00,000	1	2,00,000
52	Alpona Banerjee	99,02,719	17,61,828		5,14,904	99,02,719	22,76,732		99,02,719	22,76,732	1,21,79,451
53	Aveek Guha Memorial Gold	1,15,000	(33,450)		52,542	1,15,000	19,092	19,092	1,15,000	1	1,15,000
54	Provat Chandra Neogi	27,00,000	3,27,028		1,29,600	27,00,000	4,56,628	50,000	27,00,000	4,06,628	31,06,628
55	Tarun Kanti Ghosh Memorial	3,47,532	13,838		20,852	3,47,532	34,690	20,000	3,47,532	14,690	3,62,222
56	Sayantan Biswas Memorial	1,60,000	(8,545)		27,637	1,60,000	19,092	19,092	1,60,000	1	1,60,000
57	Ganesh Ch. Mukherjee Memorial Fund	50,00,000	,		3,33,333	50,00,000	3,33,333		50,00,000	3,33,333	53,33,333
		-	-	-		•		-	•	-	
	Total	5,92,01,540	2,27,01,002	•	42,03,279	5,92,01,540	2,69,04,282	5,21,949	5,91,02,614	2,64,81,259	8,55,83,872

SCHEDULE -3 CURRENT LIABILITIES & PROVISIONS

			Current Year	Previous Year
Α	CURRENT LIABILITIES			
	1. Deposits from staff		-	-
	2. Deposit from students		1,78,44,400	1,62,83,400
	3. Sundry Creditors			
	a) For Goods and Services			
	b) Others			
	4. Deposit - Others (including EMD, Security Deposit)		40,42,011	27,30,043
	5. Statutory Liabilities (TDS, WC Tax, CPF, GIS, NPS)			
	a) Overdue			
	b) Others		67,27,400	59,34,649
	6. Other Current Liabilities			
	a) Salaries		-	-
	b) Receipts against sponsored projects		40,11,79,313	43,35,72,409
	c) Receipts against sponsored fellowships and scholarships		1,45,03,656	2,23,55,683
	d) Unutilized Grants		2,94,46,851	46,851
	e) Grants in advance		-	-
	f) Other funds		-	-
	g) Audit Fees		7,00,000	8,00,000
	h) Other liabilities [Miscellaneous Recoveries]		24,79,234	23,77,824
	i) Other liabilities [Professional Charges]		2,83,200	2,59,600
	j) Other liabilities [Electricity Charges]		22,99,122	18,24,592
	k) Other liabilities [E-Journal / E-Books]		-	-
	I) Other liabilities [Manpower Hiring]		31,21,593	29,36,058
	m) Other liabilities [Security Service]		23,71,207	26,36,025
	n) Other liabilities [Tuition Fees refundable]		1,99,27,204	1,67,89,558
		Total (A)	50,49,25,191	50,85,46,692
В	PROVISIONS			
	1. For taxation			
	2. Gratuity			
	3. Superannuation Fund			
	4. Accumulated Leave Encashment			
	5. Trade Warranties / Claims			
	6. Others (Specify)			
		Total (B)	-	-
	Total (A + B)		50,49,25,191	50,85,46,692

SCHEDULE - 3(a) SPONSORED PROJECTS

S.

		Opening Balance	Balance	Receipts /		Evenediture	Closing Balance	Balance
I. No.	Name of the Project	Credit	Debit	Recoveries during the year	Total	during the year	Credit	Debit
1	2	3	4	2	9	7	8	6
П	Research Project Accounts	38,15,63,275	1	8,89,13,146	47,04,76,421	14,57,55,095	32,47,21,326	1
2	Consultancy Fund	4,56,47,327	'	9,09,35,522	13,65,82,849	6,66,51,483	6,99,31,366	1
3	Testing Fees Fund	63,61,806	-	2,27,212	65,89,018	62,398	65,26,620	-
		1	1		ı		-	1
	Total	43,35,72,409		18,00,75,880	61,36,48,289	21,24,68,976	40,11,79,313	•

SCHEDULE - 3(b) SPONSORED FELLOWSHIPS AND SCHOLARSHIPS

			Opening Balance	Balance	Transactions during the year	rring the year	Closing Balance	Salance
SI. No.	Name of Sponsor		Credit	Debit	Credit	Debit	Credit	Debit
н	2		3	4	5	9	7	∞
П	CSIR - Fellowship and Contingency		6,93,813	1	9,110		7,02,923	
2	Inspire Faculty - DST		1	(21,51,531)	53,66,757	26,94,936	5,20,290	
3	Inspire Fellowship -DST		1,00,04,936		85,45,958	1,35,71,766	49,79,128	•
4	QIP Contingency		15,000	1	48,193	63,193	1	
5	UGC Fellowship Post Doctoral		7,60,058	1			7,60,058	1
9	UGC Raman Fellowship Post Doctoral		43,02,068	1			43,02,068	•
7	Other Miscelleneous Grant - DST		2,92,614	1			2,92,614	
8	Other Misc. Receipts		30,56,511	-		30,56,511	1	1
6	Faculty Recharge Program / BSR Research Fellowship (UGC)	JGC)	1	(1,17,22,094)	33,35,790	48,86,566	1	(1,32,72,870)
10	INSA Scientist (Others)		43,567	1	56,433	70,082	29,918	1
11	Visvesvaraya Phd Fellowship		10,28,021	-	15,08,899	17,83,758	7,53,162	1
12	UGC D S Kothari Fellowship		7,77,846	-			7,77,846	1
13	GIAN Course		1,46,324	-	4,453	53	1,50,724	1
14	Stipend - Means cum Merit Scholarship		30,790	1			30,790	1
15	NREF		12,04,136	-			12,04,136	1
			-				1	1
	Total		2,23,55,683	(1,38,73,625)	1,88,75,593	2,61,26,865	1,45,03,656	(1,32,72,870)

SCHEDULE - 3(c) UNUTILIZED GRANTS FROM UGC, GOVERNMENT OF INDIA AND STATE GOVERNMENTS

	Current Year	Previous Year
Grants : Government of India		
Balance b/f	(25,09,51,812)	(35, 10, 77, 405)
Add : Grants during the year		
Non-Recurring (for creation of capital assets)	2,94,00,000	ı
Recurring	1,39,27,86,078	1,39,27,86,078 1,49,42,25,000
Add : Interest earned on grant	ı	3,90,434
Total (a)	1,17,12,34,266	1,14,35,38,029
Less : Refunds	1	1
Less : Utilized for Revenue Expenditure	1,39,27,86,078	1,39,27,86,078 1,31,10,26,092
Less : Utilized for Capital Expenditure	-	8,34,63,749
Total (b)	1,39,27,86,078	1,39,44,89,841
Unutilized balance carried forward (a-b)	(22,15,51,812)	(25,09,51,812)

Unutilized balance carried forward consists of -

2,94,00,000 1. Unutilized balance on a/c of Non-recurring grant (in Schedule 3) 25,09,51,812 2. Excess expenditure over sanctioned amount on a/c of Recurring grant transferred to Schedule 7

25,09,51,812

Note 1 : Non-recurring grant Rs. 2.94 crore received during the year has been advanced to CPWD for the work for which the grant has been received; however, the work is pending, hence, the grant is being shown as unutilized grant in Schedule 3

Note 2: The balance part of excess of expenditure over grant received amounting Rs. 25.09 crore is being shown as MOE grant receiveable in Schedule 7

8	UGC Grants - Plan		
	Balance b/f		
	Add : Receipts during the year		
	Total (c)	-	-
	Less : Refunds		
	Less : Utilized for Revenue Expenditure		
	Less : Utilized for Capital Expenditure		
	Total (d)	'	1
	Unutilized carried forward (c-d)	•	-
J	UGC Grants - Non Plan		
	Balance b/f	1	1
	Add : Receipts during the year	1	ı
	Total (e)	,	ı
	Less : Refunds		1
	Less : Utilized for Revenue Expenditure	1	1
	Less : Utilized for Capital Expenditure	1	ı
	Total (f)	-	-
	Unutilized carried forward (e-f)	-	-

٥	Grants from State Government		
	Balance b/f	46,851	46,851
	Add : Receipts during the year	1	ı
	Total (g)	46,851	46,851
	Less : Refunds		
	Less : Utilized for Revenue Expenditure	1	1
	Less : Utilized for Capital Expenditure		
	Total (h)	-	1
	Unutilized carried forward (g-h)	46,851	46,851
	Grand Total (A+B+C+D)	(22, 15, 04, 961)	(25,09,04,961)
Less : L	Less : Deficit amount as per Part A transffered to Schedule 7	(22, 15, 51, 812)	(22,15,51,812) (25,09,51,812)
	Grand Total (B+C+D)	46,851	46,851

SCHEDULE - 4 FIXED ASSETS

			Gross Block					Depreciation			Net	Net Block
SI. No.	Assets Heads	Opening Balance	Additions	Deductions	Closing Balance	Rate of Depreciatio n	Opening Balance	Depreciation for the year	Deduction / Adjustments	Total Depreciation	31-03-2021	31-03-2022
1	Land [leasehold]	3,85,170	-	-	3,85,170		-	-	-	-	3,85,170	3,85,170
2	Site Development	3,10,181	-	-	3, 10, 181		-		-	-	3,10,181	3,10,181
Э	Buildings	57,80,66,887		4,74,360	57,75,92,527	7%	6,94,51,548	1,15,61,337	(9,487)	8,10,03,398	50,86,15,338	49,65,89,128
4	Roads and Bridges	9,02,405	-	-	9,02,405	%7	85,186	18,048		1,03,234	8,17,219	7,99,171
2	Tubewells & Water Supply	1,37,96,860	4,43,493	-	1,42,40,353	7%	9,97,478	2,84,807	-	12,82,285	1,27,99,382	1,29,58,068
9	Sewerage & Drainage				ı					-	-	1
7	Electrical Installation and Equipme	17,40,60,795	27,20,437	1	17,67,81,232	%5	4,47,40,328	88, 39, 062		5,35,79,390	12,93,20,467	12,32,01,842
∞	Plant & Machinery	15,90,11,606			15,90,11,606	%5	5,56,54,062	79,50,580	1	6,36,04,643	10,33,57,544	9,54,06,964
6	Scientific & Laboratory Equipment	57,13,12,839	6,68,01,419	23,727	63,80,90,531	%8	18,25,07,818	5,10,47,242	(2,98,018)	23,32,57,043	38,88,05,021	40,48,33,488
10	Office Equipments	5,21,46,853	18,75,097	-	5,40,21,950	7.5%	1,28,97,809	40,51,646	-	1,69,49,455	3,92,49,044	3,70,72,495
11	Audio Visual Equipments	11,06,050	1,16,550		12,22,600	7.5%	2,74,469	91,695		3,66,164	8,31,581	8,56,436
12	Computers & Peripherals	16,49,39,456	20,63,867		16,70,03,323	%07	11,61,80,744	2,11,32,398		13,73,13,142	4,87,58,713	2,96,90,181
13	Furniture, Fixtures & Fittings	11,28,60,011	6,21,198	-	11,34,81,209	7.5%	4,29,21,009	85,11,091	-	5,14,32,100	6,99,39,003	6,20,49,110
14	Vehicles	3,75,838	-	-	3,75,838	10%	2,63,087	37,584	-	3,00,671	1,12,752	75,168
15	Library Books & Scientific Journals	10,76,89,362	29,043	-	10,77,18,405	10%	6,35,25,183	1,07,71,840	-	7,42,97,023	4,41,64,180	3,34,21,382
16	Small Value Assets	4,08,815	-	-	4,08,815		4,08,812	1	-	4,08,812	3	3
	Total (A)	1,93,73,73,129	7,46,71,104	4,98,087	2,01,15,46,146		58,99,07,534	12,42,97,331	(3,07,505)	71,38,97,359	1,34,74,65,596	1,29,76,48,787
17	Capital Work in Progress (B)	,						,				
							Amortization				Net Value	alue
SI. No.	Intangible Assets	Opening Balance	Additions	Deductions	Closing Balance	Kate of Depreciation	Opening Balance	Amortization for the year	Deduction / Adjustments	Total Amortization	31-03-2021	31-03-2022
18	Computer Software	3,21,41,879	12,91,836	-	3,34,33,715	40%	2,91,07,918	35,45,695	-	3,26,53,613	30,33,961	7,80,102
19	E-Journals	13,95,67,311	3,20,32,732	-	17,16,00,043	40%	11,11,83,505	3,46,92,328	-	14,58,75,833	2,83,83,805	2,57,24,209
20	Patents	1			•					•		1
	Total (C)	17,17,09,190	3,33,24,568		20,50,33,758		14,02,91,423	3,82,38,023	,	17,85,29,446	3,14,17,767	2,65,04,312
	Grand Total (A + B +C)	2,10,90,82,319	10,79,95,672	4,98,087	2,21,65,79,904		73,01,98,956	16,25,35,354	(3,07,505)	89,24,26,805	1,37,88,83,362	1,32,41,53,099

SCHEDULE - 4A NON-RECURRING (CREATION OF CAPITAL ASSETS OUT OF NON-RECURRING GRANT)

			Gross Block					Depreciation			Net Block	Slock
SI. No.	Assets Heads	Opening Balance	Additions	Deductions	Closing Balance	Rate of Depreciatio n	Opening Balance	Depreciation for the year	Deduction / Adjustments	Total Depreciation	31-03-2021	31-03-2022
1	Land [leasehold]	3,85,170	-	-	3,85,170		-	-		•	3,85,170	3,85,170
2	Site Development	-	1	-	-		-	-		-		1
3	Buildings	54,69,36,125	-	4,74,360	54,64,61,765	7%	6,63,38,472	1,09,38,722	(9,487)	7,72,67,707	48,05,97,653	46,91,94,058
4	Roads and Bridges	9,02,405	-	-	9,02,405	7%	85,186	18,048		1,03,234	8,17,219	7,99,171
2	Tubewells & Water Supply	1,29,96,860	4,43,493	-	1,34,40,353	7%	9,17,477	2,68,807		11,86,284	1,20,79,383	1,22,54,069
9	Sewerage & Drainage		-	-		7%						1
7	Electrical Installation and Equipme	15,09,31,789	27,20,437	-	15,36,52,226	%5	3,85,49,364	76,82,611		4,62,31,975	11,23,82,425	10,74,20,251
∞	Plant & Machinery	15,84,06,181			15,84,06,181	2%	5,54,42,164	79,20,309		6,33,62,473	10,29,64,018	9,50,43,709
6	Scientific & Laboratory Equipment	23,04,07,058	38,30,572	23,727	23,42,13,903	%8	6,42,45,904	1,87,37,112	(2,98,018)	8,26,84,998	16,61,61,154	15,15,28,905
10	Office Equipments	5,12,78,483	18,27,867	-	5,31,06,350	7.5%	1,25,66,999	39,82,976		1,65,49,975	3,87,11,484	3,65,56,375
11	Audio Visual Equipments	11,06,050	1,16,550	-	12,22,600	7.5%	2,74,469	91,695		3,66,164	8,31,581	8,56,436
12	Computers & Peripherals	14,57,53,956	17,47,228	-	14,75,01,184	70%	10,00,38,013	1,93,90,761		11,94,28,774	4,57,15,943	2,80,72,410
13	Furniture, Fixtures & Fittings	10,20,60,925	6,21,198	-	10,26,82,123	7.5%	3,80,49,848	77,01,159		4,57,51,007	6,40,11,078	5,69,31,116
14	Vehicles	3,75,838	-	-	3,75,838	10%	2,63,087	37,584		3,00,671	1,12,752	75,168
15	Library Books & Scientific Journals	10,62,46,793	-	-	10,62,46,793	10%	6,28,14,741	1,06,24,679		7,34,39,420	4,34,32,053	3,28,07,373
16	Small Value Assets	4,08,815	-	-	4,08,815	100%	4,08,812	-		4,08,812	3	3
	Total (A)	1,50,81,96,449	1,13,07,345	4,98,087	1,51,90,05,707		43,99,94,535	8,73,94,464	(3,07,505)	52,70,81,495	1,06,82,01,914	99,19,24,212
17	Capital Work in Progress (B)	•										•
S.		Opening	;+; ;+; ;+;	; to C	,	Rate of	Amortization	Amortization	Deduction /	Total	Net Value	alue
No.	23222	Balance				Depreciation	Balance	for the year	Adjustments	Amortization	31-03-2021	31-03-2022
18	Computer Software	3,19,78,154	12,91,836		3,32,69,990	40%	2,89,44,194	35,45,695		3,24,89,889	30,33,960	7,80,101
19	E-Journals	13,95,67,311	3,20,32,732		17,16,00,043	40%	11,11,83,505	3,46,92,328		14,58,75,833	2,83,83,805	2,57,24,209
20	Patents				•		-	-		-		•
	Total (C)	17,15,45,465	3,33,24,568	-	20,48,70,033		14,01,27,699	3,82,38,023	1	17,83,65,722	3,14,17,766	2,65,04,311
	Grand Total (A + B +C)	1,67,97,41,914	4,46,31,913	4,98,087	1,72,38,75,740		58,01,22,234	12,56,32,487	(3,07,505)	70,54,47,217	1,09,96,19,680	1,01,84,28,523

SCHEDULE - 4B NON-PLAN

2			Gross Block					Depreciation			Net Block	Slock
No.	Assets Heads	Opening Balance	Additions	Deductions	Closing Balance	Rate of Depreciatio	Opening Balance	Depreciation for the year	Deduction / Adjustments	Total Depreciation	31-03-2021	31-03-2022
1	Land	-	-	-	-		-	-		-	-	1
2	Site Development	-			1		1	-		1		1
33	Buildings	3,11,30,762		,	3,11,30,762	7%	31,13,077	6,22,615		37,35,692	2,80,17,685	2,73,95,070
4	Roads and Bridges	-			1		1	-		1		1
2	Tubewells & Water Supply	8,00,000	-	ı	8,00,000	%7	80,000	16,000	-	000'96	7,20,000	7,04,000
9	Sewerage & Drainage		-	•	1		•	-			-	1
7	Electrical Installation and Equipme	1,88,69,238		1	1,88,69,238	%5	47,17,309	9,43,462	1	56,60,771	1,41,51,929	1,32,08,467
∞	Plant & Machinery	-		1	1			-		1		1
6	Scientific & Laboratory Equipment	-		1	1		1	-		1		1
10	Poffice Equipments	-	-	-	-		-	-		-	-	1
11	Audio Visual Equipments	-	-	-	-		-	-		-	-	1
12	Computers & Peripherals	-		•	1		•	-		•	•	1
13	Furniture, Fixtures & Fittings	-	-	-	-		-	-		-	-	1
14	Vehicles	-	-	ı	1		-	-		-	-	1
15	Library Books & Scientific Journals	-	1	-	-		-	-		-	-	1
16	Small Value Assets	•	•	1	1		•	1		1	1	1
	Total (A)	5,08,00,000	•	1	5,08,00,000		79,10,386	15,82,077	1	94,92,463	4,28,89,614	4,13,07,537
17	Capital Work in Progress (B)											
		200				Rate of	Amortization	; + C : + C C C	, acito: 600	-+°F	Net Value	alue
No.	Intangible Assets	Balance	Additions	Deductions	Closing Balance	Depre ciati on	Opening Balance	for the year	Adjustments	Amortization	31-03-2021	31-03-2022
18	Computer Software				-					-	-	1
19	E-Journals				-					-	•	1
20	Patents									•	•	1
	Total (C)			1				1				
	Grand Total (A + B +C)	5,08,00,000			5,08,00,000		79,10,386	15,82,077		94,92,463	4,28,89,614	4,13,07,537

Ų)
Н	-
ш	J
'n	7
ŭ	1
<	Ĺ
	ì
Ξ	3
2	3
Ξ	=
Ľ	,
7	,
=	7
:	Ļ
_	-
Z	2
	2
2	=
Ξ,	
2	ַ
2	ב ל
N OV	ב י
NI OV B	ביי
77	בנייו
77	בנייזכ
77	ברי זכ
77	בנייזכ

Gross Bloci	Gross Blo	Gross Blo	ck			Q	Depreciation / Amortization Block	ortization Bloc	×	Net	Net Block
Assets Heads Opening Additions Deductions Balance	Additions	v	Deductions	Rate of Closing Balance Depreciation	Rate of Depreciatio n	Opening Balance	Depreciation / Adjustments Amortization / Adjustments	Deduction / Adjustments	Total Depreciation / Amortization	31-03-2019	31-03-2021
Patents & Copyrights				-					-	•	
Computer Software				-					•	•	•
E-Journals				-					-	-	-
	-	-	-	-		-	-	-	-	-	-

STUDIONOCO CINV	2
Ξ	=
7	╘
C	7
7	7
5	=
6	L
7	₹
۶	ヾ
٠	•
٥	2
5	7
2	7
•	٠
U	า
ᆫ	=
Z	2
μ	ш
۰	-
<	ζ
DATENITO	ξ
2	ַ
<u>ויי</u>	<u> </u>
	<u> </u>

	Particulars	Opening Balance	ing nce	Additions	Gross	Amortization	Net Block 31/03/2019	Net Block 31/03/2021
⋖	Patent Granted							
	1. Balance as on 31/03/2014 of Patents obtained in 2010-11							
	(Original Value - Rs.)							
	2. Balance as on 31/03/2014 of Patents obtained in 2011-12							
	(Original Value - Rs.)							
	3. Balance as on 31/03/2014 of Patents obtained in 2012-13				1			
	(Original Value - Rs.)							
	4. Patents granted during the current year						•	
	Total							
ĺ								
	Particulars	Opening Balance	ing nce	Additions	Gross	Patents Granted / Rejected	Net Block 31/03/2019	Net Block 31/03/2021
В	Patents Pending in respect of Patents applied for							
	1. Expenditure incurred during the year 2009-10 to 2011-12							
	2. Expenditure incurred during the year 2012-13				1		,	
	3. Expenditure incurred during the year 2013-14				1		,	
	Total			•			٠	1

SCHEDULE - 4D OTHERS

			Current Plant.								7.14	1
			Gross Block					Depreciation	ation		Net	Net Block
S .	Assets Heads	Opening Balance	Additions	Deductions	Deductions Closing Balance Depreciation	Rate of Depreciatio n	Opening Balance	Depreciation for the year	Deduction / Adjustments	Total Depreciation	31-03-2021	31-03-2022
1	Land						-	-				
2	Site Development	3,10,181	1	,	3,10,181		-				3,10,181	3,10,181
ю	Buildings		1									1
4	Roads and Bridges						-					
2	Tubewells & Water Supply		1	,			-					
9	Sewerage & Drainage		-	٠								1
7	Electrical Installation and Equipme	42,59,768	-		42,59,768	%5	14,73,655	2,12,988		16,86,644	27,86,113	25,73,124
∞	Plant & Machinery	6,05,425	1	,	6,05,425	%5	2,11,899	30,271		2,42,170	3,93,526	3,63,255
6	Scientific & Laboratory Equipment	34,09,05,781	6,29,70,847	٠	40,38,76,628	%8	11,82,61,914	3,23,10,130		15,05,72,045	22,26,43,867	25,33,04,583
10	Office Equipments	8,68,370	47,230		9,15,600	7.5%	3,30,810	68,670		3,99,480	5,37,560	5,16,120
11	Audio Visual Equipments		1				-					1
12	Computers & Peripherals	1,91,85,500	3,16,639	٠	1,95,02,139	70%	1,61,42,731	17,41,637		1,78,84,368	30,42,769	16,17,771
13	Furniture, Fixtures & Fittings	1,07,99,086	-	٠	1,07,99,086	7.5%	48,71,161	8,09,931		56,81,093	59,27,925	51,17,993
14	Vehides	-	-	•	-		-			-	-	
15	Library Books & Scientific Journals	14,42,569	29,043	٠	14,71,612	10%	7,10,442	1,47,161		8,57,603	7,32,127	6,14,009
16	Computer Software	1,63,725	-		1,63,725	40%	1,63,724	-	-	1,63,724	1	1
17	EJournals	-	-		-	40%	-	-		-	-	•
	Total	37,85,40,405	6,33,63,759	Î	44,19,04,164		14,21,66,337	3,53,20,789	•	17,74,87,126	23,63,74,068	26,44,17,038
18	Capital Work in Progress											
	Grand Total	37,85,40,405	6,33,63,759		44,19,04,164		14,21,66,337	3,53,20,789		17,74,87,126	23,63,74,068	26,44,17,038

Note: The additions during the year include additions from:

	•	ultancy Funds 6,33,34,716	29,043	93 63 750
Gifted	Earmarked Funds	Sponsored Projects / Consultancy Funds	Own Funds	

SCHEDULE - 5 INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS

		Current Year	Previous Year
1	In Central Government Securities		
2	In State Government Securities		
3	Other Approved Securities		
4	Shares		
5	Debentures and Bonds		
6	Term Deposits with Banks	75,10,18,761	72,29,02,442
7	Others (to be specified)		
	Total	75,10,18,761	72,29,02,442

SCHEDULE - 5A INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS (FUND WISE)

SI. No.	Funds	Current Year	Previous Year
1	Endowment Funds (vide Annexure I)	5,41,77,955	5,26,21,750
2	Earmarked Funds / Sponsored Projects (vide Annexure II)	69,68,40,806	67,02,80,692
	Total	75,10,18,761	72,29,02,442

SCHEDULE - 6 INVESTMENT - OTHERS

		Current Year	Previous Year
1	In Central Government Securities	-	1
2	In State Government Securities	-	-
3	Other Approved Securities	-	-
4	Shares	-	-
5	Debentures and Bonds	-	-
6	Term Deposits with Banks (vide Annexure - III)	2,62,56,034	1,39,29,320
7	Others (to be specified)	-	-
	Total	2,62,56,034	1,39,29,320

SCHEDULE - 7 CURRENT ASSETS

	Current Yea	ar Previous Year
1. Stock :		
a) Stores and Spares		
b) Loose Tools		
c) Publications		
d) Laboratory chemicals, consumables and glass ware		
e) Building Materials		
f) Electrical Materials		
g) Stationery		
2. Sundry Debtors :		
a) Debts outstanding for a period exceeding six mon	ths	
b) <u>Others</u>		
MOE Grant receivables [over and above sanctioned	d for the year] 25,09,51,	812 25,09,51,812
c) MOE Grant receivables [sanctioned for the year]		
d) Any Other Receivables	38,	- 800
3. Cash and Bank balances :		
a) With Scheduled Banks		
- in Current Account (vide Annexure - V)	18,63,50,	18,64,81,076
- in Term Deposit Accounts (vide Annexure IV)	1,52,59,	1,57,08,583
- in Savings Accounts (vide Annexure VI)	1,12,74,76,	655 1,07,95,51,996
b) With Non-Scheduled Banks		
c) Cash in hand		
d) Cheques in hand		
4. Post Office - Savings Accounts		
T-1-1		640 4 50 00 00 00
Total	1,58,00,77,	640 1,53,26,93,467

Note: A separate Annexure is being enclosed showing the bank details, nomenclature of accounts showing the fund for which the bank accounts are being dedicated and the balance as on 31/03/2022

a) Balance in Savings Bank a/c for Earmarked Fund - Rs. 49,23,37,079

b) Balance in Savings Bank a/c for Enowment Fund - Rs. 2,10,90,963

SCHEDULE - 8 LOANS AND ADVANCES

	Current Year	Previous Year
1. Advance to employee : (Non interest bearing)		
a) Salary	-	-
b) Festival	-	1,88,400
c) Medical Advance	30,84,475	20,59,326
d) Other (to be specified)		
- Advance to employees (vide Annexure - VII)	2,93,357	3,67,857
2. Long Term Advance to employees : (Interest bearing)	-	-
a) Vehicle Loan	_	_
b) Home Loan	_	_
c) Other (to be specified)	_	_
3. Advances and other amounts recoverable in cash or in kind or value to be received		
	10 27 11 501	45 42 67 052
a) On Capital Account	18,27,11,501	15,43,67,953
b) to Suppliers (vide Annexure VIII)	1,00,000	1,00,000
c) Other (to be specified) - Advance Student Research Scholars (vide Annexure I)	1,00,000	1,00,000
d) Other (to be specified) - Advance for Research Projects	-	1,33,031
e) Other (to be specified) - Advance for Consultancy	-	-
f) Other (to be specified) - Institute Development Fund	10,000	10,000
g) Other-Miscellaneous	-	-
h) Other-E Journals	1,36,58,118	39,08,267
4. Prepaid Expenses	-	-
a) Insurance	-	-
b) Other Expenses	-	-
5. Deposits	-	-
a) Telephone	-	-
b) Lease Rent	-	-
c) Electricity	84,53,246	83,06,519
d) AICTE, if applicable	-	-
e) Other (to be specified) - against research projects	-	-
f) Other (to be specified) - against consultancy	-	-
6. Income Accrued		
a) On investments from Earmarked / Endowment Funds	3,76,17,512	2,90,68,117
b) On investments - Others	23,63,721	10,57,690
c) On Loans and Advances	-	-
7. Other - Current assets receivable from UGC / sponsored projects		
a) Debit balances in Sponsored projects	-	-
b) Debit balances in Sponsored Fellowships & Scholarships	1,32,72,870	1,38,73,625
c) Grants Receivables d) Other Receivables from UGC	_	-
8. Claim Receivable		_
Advance Tax / Income Tax Deducted at Source receivable	1,72,27,253	73,95,743
Total	27,88,92,053	22,09,36,528

SCHEDULE - 9 ACADEMIC RECEIPTS

	Current Year	Previous Year
FEES FROM STUDENTS		
A. Academic		
1. Tuition Fees	17,78,22,719	14,89,45,713
2. Admission Fees	32,23,600	24,44,100
3. Enrolment Fees		
4. Library Admission Fees		
5. Laboratory Fees		
6. Art & Craft Fees		
7. Registration Fees		
8. Course Fees	29,06,750	31,75,600
Total (A)	18,39,53,069	15,45,65,413
B. Examinations		
1. Admission Test Fees	-	-
2. Annual Examination Fees	59,57,000	54,39,000
3. Mark sheet, Certificate Fees	-	2,07,700
4. Entrance Examination Fees	-	-
Total (B)	59,57,000	56,46,700
C. Other Fees		
1. Identity Card Fees		
2. Fine / Miscellaneous Fees	19,71,062	12,77,378
3. Medical Fees	-	-
4. Transportation Fees	-	-
5. Hostel Development Fees	-	-
Total (C)	19,71,062	12,77,378
D. Sale of Publications		
1. Sale of Admission Forms	-	-
2. Sale of Syllabus, Question Papers etc		
3. Sale of prospectus including admission forms		
Total (D)	-	-
E. Other Academic Receipts		
Registration fee for workshops, programmes, Student Activities Fees	20,32,599	26,58,312
2. Registration fees (Academic Staff College)	-	-
3. External Examination Fees Receipts	-	-
4. Convocation fees	29,93,250	1,04,000
5. Tuition Fees - Self Financing Course	-	-
6. Infrastructure Maintenance Fees	78,72,500	73,49,000
Total (E)	1,28,98,349	1,01,11,312
GRAND TOTAL (A+B+C+D+E)	20,47,79,480	17,16,00,803

SCHEDULE - 10 GRANTS / SUBSIDIES (IRREVOCABLE GRANTS RECEIVED)

Particulars Govt of		Grant-in-aid				
	t of India	UGC Plan	State Govt Grant	Total Grant-in- aid	Current Year Total	Previous Year Total
Balance B/F (25,09)	(25,09,51,812)	1	46,851	(25,09,04,961)	(25,09,04,961)	(35,10,30,554)
Add: Receipts during the year plus reversal 1,42,23	1,42,21,86,078		-	1,42,21,86,078	1,42,21,86,078	1,49,46,15,434
Total 1,17,13	1,17,12,34,266	1	46,851	1,17,12,81,117	1,17,12,81,117	1,14,35,84,880
Less : Refund	1		ı		1	1
Balance 1,17,12	1,17,12,34,266	1	46,851	1,17,12,81,117	1,17,12,81,117	1,14,35,84,880
Less : Utilized for Capital expenditure (A) 2,94	2,94,00,000			2,94,00,000	2,94,00,000	8,34,63,749
Balance 1,14,18	1,14,18,34,266	1	46,851	1,14,18,81,117	1,14,18,81,117	1,06,01,21,131
Less : Utilized for Revenue expenditure (B) 1,39,27,8	,27,86,078		-	1,39,27,86,078	1,39,27,86,078	1,31,10,26,092
Balance C/F (C) (25,09	(25,09,51,812)	1	46,851	(25,09,04,961)	(25,09,04,961)	(25,09,04,961)

SCHEDULE - 11 INCOME FROM INVESTMENTS

Particulars	Earmarked / End	dowment Funds	Other Inv	restments
rafuculars	Current Year	Previous Year	Current Year	Previous Year
1. Interest				
a. On Government Securities				
b. Other Bonds / Debentures				
2. Interest on Term Deposits	15,56,422	13,54,827	12,28,013	50,62,352
3. Income accrued but not due on Term Deposits / Interest bearing advances to employees	3,45,95,798	4,04,57,278	57,73,331	10,57,690
4. Interest on Savings Bank Accounts	8,43,740	7,32,476	-	-
5. Interest on Security Depsoits with CESC	-	-	6,16,908	4,70,180
6. Others (Specify) - Dividend	-	-	-	1,946
Total	3,69,95,960	4,25,44,581	76,18,252	65,92,168
Transferred to Earmarked / Endowment Funds	3,69,95,960	4,25,44,581	-	-
Balance	Nil	Nil		

SCHEDULE - 12 INTEREST EARNED

Particulars	Current Year	Previous Year
On Savings Accounts with scheduled banks	93,18,218	2,19,90,992
2. On Loans		
a. Employees / Staff	-	-
b. Others	-	-
3. On Debtors and Other Receivables	-	-
Total	93,18,218	2,19,90,992

SCHEDULE - 13 OTHER INCOME

	Current Year	Previous Year
A. Income from Land and Buildings		
1. Hostel Room Rent	-	10,650
2. Licence Fees	13,06,383	54,58,869
3. Hire Charges of Auditorium / Play ground / Convention Centre / Guest House etc.	8,12,099	11,45,158
4. Electricity Charges recovered	43,55,372	21,86,262
5. Water Charges recovered	-	-
Total (A)	64,73,854	88,00,939
3. Sale Institute's Publications	-	-
C. Income from holding events		
1. Gross Receipts from annual function / sports carnival		
Less: Direct expenditure incurred on the annual function / sports carnival		
2. Gross Receipts from fetes		
Less : Direct expenditure incurred on the fetes		
3. Gross Receipts for Educational Tours		
Less : Direct expenditure incurred on the tours		
4. Others (to be specified and separately disclosed)		
- Course Fees	-	-
- Centre Fees for External Exams	4,27,400	8,25,800
- Seminar Programme Fees receipts	-	-
- Refund of Processing Fees paid to UGC	-	-
Total (C)	4,27,400	8,25,800
D. Others		
1. Income from Consultancy and Instituional Development Fund	16,335	8,375
2. RTI Fees		
3. Income from Royalty		
4. Sale of application forms	-	23,000
5. Miscellaneous Receipts (Sale of tender forms, waste paper etc.)	2,05,547	1,33,000
6. Sale / Disposal of Assets / Scraps		
a. Owned Assets		
b. Assets received free of costs		
7. Grants / Donations from Institutions, Welfare Bodies and International Organizations		
8. Others (specify) - liabilities written back	1,96,460	1,03,644
Total (D)	4,18,342	2,68,019
GRAND TOTAL (A+B+C+D))	73,19,596	98,94,758

SCHEDULE - 14 PRIOR PERIOD INCOME

Particulars	Current Year	Previous Year
1. Academic Receipts	-	-
2. Income from Investments	-	-
3. Interest earned	-	-
4. Income from MOE Grant	4,74,360	-
5. Depreciation	-	10,63,475
6. Other Income - Salary / Contribution for CMS	30,56,511	-
Total	35,30,871	10,63,475

SCHEDULE - 15 STAFF PAYMENTS & BENEFITS (ESTABLISHMENT EXPENSES)

ove less than C		Current Year			Previous Year	
raiticulais	Recurring Grant	Others	Total	Recurring Grant	Others	Total
a)Salaries and Wages			-			I
- Central	90,02,32,549	4,73,67,885	94,76,00,434	87,15,10,597	1	87,15,10,597
- nec	1		-	ı		ı
- Own sources and out of State Government Grant	1		-	ı		1
b) Allowances and Bonus	4,500	1	4,500	12,600	1	12,600
c) Contribution to Provident Fund	20,12,793	-	20,12,793	15,89,013	-	15,89,013
d) Contribution to Other Fund (specify) - NPS	92,34,195		92,34,195			1
Staff Welfare Expenses - Medical Expenses [Recovery of CMS e) Fund and Medical Expenditure reimbursed]	15 62,10,934	-	62,10,934	1	52,35,342	52,35,342
f) Retirement and Terminal Benefits	4,53,42,019	-	4,53,42,019	3,02,81,102	-	3,02,81,102
g) LTC Facility	57,20,131	-	57,20,131	54,85,057	-	54,85,057
h) Leave Salary	2,64,85,690	-	2,64,85,690	2,46,28,490	-	2,46,28,490
i) Children Education Allowance	000'68'69	-	000'68'69	67,23,000	-	67,23,000
j) Honorarium	2,87,950	10,80,462	13,68,412		2,26,500	2,26,500
k) Others (Specify) - CVP Payment	6,06,29,700	-	6,06,29,700	1,75,73,088	-	1,75,73,088
l) Others (Specify) - Pension Payment	4,96,30,634	-	4,96,30,634	3,88,87,648	-	3,88,87,648
Total	1,11,27,30,095	4,84,48,347	1,16,11,78,442	565'06'99'66	54,61,842	1,00,21,52,437

SCHEDULE - 16 ACADEMIC EXPENSES

Darticulare		Current Year			Previous Year	
	Recurring Grant	Others	Total	Recurring Grant	Others	Total
a) Laboratory expenses	14,20,576	1,98,570	16, 19, 146	36,22,937	ı	36,22,937
b) Field work / Participation in Conferences	1		1	4,93,469	1	4,93,469
c) Expenses on Seminars / Workshops	53,642	51,681	1,05,323	8,79,764	1	8,79,764
d) Payment to visiting faculty	10,31,610	-	10,31,610	9,85,920	54,611	10,40,531
e) Examination	14,74,314		14,74,314	26,15,984	1	26,15,984
f) Student Welfare expenses	1	13,06,721	13,06,721	-	18,12,670	18,12,670
g) Admission expenses		-	1			ı
h) Convocation expenses	12,76,679		12,76,679	5,46,183	1	5,46,183
i) Publications			,			ı
j) Stipend / means cum merit scholarship			,		1	ı
k) Subscription expenses	2,41,600	3,03,453	5,45,053	3,50,000	1,48,655	4,98,655
l) Others (sports/cultural/medal etc)	3,98,772	2,13,427	6,12,199	2,08,882	9,10,687	11,19,569
m) Departmental Contingencies	48,92,910	19,88,217	68,81,127	1,12,43,427	2,07,387	1,14,50,814
n) Inaugural/Special Pograme	47,866	18,000	998'59			ı
o) PHD and Other Fellowships (Institute)	13,44,93,929	4,06,47,439	17,51,41,368	17,12,91,188	ı	17,12,91,188
p) Research Expenditure	1	-	1	1	1,07,372	1,07,372
q) Institute Development Expenditure - Research Support	1	16,335	16,335	•	8,375	8,375
r) Travelling And Conveyance	1,72,000	-	1,72,000	75,694	1	75,694
Total	14,55,03,898	4,47,43,843	19,02,47,741	19,23,13,448	32,49,757	19,55,63,205

SCHEDULE - 17 ADMINISTRATIVE AND GENERAL EXPENSES

		Current Year			Previous Year	
ratuculats	Recurring Grant	Others	Total	Recurring Grant	Others	Total
A. Infrastructure						•
a) Electricity and power	1,91,52,151		1,91,52,151	1,66,11,084	1	1,66,11,084
b) Water Charges			٠			•
c) Insurance						
d) Rent, Rates and Taxes (including property tax)	18,780		18,780	22,706	1	22,706
B. Communication			٠			
e) Postage and Stationery	2,51,622		2,51,622	2,71,689		2,71,689
f) Telephone, Fax and Internet Charges	13,57,121	2,36,504	15,93,625	12,11,521		12,11,521
C. Others			•			
g) Printing and Stationery (consumption)	4,56,755		4,56,755	19,45,602		19,45,602
h) Travelling and Conveyance Expenses	2,97,950		2,97,950	2,67,038		5,67,038
i) Hospitality	-		•	-		
j) Auditors Remuneration	7,29,088		7,29,088	8,00,000	13,000	8,13,000
k) Professional Charges	20,11,770		20,11,770	17,86,935		17,86,935
l) Advertisement and Publicity	1,39,382		1,39,382	5,45,604		5,45,604
m) Magazines and Journals	-		•			
n) Others (specify) - Hiring of Manpower	3,93,09,971		3,93,09,971	3,03,53,761		3,03,53,761
o) Guest House Expenses	23,79,326	-	23,79,326	-	19,75,495	19,75,495
p) Remuneration to Experts			-			•
g) Security Services	2,74,56,435		2,74,56,435	2,72,14,396		2,72,14,396
r) Others (specify) - Contingencies	19,76,997	18,11,424	37,88,421	31,74,876	2,14,598	33,89,474
s) Others (specify) - Administrative Charges - EPF	-		-	51,225		51,225
n) Meeting Expenses	1,46,876	21,930	1,68,806	1,24,691		1,24,691
Total	9,56,84,224	20,69,858	9,77,54,082	8,46,81,128	22,03,093	8,68,84,221

SCHEDULE - 18 TRANSPORTATION EXPENSES

and I was a C		Current Year			Previous Year	
ratilculars	Recurring Grant	Others	Total	Recurring Grant	Others	Total
1 Vehicles (owned by institution)			1			1
a) Running expenses	1,40,451		1,40,451	76,095		76,095
b) Repair & Maintenance	97,250	ı	97,250	1,04,988	7,650	1,12,638
c) Insurance expenses			1			1
2 Vehicles taken on rent / lease						1
Rent / lease and Running expenses			1			ı
3 Vehicle (Taxi) hiring expenses	1		1	8,59,725		8,59,725
4 Others			1		1	1
Total	2,37,701	-	2,37,701	10,40,808	7,650	10,48,458

SCHEDULE - 19 REPAIRS & MAINTENANCE

over the C		Current Year			Previous Year	
ratuculais	Recurring Grant	Others	Total	Recurring Grant	Others	Total
a) Buildings (including Electrical maintenance)	2,66,54,292	ı	2,66,54,292	2,79,70,618	ı	2,79,70,618
b) Furniture & Fixtures	1	1		36,176		36,176
c) Plant & Machinery		1				1
d) Office Equipment	3,54,851	1	3,54,851	2,72,143	4,602	2,76,745
e) Computers & Softwares	90,549	1	90,549	9,28,585		9,28,585
f) Laboratory & Scientific Equipments	4,87,536	1	4,87,536	10,90,276		10,90,276
g) Audio Visual Equipments	ı	1		1	1	1
h)Cleaning Material & Services	1	1		1	1	1
i) Book Binding Charges	1	1	1	ı	1	1
j) Gardening	1	1	1	ı	1	1
k) Estate Maintenance	50,84,369	1	50,84,369	47,44,080	1	47,44,080
l) Others (specify) - PHE maintenance	58,47,293	ı	58,47,293		1	1
Total	3,85,18,890	1	3,85,18,890	3,50,41,878	4,602	3,50,46,480

SCHEDULE - 20 FINANCE COSTS

no de la constante de la const		Current Year			Previous Year	
	Recurring Grant	Others	Total	Recurring Grant	Others	Total
a)Bank Charges	32,175	6,725	38,900	20,304	1	20,304
b) Interest on Term Loan		ı	I		1	ı
c) Others (specify)			,			ı
Total	32,175	6,725	38,900	20,304	-	20,304

SCHEDULE - 21 OTHER EXPENSES

		Current Year			Previous Year	
Particulars	Recurring Grant	Others	Total	Recurring Grant	Others	Total
a) Provision for Bad and Doubtful Debts / Advances			,			1
b) Irrecoverable Balance written off			,			1
c) Grants / Subsidies to other institutions / organizations			,			1
d) Others (specify) - Fees and Interest on Sttautory Payment	1	1	,	1	655	655
	ı	ı	1			ı
Total	-	-	•	-	655	655
						I

3,49,339 7,775 8,80,817 12,37,931 Total **Previous Year** Others **Recurring Grant** 3,49,339 8,80,817 7,775 12,37,931 79,095 5,53,455 4,74,360 Total **Current Year** Others **Recurring Grant** 79,095 4,74,360 5,53,455 **Particulars** Total Repairs & Maintenance - Civil Finance Cost - Bank Charge Administrative expenses Transportation expenses **Establishment expenses** Academic expenses Depreciation

SCHEDULE - 22 PRIOR PERIOD EXPENSES

BALANCE SHEET AS AT 31.03.2022

Liabilities		Amount	Assets	Amount
<u>GPF</u>			Recoverable Advance	10,00,41,404
Opening balance		53,19,82,626		
Add : Subscription received		6,80,75,928	Howrah Treasury a/c	53,21,04,406
Add : Interest		3,01,40,635		
Less: Withdrawal		1,16,34,468	Interest accrued as on 31/03/2022	3,21,90,758
	(A)	61,85,64,721		
<u>CPF</u>				
Opening balance		58,70,670		
Add : Subscription received		10,01,307		
Add : Interest		4,24,105		
Less: Withdrawal		-		
	(B)	72,96,082		
CPF (Institute Contribution)				
Opening balance		51,90,253		
Add : Subscription received		7,29,420		
Add : Interest		3,65,334		
Less: Withdrawal		-		
	(C)	62,85,007		
Interest Reserve Account		3,21,90,758		
		66,43,36,568		66,43,36,568

Dy. Registrar (Finance) Registrar Director

For DEBASIS BANDYOPADHYAY & CO. Chartered Accountants (Debasis Bandyopadhyay) Proprietor Membership No. - 057861

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31.03.2022

Receipts	Amount	Payments	Amount
Opening Balance [11020301]	46,55,63,346	GPF Advance [07040100]	2,25,61,200
GPF Subscription [07010503] CPF Subscription [07010509] CPF Contribution by Employers [20030200]	6,73,36,528 10,01,307 7,29,420	GPF Withdrawal [07040300]	1,16,34,468
GPF Advance refund [07010504]	7,39,400		
Interest received [03020200]	3,09,30,073	Closing Balance [11020301]	53,21,04,406
	56,63,00,074		56,63,00,074

INDIAN INSTITUTE OF ENGINEERING SCIENCE AND TECHNOLOGY, SHIBPUR INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2022

Expenditure	Amount	Income	Amount
Interest credited to PF a/c	3,09,30,073	Interest accrued for the year	3,21,90,758
		Interest received for the year	3,09,30,073
Surplus / (Deficit)	3,21,90,758		
	6,31,20,831		6,31,20,831

Dy. Registrar (Finance) Registrar Director

For DEBASIS BANDYOPADHYAY & CO.
Chartered Accountants
(Debasis Bandyopadhyay)
Proprietor
Membership No. - 057861

Corresponding to Annual Accounts 2021-2022

SCHEDULE-23

Significant Accounting Policies:

Indian Institute of Engineering Science and Technology is an Autonomous body. The Institute is financed by the Ministry of Education, Government of India through Revenue Grant (Creation of Capital Assets, Recurring and Non-Recurring purpose). The Institute is also undertaken various research projects and consultancy works through its esteemed teachers and the assets created out of it is duly stated in these financial statements.

Financial Statements-

The Institute prepared the following Financial Statements i.e., Balance Sheet and Income & Expenditure Account for the year ended as on 31st March 2022. The Common Accounting format as prescribed by the Ministry has been followed in drawing up those financial statements; however, in its first year the institute had its best endeavor to follow every line item of the said prescribed form, however, the same in some cases could not be strictly followed and will be incorporated in the ensuing financial year's statement;

Accounting Concept-

The financial statement has been prepared under Historical Cost Convention unless otherwise stated and on the principal of going concern method.

Accounting Basis-

The account is prepared under accrual basis of accounting, excepting the cases specifically stated in these significant accounting policies. Government grants & Subsidies are accounted for on accrual basis if reasonable assurance obtained for its definite future receipts.

Investment Accounting-

The Institute has invested its fund available to its credit in fixed deposits with scheduled commercial banks and the same is stated at the face value plus accrued interest thereon.

Governments Grants & Subsidies-

Government Grants / Subsidies receivable during the year under Non recurring head are being treated as Capital Receipts and accounting for under Corpus Fund to the extent utilized for capital expenditure.

Government Grants / Subsidies earmarked for certain purpose receivable during the year under any head and to be utilized by way of payment for that specific purpose are being treated as Capital Receipts & accounting for under Earmarked Fund.

Government Grants /Subsidies receivable during the year under Recurring head are being treated as Revenue receipts and accounted for as income under the head Grant/Subsidy to the extent the same has been utilized for the purpose for which the grant has been sanctioned.

Revenue Recognition -

Tuition Fees

Tuition fees, Sale of Admission Forms have been accounted for as and when actually received from the students. Fees actually paid to the mess authority, but not received by the Institute as on year end has been considered as receivable from mess authority.

Interest Income -

Interest on savings bank account have been considered as income as and when the same is credited in bank account and interest accrued on fixed deposits have been accounted for at the end of the year.

Fixed Assets and Depreciation Accounting -

Fixed Assets are valued at a cost of acquisition inclusive of inward expenses and incidental expenses. Condemned & unserviceable assets are written off in accounts as and when required.

Gifted / donated assets, if any, are valued at declared value where available; if not available, the value is estimated based on the present market value adjusted with reference to the physical condition of the assets. They are set up by credit to Capital fund and merged with fixed assets of the institute. Depreciation is charged at the rates applicable to the respective assets.

Books received as gifts, if any, are valued at selling prices printed on the books. Where they are not printed, the value is based on assessment.

Fixed assets are valued at cost less accumulated depreciation. Depreciation on fixed assets is provided on Straight line method at the following rates:

SI. No	Particulars Ra	ate of Depreciation (p.a)
I	Building	2%
II	Roads & Bridges	2%
III	Tubewells and Water Supply	2%
IV	Electrical Installations & Equipment	5%
V	Plant & Machinery	5%
VI	Scientific and Laboratory Equipment	8%
VII	Office Equipment	7.5%
X	Audio Visual Equipment	7.5%
XI	Computers & Peripherals	20%
XII	Furniture & Fixture	7.5%
XIII	Vehicles	10%
XIV	Library Books and Scientific Journals	10%
XV	Computer Software	40%
XVI	e-Journals	40%

Depreciation is provided for the whole year on additions during the year, irrespective the dates of addition.

Where an asset is fully depreciated, it will be carried at a residual value Re 1 in the balance sheet and will not be further depreciated. Thereafter, depreciation is calculated on the additions of each year separately at the rate of depreciation applicable for that asset head.

Fixed Asset procured for sponsored projects -

Fixed Assets created out of Earmarked Funds and funds of sponsored projects, where the ownership of such asset vests in the Institute, are set up by credit to Capital Fund and merged with the Fixed Assets of the Institute and depreciation is being charged on the said fixed assets at prescribed rates. Assets created out of Sponsored Project funds, where the ownership is retained by the sponsors but held and used by the institute are separately disclosed in the Notes on Accounts.

Inventories -

The inventories of chemicals, stationery etc are not separately maintained and the whole quantity have been accounted for as consumed as and when purchased.

Retirement Benefits-

Provident fund of the employees has been deducted from salary and the same is being transferred to State Bank of India, Howrah Branch, which is being maintained by Howrah Treasury – I, Govt of West Bengal.

Other retirement benefits are accounted for as and when being actually incurred

Earmarked / Endowment Funds -

Earmarked funds created by the institute and Endowment funds received by the institute has been separately accounted for and also its corresponding investments and assets.

Sponsored Projects -

In respect of the ongoing sponsored projects, the amounts received from sponsors are credited to the head `Current Liabilities and Provisions – Current Liabilities – Other Liabilities – Receipts against ongoing projects". As and when expenditure is incurred / advances are paid against such projects, or the concerned project account is debited with allocated overhead charges, the liability account is debited.

In addition to the earmarked fund for the junior research fellowships funded by the University Grants Commission, Fellowships and Scholarships are also sponsored by various organizations. These are accounted in the same way as sponsored projects except that the expenditure generally is on disbursement of fellowships and scholarships, which may include allowances for contingent expenditure by the fellows and scholars.

The institute itself also awards fellowships and scholarships, which are accounted as Academic Expenses.

Income Tax -

The income of the Institute is exempt from Income Tax under section 10(23c)(iiiab) of the Income Tax Act, 1961. No provision for income tax is therefore made in the accounts.

SCHEDULE 24

Contingent Liabilities & Notes on Accounts:

- 1. Claims against the Institute suits Rs. Nil (Previous year Rs. Nil)
- 2. Previous year's figures have been regrouped / rearranged whenever deems fit.
- 3. Addition in the year to fixed assets purchased out of sponsored projects and earmarked fund for which the effective ownership lies with the institute and the institute is using the same for the purpose of the activities of the institute only:

Plan Expenditure Rs. 4,46,31,913

Sponsored Projects Rs. 6,33,34,716

The assets created out of Sponsored Projects have been set up by credit to Capital Fund; however, assets procured under Plan Expenditure has not been credited to the Capital Fund as the MoE, Govt of India has not sanctioned the grant for that purpose.

In the balance sheet as on 31st March 2014 and the balance sheet of earlier years, fixed assets created out of plan funds and fixed assets created out of non-plan funds or other funds from sources were not exhibited distinctly.

Disclosure on Library Books:

4041 books worth Rs. 1,92,208 missing as per report submitted by a CA firm on physical verification of the library books as on 31/03/2017; the same could not be reduced from the written down value of the library books as per schedule 4 as the date of addition and consequent depreciation charged on the same could not be accurately ascertained;

- 4. The Institute is set up on land measuring 114 acres at Shibpur. The institute is an erstwhile state university and the title of the land rests with the Government of West Bengal. The title of the land is not yet transferred to the Institute's name and the state government has been approached to make the necessary transfer process. The value of land is taken as Nil in the balance sheet.
- 5. In the opinion of the management, the current assets, loans and advances and deposits have been valued on realization in the ordinary course, equal at least to the aggregate amount shown in the balance sheet.

Annual Report 2021-22 | Indian Institute of Engineering Science and Technology, Shibpur

6. In the endeavor of the institute to conform the prescribed common format to the best extent

possible, the provident fund assets and liabilities have been taken out from the accounts and

are being presented separately.

7. Corpus Fund for Future Development- A new earmarked fund has been created during the

year 2019-20, out of the fixed deposits made out of general funds over the year and the

balance as on 31/03/2019 stood at Rs. 45,23,722.40.

8. In spite of the best of the efforts, certain receipts to the extent of Rs. 17,79,059 could not be

traced and no claim has been made against the Institute to refund the same. As considerable

time has been lapsed, the same is being credited to the Corpus Fund of the Institute in the

financial year 2020-21.

9. Schedules 1 to 24 are annexed to and form an integral part of the balance sheet as on 31st

March 2022 and the Income and Expenditure account for the year ended as on that date.

Dy. Registrar (Finance)

Registrar

Director

For DEBASIS BANDYOPADHYAY & CO. Chartered Accountants (Debasis Bandyopadhyay) Proprietor M. No. -057861

ANNEXURE - I

ENDOWMENT FUND FIXED DEPOSITS AS AT 31.03.2022

					Closing	Closing Balance as on 31,03,2022	03.2022		
			Date of	90,0				70	
Si. No.	Name of Endowment Fund	Account No.	Deposit / Reinvestment	Interest	Principal Amt.	Accum ulated Int.	TOTAL	Maturity	Maturity Value
_	Von New man Scholarship Fund	0171100443029	12-09-2018	%9	53,747		53,747	12-09-2023	54,623
2	Dr. S. P. Brambha Memorial Merit Scholarship Fund	0171100442992	12-09-2018	%9	1,06,895		1,06,895	12-09-2023	1,08,638
3	Probir Sengupta Memorial Prize Fund	0171100433112	31-10-2017	%9	11,302	3,241	14,543	31-10-2022	15,223
4	Renu Chakraborty V. L. Fund	0171100433105	31-10-2017	%9	55,737		55,737	31-10-2022	55,737
5	Dr. Fazlur Kader Memorial Scholarship Fund	0171100442800	12-09-2018	%9	1,86,441	34,494	2,20,936	12-09-2023	2,43,619
9	J. N. Neogi Students' Benefit Fund	0171100442862	12-09-2018	%9	1,13,020	25,723	1,38,743	12-09-2023	1,52,221
7	Sunita Memorial Prize Fund	0171100442879	12-09-2018	%9	24,101	5,486	29,587	12-09-2023	32,461
80	Dr. B. N. Dey Scholarship Fund	0171100442886	12-09-2018	%9	58,692	13,357	72,049	12-09-2023	79,049
6	Kunja Kusum Scholarship Fund	0171100442961	12-09-2018	%9	77,444		77,444	12-09-2023	78,706
	Sarat Kanta Nrmalya Basini								
10	Biswas Golden Jubilee Scholarship	0171100433099	01-11-2017	%9	20,087		20,087	01-11-2022	20,087
	Fund								
	Prof. N. N. Sen Memorial Scholarship Fund	0171100443074	12-09-2018	%9	39,432		39,432	12-09-2023	40,075
12	Acharya P. C. Roy Scholarship	0171100443012	12-09-2018	%9	91,587		91,587	12-09-2023	93,080
13	Ramiai Nandy & Genoda Sundari Memoriai Scholarship Fund	0171100442947	12-09-2018	%9	46,928		46,928	12-09-2023	47,693
14	Liluah Iron Works Ltd. Scholarship	0171100443043	12-09-2018	%9	47,693		47,693	12-09-2023	47,693
15	R & K Ahmed Merit Scholarship	0171100443036	12-09-2018	%9	56,769		56,769	12-09-2023	57,694
16	The President of India Gold Medal	0171100443050	12-09-2018	%9	692'99		56,769	12-09-2023	57,694
17	Alumni Donation Seminar Series	0171100433075	31-10-2017	%9	4,94,632	1,67,258	6,61,890	31-10-2022	6,66,197
	C/F				15,41,276	2,49,560	17,90,836		

ANNEXURE - I

ENDOWMENT FUND FIXED DEPOSITS AS AT 31.03.2022

					Closing	Closing Balance as on 31.03.2022	03.2022		
Si. No.	Name of Endowment Fund	Account No.	Deposit / Reinvestment	Rate of Interest	Principal Amt.	Accumulated Int.	TOTAL	Date of Maturity	Maturity Value
	B/F.				15,41,276	2,49,560	17,90,836		
18	Jogesh Chandra Banerjee Memorial Scholarship Fund	0171100443081	12-09-2018	%9	4,78,376		4,78,376	12-09-2023	4,86,174
19	Anil Burnw al Merit cum Means Scholarship Fund	0171100303499	08-08-2017	%9	1,09,469		1,09,469	08-08-2022	1,09,469
20	Jaya Smriti Puroskar (BESUS)	0171100404736	08-08-2017	%9	33,205	10,673	43,878	08-08-2022	44,409
21	BECA - 1964	0171100441964	12-09-2018	%9	3,58,558	84,160	4,42,718	12-09-2023	4,82,925
22	Prof. S. C. Dasgupta Gold Medal	1532100009461	09-11-2017	%9	2,13,245	54,899	2,68,144	08-08-2022	2,84,695
23	Jaya Smriti Puroskar	1532100009478	08-08-2017	%9	30,411	8,955	39,367	08-08-2022	40,601
24	Dhaibat Ghosh Memorial Scholarship	1532100058113	23-04-2017	%9	6,24,204	1,91,140	8,15,344	23-04-2022	8,40,712
25	Prabodh Kumar Chatterjee Fund - 1	1532100047560	17-04-2021	2.36%	2,54,125		2,54,125	17-04-2024	2,54,125
26	Prabodh Kumar Chatterjee Fund - 2	1532100058122	23-04-2021	2.20%	20,000		20,000	23-04-2024	20,000
27	Rai Sahib Amulya Chandra Mitra Endow ment Fund	1532100047588	17-05-2021	5.36%	4,09,963	24,458	4,34,421	17-05-2024	4,80,967
28	Rai Sahib Amulya Chandra Mitra Endow ment Fund	1532100047579	17-05-2021	%9£'5	3,05,689		3,05,689	17-05-2024	3,05,689
29	S. C. Dasgupta Memorial Fund	1532100047384	17-05-2021	2.36%	22,54,351	1,31,045	23,85,396	17-05-2024	26,44,797
30	Wadhusudan Bhattacharjee Memorial Fund	1532100062116	12-07-2021	5.10%	2,00,000		2,00,000	12-07-2024	2,00,000
31	Sougata Mukherjee Memo. Aw ard for Excellence Fund	1532100089751	13-09-2020	5.25%	5,09,507		5,09,507	13-06-2022	5,09,507
32	Students Rew ard Programme Fund	1532100089760	13-09-2021	2.25%	16,50,000		16,50,000	13-06-2022	16,50,000
33	Suhas Choudry Sw imming Excellence Prize Fund	1532100055888	22-04-2021	5.10%	1,27,549		1,27,549	22-04-2022	1,27,549
34	Ujjal Dasgupta Scholarship Corpus Fund	1532100055912	22-04-2021	5.10%	14,21,977		14,21,977	22-04-2022	14,21,977
35	GAABESU Admission Grant - 2	1532100055930	14-03-2021	%9	5,82,400		5,82,400	14-03-2024	5,82,400
	C/F				1,11,54,304	7,54,890	1,19,09,195		

ANNEXURE - I

ENDOWMENT FUND FIXED DEPOSITS AS AT 31.03.2022

	Maturity Value		1,03,812	2,04,175	1,03,812	1,70,192	31,50,000	16,58,787	5,53,193	1,09,297	1,26,780	86,01,065	36,444	2,344	1,13,490	82,50,177	82,50,178	99,02,000	4,50,000	22,50,000	3,47,532	
	Date of Maturity		03-12-2022	26-09-2023	02-07-2023	26-08-2022	23-11-2024	26-12-2022	27-06-2022	27-06-2022	03-07-2022	27-06-2022	09-09-2022	09-09-2022	30-08-2022	15-06-2022	15-06-2022	08-02-2027	02-06-2028	26-09-2028	30-07-2024	
33.2022	TOTAL	1,19,09,195	1,02,381	1,86,846	92,056	1,67,131	31,50,000	16,58,787	5,46,619	1,07,998	1,25,273	84,98,851	35,722	2,298	1,13,490	81,35,454	81,35,455	99,02,000	4,50,000	22,50,000	3,47,532	5,59,20,087
Closing Balance as on 31.03.2022	Accum ulated Int.	7,54,890	25,304	35,252	17,979	2,434			19,722	968′£	4,520	3,06,641	1,010	99		2,85,210	2,85,210					17,42,133
Closing B	Principal Amt.	1,11,54,304	77,077	1,51,594	77,077	1,64,697	31,50,000	16,58,787	5,26,897	1,04,102	1,20,753	81,92,210	34,712	2,233	1,13,490	78,50,244	78,50,245	99,02,000	4,50,000	22,50,000	3,47,532	5,41,77,955
	Rate of Interest		%9	%00.9	%00.9	4.40%	2.00%	2.00%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%	6.25%	2.00%	2.00%	6.50%	%00.9	%00.9	%00.9	
Date of	Deposit / Reinvestment		03-12-2017	26-09-2018	02-07-2018	26-11-2021	23-11-2021	26-12-2021	27-06-2021	27-06-2021	03-07-2021	27-06-2021	09-09-2021	09-09-2021	30-08-2019	15-06-2021	15-06-2021	08-02-2017	02-06-2018	26-09-2018	30-07-2019	
	Account No.		1532100070364	1532100090632	1532100084640	23690310006207	23690310011904	1532100194853	23690310006481	2369031006504	23690310006573	23690310006498	23690310011584	23690310011577	10382034315	34205796198	34205799520	1532100196833	1532100243766	1532100255615	1532100286817	L:
	Name of Endowment Fund	B/F.	Prof. P. C. Mtra Memorial Aw ard	Prof. P. C. Mitra Memorial Award	K. K. Pal Chaudhuri Arch.	Prof. A. K. Seal Gold Medal	Prof. Amiya Basu Endowment Fund - 1	Prof. Amiya Basu Endowment Fund - 2	B.E.C. (55) Scholarship Fund	Prabodh Chandra Mitra Scholarship Fund	Siddhananda Memorial Lecture Fund	BESU Endowment Fund	BESU Endowment Fund	B.E.C. (55) Scholarship Fund	Bijoy Ashu Chair Professor Fund	Bijoy Ashu Chair Professor Fund	Bijoy Ashu Chair Professor Fund	Alpona Banerjee Memorial Endowment Fund	Provat Chandra Neogi Memorial Endowment Fund - 1	Provat Chandra Neogi Memorial Endowment Fund - 2	Tarun Kanti Ghosh Memorial	GRAND TOTAL:
	Si. No.		36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	

ANNEXURE - II

EARMARKED FUND FIXED DEPOSITS AS AT 31.03.2022

SI. No.	Name of Endowment Fund	Account No.	Date of Deposit /	Rate of	Closing	Closing Balance as on 31.03.2022	03.2022	Date of	Maturity Value
			Reinvestment	Interest	Principal Amt.	Accumulated Interest	Total	Maturity	
1	BESUS Project Fund	1532100055985	13-05-2021	5.36%	25,12,020		25,12,020	13-05-2024	25,12,020
2	BESUS Project Fund	1532100055994	13-05-2021	5.36%	25,12,020		25,12,020	13-05-2024	25,12,020
3	BESUS Project Fund	1532100056009	13-05-2021	5.36%	25,12,020		25,12,020	13-05-2024	25,12,020
4	BESUS Project Fund	1532100056018	13-05-2021	5.36%	25,12,020		25,12,020	13-05-2024	25,12,020
2	BESUS Project Fund	1532100056027	13-05-2021	5.36%	25,12,020		25,12,020	13-05-2024	25,12,020
9	BESUS Project Fund	1532100066413	25-08-2021	5.00%	1,64,99,514	4,12,694	1,69,12,208	25-08-2022	1,73,40,087
7	BESUS Project Fund	1532100066477	25-08-2021	5.10%	1,64,99,515	4,48,140	1,69,47,655	25-08-2024	1,92,08,710
8	BESUS Project Fund	1532100066440	25-08-2021	5.10%	1,64,99,514	4,48,138	1,69,47,652	25-08-2024	1,92,08,709
6	BESUS Project Fund	1532100046419	06-01-2022	5.36%	90,85,810		90,85,810	06-01-2025	90,85,810
10	BECE International Symposium	1532100184465	29-03-2022	5.10%	3,09,902	1	3,09,902	29-12-2024	3,56,245
11	BECE International Symposium	1532100184458	29-03-2022	5.10%	11,86,691	1	11,86,691	29-12-2024	13,64,151
		SUB TO TAL			7,26,41,046	13,08,972	7,39,50,018		7,74,03,416
12	BESUS Overhead Fund	1532100036786	09-03-2020	6.25%	5,00,000		5,00,000	09-03-5023	5,00,000
13	BESUS Overhead Fund	1532100036795	09-03-2020	6.25%	5,00,000		5,00,000	09-03-5023	5,00,000
14	BESUS Overhead Fund	1532100036801	09-03-2020	6.25%	5,00,000		5,00,000	09-03-2023	5,00,000
15	BESUS Overhead Fund	1532100036810	09-03-2020	6.25%	5,00,000		5,00,000	09-03-2023	5,00,000
16	BESUS Overhead Fund	1532100036829	09-03-2020	6.25%	5,00,000		5,00,000	09-03-5023	5,00,000
17	BESUS Overhead Fund	1532100036838	09-03-2020	6.25%	5,00,000		5,00,000	09-03-5023	5,00,000
18	BESUS Overhead Fund	1532100045669	04-01-2022	5.10%	5,24,988		5,24,988	04-01-2025	5,24,988
19	BESUS Overhead Fund	1532100045702	06-01-2022	5.26%	5,25,036		5,25,036	06-01-2025	5,25,036
20	BESUS Overhead Fund	1532100050193	21-11-2020	5.36%	81,81,873	5,20,895	87,02,767	21-11-2023	95,98,945
	C/F.				1,22,31,897	5,20,895	1,27,52,791		

ANNEXURE - II

EARMARKED FUND FIXED DEPOSITS AS AT 31.03.2022

<u>v</u>	Name of Endowment Find	A tournt No	Date of	Rate of	Closing	Closing Balance as on 31.03.2022	03.2022	Date of	Maturity Value
5			Reinvestment	Interest	Principal Amt.	Accumulated Interest	Total	Maturity	
	B/F.				1,22,31,897	5,20,895	1,27,52,791		
21	BESUS Overhead Fund	1532100052924	06-01-2022	5.26%	10,14,384	40,361	10,54,745	06-01-2025	11,86,554
22	BESUS Overhead Fund	1532100052933	06-01-2022	5.26%	20,28,770	80,726	21,09,496	06-01-2025	23,43,110
23	BESUS Overhead Fund	1532100055958	14-03-2021	5.36%	50,92,116	5,11,899	56,04,015	14-03-2024	59,74,053
24	BESUS Overhead Fund	1532100055967	13-05-2021	5.36%	51,22,838	2,13,712	53,36,550	13-05-2024	60,10,093
25	BESUS Overhead Fund	1532100088406	29-08-2019	6.25%	62,92,743	10,05,753	72,98,496	29-08-2022	75,79,500
26	BESUS Overhead Fund	1532100071390	17-12-2021	5.10%	93,93,058	4,37,071	98,30,129	17-12-2024	1,09,35,384
27	BESUS Overhead Fund	1532100071406	17-12-2021	5.10%	93,93,058	4,37,071	98,30,129	17-12-2024	1,09,35,384
28	BESUS Overhead Fund	1532100071372	17-12-2021	5.10%	18,32,754	85,272	19,18,026	17-12-2024	21,33,689
29	BESUS Overhead Fund	1532100102414	19-02-2020	6.25%	69,75,863	8,55,265	78,31,128	19-02-2023	84,02,307
30	BESUS Overhead Fund	1532100105484	31-03-2020	6.25%	31,00,384	3,78,909	34,79,293	31-03-2023	37,34,359
31	BESUS Overhead Fund	1532100120920	13-05-2021	5.20%	1,15,40,871	3,06,864	1,18,47,735	13-05-2024	1,34,75,719
		SUB TO TAL			7,40,18,735	48,73,797	7,88,92,532		8,63,59,121
32	BESUS Foundation	23690310007990	28-04-2020	5.85%	18,01,717	2,17,227	20,18,944	23-01-2023	21,12,302
33	BESUS Foundation	23690310011676	12-04-2021	5.00%	8,409	144	8,850	17-02-2023	9,218
34	Corpus Fund	23690310006405	17-06-2021	4.90%	1,20,14,544	4,74,698	1,24,89,242	17-06-2022	1,26,14,163
35	Corpus Fund	1532100142847	28-06-2021	5.10%	8,66,561	33,771	9,00,332	28-06-2022	9,11,589
36	Maintenance Fund	23690310006436	17-06-2021	4.90%	1,94,84,110	7,69,823	2,02,53,933	17-06-2022	2,04,56,518
37	Maintenance Fund	1532100142816	28-06-2021	5.10%	12,92,621	50,375	13,42,996	28-06-2022	13,59,787
38	Equipment Replacement Fund	1532100142823	17-05-2021	5.20%	6,92,600	54,904	7,47,504	17-05-2022	7,29,324
39	Faculty Development Fund	1532100142830	28-06-2021	5.10%	7,54,868	36,924	7,91,792	28-06-2022	7,94,109
40	Staff Development Fund	23690310006412	17-06-2021	4.90%	96,84,095	3,82,621	1,00,66,716	17-06-2022	1,01,67,406
41	Depreciation Fund	23690310006429	17-06-2021	4.90%	84,47,605	3,33,767	87,81,372	17-06-2022	88,69,206
42	B.E. College - General Fund A/c	1532100046932	14-09-2020	5.25%	1,00,00,000		1,00,00,000	14-09-2028	1,00,00,000
43	BEC General Fund	23690310008157	13-05-2020	5.75%	91,869	10,211	1,02,080	08-02-2023	1,07,415
44	BEC General Fund	23690310011669	27-05-2021	2.00%	2,227	95	2,322	16-04-2023	2,445
	C/F.				6,51,41,226	23,64,858	6,75,06,084		

ANNEXURE - II

EARMARKED FUND FIXED DEPOSITS AS AT 31.03.2022

:	:	;	Date of	Rate of	Closing	Closing Balance as on 31.03.2022	03.2022	Date of	:
S S	Name of Endowment Fund	Account No.	Deposit / Reinvestment	Interest	Principal Amt.	Accumulated Interest	Total	Maturity	Maturity Value
	B/F.				6,51,41,226	23,64,858	6,75,06,084		
45	BEC General Fund	23690310008140	13-05-2020	5.75%	75,72,530	8,75,683	84,48,213	08-02-2023	88,53,972
46	BEC General Fund	23690310011515	23-05-2021	2.00%	18,062	191	18,829	10-04-2023	19,827
47	BEC General Fund	23690310008133	13-05-2020	5.75%	65,88,093	7,61,844	73,49,937	08-02-2023	77,02,947
48	BEC General Fund	23690310007983	28-04-2020	3.60%	6,51,85,129	45,97,705	6,97,82,834	23-01-2023	7,19,06,955
49	BEC General Fund	23690310011645	08-04-2021	5.00%	1,61,725	8,462	1,70,187	11-02-2023	1,77,239
20	BEC General Fund	23690310007976	28-04-2020	3.60%	2,40,46,070	16,96,043	2,57,42,113	23-01-2023	2,65,25,677
51	BEC General Fund	23690310011638	08-04-2021	2.00%	59,658	3,121	62,779	11-02-2023	65,381
52	BEC General Fund	23690310007969	28-04-2020	3.60%	5,47,55,509	38,62,071	5,86,17,580	23-01-2023	6,04,01,843
53	BEC General Fund	23690310011621	08-04-2021	2.00%	1,35,849	7,108	1,42,957	11-02-2023	1,48,881
54	BEC General Fund	23690310007952	28-04-2020	3.60%	2,89,71,169	20,88,688	3,10,59,857	23-01-2023	3,19,58,647
22	BEC General Fund	23690310011614	08-04-2021	2.00%	71,877	3,761	75,638	11-02-2023	78,772
26	BEC General Fund	23690310007945	28-04-2020	5.85%	1,44,85,583	17,46,487	1,62,32,070	23-01-2023	1,69,82,650
22	BEC General Fund	23690310007938	28-04-2020	3.60%	2,46,25,494	17,75,385	2,64,00,879	23-01-2023	2,71,64,851
28	BEC General Fund	23690310011591	08-04-2021	5.00%	61,096	3,197	64,293	11-02-2023	66,957
29	Institute General Fund	23690310006061	13-05-2021	3.50%	4,36,29,336	13,53,788	4,49,83,124	13-05-2022	4,51,76,522
09	Institute General Fund	23690310011324	07-12-2021	4.40%	95,641	2,247	97,888	20-07-2022	98,263
61	IIEST-Student Fee Collection Fun	23690310017302	31-10-2020	3.25%	14,55,09,379	69,13,397	15,24,22,776	31-10-2023	16,03,48,021
62	BESU	34087266649	05-02-2022	5.10%	86,81,651	68,405	87,50,056	05-02-2023	91,32,955
63	BESU	34087253584	05-02-2022	5.10%	86,81,651	68,405	87,50,056	05-02-2023	91,32,955
49	BESU	34087265125	05-02-2022	5.10%	86,81,651	68,405	87,50,056	05-02-2023	91,32,955
92	BESU	34087241863	05-02-2022	5.10%	86,81,650	68,405	87,50,055	05-02-2023	91,32,594
99	BESU	34087247413	05-02-2022	5.10%	86,81,650	68,405	87,50,055	05-02-2023	91,32,594
29	BESU	34087250572	05-02-2022	5.10%	86,81,650	68,405	87,50,055	05-02-2023	91,32,954
89	BESU	31688180670	08-03-2022	5.20%	6,76,663	36,128	7,12,791	02-12-2024	7,79,282
69	BESU	31744729481	29-07-2019	5.20%	93,01,033	11,81,442	1,04,82,475	24-04-2022	1,11,38,520
70	Digital Education Hub	40821107056	02-03-2022	5.45%	70,00,000		70,00,000	02-03-2025	82,34,283
		SUB TO TAL			55,01,81,025	2,96,92,610	57,98,73,635		60,07,59,979
	95	GRAND TOTAL:			69,68,40,806	3,58,75,379	73,27,16,186		76,45,22,516

ANNEXURE - III & IV

GENERAL FUND FIXED DEPOSITS AS AT 31.03.2022

(Current) Principal Amt. Accumulated Int. TOTAL Date of Maturity M 4.90% 33,18,110.40 1,31,237.88 34,49,348.28 17-06-2022 17-06-2022 5.25% 99,00,000.00 0 07-08-2026 0 07-08-2026 13,127,724.00 0 07-11-2024 5.10% 1,37,56,034.00 17,27,724.00 1,54,83,758.00 07-04-2023 1, 66,864.00 12,057.00 78,921.00 31-08-2022 1, 4.40% 95,26,470 82,257 96,08,727 20-08-2022 5.45,000 68,323 6,13,323 16-08-2022 5% 5,45,000 68,323 6,13,323 16-08-2022 5% 5,45,000 68,323 4,38,79,589.28 4,4					Rate of	Closing	Closing Balance as on 31.03.2022	3.2022		
BECSOMS 13.690310006399 17-06-2021 4.90% 33,18,110.40 1,31,237.88 34,49,348.28 17-06-2022 BECSOMS 153210005890 07-11-2021 5.25% 99,00,000.00 - 99,00,000.00 07-16-2026 BECSOMS 1532100058919 07-11-2021 5.10% 26,00,000.00 - 26,00,000.00 07-11-2024 1,20,000.00 PDSIT 003414136321 06-04-2020 1,37,56,034.00 17,27,724.00 1,54,83,758.00 07-04-2023 1, PDSIT 00341415136 06-03-2019 06-03-2019 4.40% 95,26,470 12,057.00 31-08-2022 INEST,SHIBPUR 3578315512 20-01-2022 4.40% 95,26,470 82,257 96,08,727 20-08-2022 INEST,SHIBPUR 38692442983 17-08-2019 5% 5,45,000 68,323 6,13,323 16-08-2022 INST,SHIBPUR 38692442983 17-08-2019 5% 5,45,000 68,323 6,13,323 16-08-2022 INST,SHIBPUR 38692442983 17-08-2019 5% 5,45,00	SI. No.	Name of Fund	Account No.	Date of Deposit / Keinvestment (Current)	Interest (Current)	Principal Amt.	Accumulated Int.	TOTAL	Date of Maturity	Maturity Value
BECSOMS 1532100058900 07-11-2021 5.25% 99,00,000.00 - 99,00,000.00 07-08-2026 BECSOMS 1532100058919 07-11-2021 5.10% 26,00,000.00 - 26,00,000.00 07-11-2024 1, PDSIT 003414136321 06-04-2020 1,37,56,034.00 17,27,724.00 1,54,83,758.00 07-04-2023 1, PDSIT 003414151386 06-04-2020 4.40% 95,26,470 12,057.00 78,921.00 31-08-2022 PDSIT 003414151586 05-03-2019 4.40% 95,26,470 82,257 96,08,727 20-08-2022 IIEST,SHIBPUR 38471491524 21-05-2019 5.10% 18,03,390 3,42,122 21,45,512 20-08-2022 IIEST,SHIBPUR 38692442983 17-08-2019 5% 5,45,000 68,323 6,13,5323 16-08-2022 AMAND TOTAL: A A 4,15,15,868.40 23,63,720.88 4,38,79,589.28 4,4	1	BECSOMS	23690310006399	17-06-2021	4.90%	33,18,110.40	1,31,237.88	34,49,348.28	17-06-2022	34,83,709.40
BECSOMS 1532100058919 07-11-2021 5.10% 26,00,000.00 - 26,00,000.00 07-11-2024 1,20,21,2024 1,20,20,000.00 0 - 26,00,000.00 0 - 26,00,000.00 0 07-11-2024 1,20,2023 1,20,2020 <t< td=""><td>2</td><td>BECSOMS</td><td>1532100058900</td><td>07-11-2021</td><td>5.25%</td><td>99,00,000.00</td><td>-</td><td>00.000,000,66</td><td>07-08-2026</td><td>99,00,000.00</td></t<>	2	BECSOMS	1532100058900	07-11-2021	5.25%	99,00,000.00	-	00.000,000,66	07-08-2026	99,00,000.00
PDSIT 003414136321 06-04-2020 1,37,56,034.00 17,27,724.00 1,54,83,758.00 07-04-2023 PDSIT 003414101445 30-08-2019 96,864.00 12,057.00 78,921.00 31-08-2022 PDSIT 003414151586 05-03-2019 4.40% 95,26,470 82,257 96,08,727 20-08-2022 IIEST,SHIBPUR 38471491524 21-05-2019 5.10% 18,03,390 3,42,122 21,45,512 20-08-2022 IIEST,SHIBPUR 38692442983 17-08-2019 5,45,000 68,323 6,13,323 16-08-2022 AMD TOTAL: AMD TOTAL: A,15,15,868.40 23,63,720.88 4,38,79,589.28 A	3	BECSOMS	1532100058919	07-11-2021	5.10%	26,00,000.00	1	26,00,000.00	07-11-2024	26,00,000.00
PDSIT 003414101445 30-08-2019 66,864.00 12,057.00 78,921.00 31-08-2022 PDSIT 003414151586 05-03-2019 4.40% 95,26,470 82,257 96,08,727 20-08-2022 IIEST,SHIBPUR 38471491524 21-05-2019 5.10% 18,03,390 3,42,122 21,45,512 20-08-2022 IIEST,SHIBPUR 38692442983 17-08-2019 5% 5,45,000 68,323 6,13,323 16-08-2022 AMND TOTAL: A15,15k 4,15,15,868.40 23,63,720.88 4,38,79,589.28 8	4	PDSIT	003414136321	06-04-2020		1,37,56,034.00	17,27,724.00	1,54,83,758.00	07-04-2023	1,64,49,668.00
PDSIT 003414151586 05-03-2019 - <td>5</td> <td>PDSIT</td> <td>003414101445</td> <td>30-08-2019</td> <td></td> <td>66,864.00</td> <td>12,057.00</td> <td>78,921.00</td> <td>31-08-2022</td> <td>82,179.00</td>	5	PDSIT	003414101445	30-08-2019		66,864.00	12,057.00	78,921.00	31-08-2022	82,179.00
IIEST,SHIBPUR 3578315512 20-01-2022 4.40% 95,26,470 82,257 96,08,727 20-08-2022	9	PDSIT	003414151586	05-03-2019		-	-	-		
INST.SHIBPUR 38471491524	7	IIEST,SHIBPUR	3578315512	20-01-2022	4.40%	95,26,470	82,257	96,08,727	20-08-2022	97,73,593
INEST,SHIBPUR 38692442983 17-08-2019 5% 5,45,000 68,323 6,13,323 16-08-2022 16-0	8	IIEST,SHIBPUR	38471491524	21-05-2019	5.10%	18,03,390	3,42,122	21,45,512	20-08-2022	
4,15,15,868.40 23,63,720.88 4,38,79,589.28	6	IIEST,SHIBPUR	38692442983	17-08-2019	2%	5,45,000	68,323	6,13,323	16-08-2022	
4,15,15,868.40 23,63,720.88 4,38,79,589.28										
4,15,15,868.40 23,63,720.88 4,38,79,589.28										
		GRAND TOTAL:				4,15,15,868.40	23,63,720.88	4,38,79,589.28		4,22,89,149.40

ANNEXURE - V

Sub: CURRENT BANK ACCOUNT (2021-22)

SI.	Name of		A tangent	Type of	Hoad of Account	Google	Closing Balance as
Š.	the Bank			Account	nead of Account	prod in .	on 31.03.2022
1	P.N.B.		0171050031501	C/A	BEC General Fund	Grants from State Govt. & Other Receipt	12,32,203.88
2	P.N.B.		Sweep A/c 0171050031501	C/A	BEC General Fund	Grants from State Govt. & Other Receipt	6,76,50,000.00
C	0 2		01710E0031E10	۷/۷		Testing Fees, Consultancy Fees,	
ი	۲. ۲. ۱.		01/1030031310	¥ />	BEC Development rund	Donation for Development Scheme	7,92,589.14
5	2		0121050031610	۷/۷		Testing Fees, Consultancy Fees,	
1	r.N.D.		sweep A/COT/1030031310	C/ A	BEC Development rund	Donation for Development Scheme	1,94,50,000.00
2	P.N.B.		0171050031528	C/A	BEC Employees Benefit Fund	Pension Contribution, Gratuity etc.	5,26,277.87
9	P.N.B.		Sweep A/c 0171050031528	C/A	BEC Employees Benefit Fund	Pension Contribution, Gratuity etc.	70,50,000.00
1	2		0171050031526	٧/٧	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Miscellaneous Receipt, E.C. & H.R.	
`			01/1030031330	¥ />	BEC IVIISCELIAITEOUS FUIIG	Charges etc.	20,76,967.05
٥	0 2		36316003012103/V 200713	۷/۷	Paris Succession National	Miscellaneous Receipt, E.C. & H.R.	
0	r.N.D.		sweep A/COT/1030031330	C/ A	BEC IVIISCELIALIEOUS FUILU	Charges etc.	7,88,00,000.00
6	P.N.B.		171050031293	C/A	QIP	Quality Improvement Programme	27,962.52
10	B.I., Howrah	4	31906556458	C/A	Prof. Tax	Tax & Duty	87,44,539.00
						TOTAL	18,63,50,539.46

ANNEXURE - VI

Sub: SAVINGS BANK ACCOUNT (2021-22)

<u>.</u> ;	Name of the Bank	Account No.	Type of Account	Head of Account	Purpose	Closing Balance as on 31.03.2022
1	P.N.B.	171010375799	S.B.	Corpus Fund	Earmarked - TEQIP	34,91,705.05
2	P.N.B.	1532010020688	S.B.	Faculty Development	Earmarked - TEQIP	34,953.00
3	P.N.B.	1532010020679	S.B.	Equipment Replacement	Earmarked - TEQIP	72,975.93
4	P.N.B.	0171010375829	S.B.	Maintenance Fund	Earmarked - TEQIP	2,430.00
5	P.N.B.	0171010375811	S.B.	Depreciation Fund	Earmarked - TEQIP	93,736.00
9	P.N.B.	0171010375802	S.B.	Staff Development	Earmarked - TEQIP	2,269.00
7	P.N.B.	1532010006354	S.B.	BESUS Foundation	Alumni Donation	1,24,677.91
	P.N.B.	Sweep A/c 1532010006354	S.B.	BESUS Foundation	Alumni Donation	1,79,00,000.00
6	I.C.I.C.I.	003401010516	S.B.	P.D.S.I.T.	Academic Fee Receipt A/c	29,431.00
0.	P.N.B.	0171010348333	S.B.	B.E.C. Scholarship	Scholarship A/c	11,16,498.14
1	P.N.B.	0171010348350	S.B.	B.E.C. Prize	Endowment / Earmarked / Chair A/c	2,42,790.67
2	P.N.B.	1532010029740	S.B.	BESUS - NSS A/C	National Service Scheme	3,93,826.30
ε.	P.N.B.	1532010077288	S.B.	Visvesvaraya PHD Fellowship	Sponsored Fellowship A/c	23,01,151.52
4.	P.N.B.	1532010079772	S.B.	GIAN Courses	Endowment / Earmarked / Chair A/c	1,50,724.20
5.	P.N.B.	1532010079763	S.B.	Students Welfare Fund	Endowment / Earmarked / Chair A/c	12,45,056.25
9	U.C.O.	23690110000489	S.B.	Tuition Fees	Academic Fee Receipt A/c	9,44,768.45
7.	U.C.O.	Sweep A/c 23690110000489	S.B.	Tuition Fees	Academic Fee Receipt A/c	48,57,58,215.00
∞.	u.c.o.	23690110000960	S.B.	Academic Services	Academic Fee Receipt A/c	67,94,357.73
6:	U.C.O.	23690110040461	S.B.	Prof. Amiya Basu Endowment	Endowment / Earmarked / Chair A/c	7,82,694.84
0	.B.I. Shalimar	1381942908	S.B.	Bijou Ashu Prof.	Endowment / Earmarked / Chair A/c	9,24,301.85
1	S.B.I., BESUS	33725727857	S.B.	I.I.E.S.T.	Grants from MHRD A/C	11,81,92,036.86
7	S.B.I., BESUS	39212800500	S.B.	Alumni Cell IIEST, Shibpur	Alumni Donation	23,29,804.00
3	P.N.B.	1532010005180	S.B.	Research & Consultancy Fund	Sponsored Project A/c	(2,94,24,427.76)
4	P.N.B.	Sweep A/c	S.B.	Research & Consultancy Fund	Sponsored Project A/c	29,39,00,000.00
5	P.N.B.	0171010301001	S.B.	BE College Testing Fees Fund	Sponsored Project A/c	1,05,475.30
9	P.N.B.	Sweep A/c 0171010301001	S.B.	BE College Testing Fees Fund	Sponsored Project A/c	47,00,000.00
7	P.N.B.	1532010005173	S.B.	Institutional Development Fund	Institute Receipt - Earmarked A/c	1,36,72,044.00
∞.	P.N.B.	Sweep A/c 1532010005173	S.B.	Institutional Development Fund	Institute Receipt - Earmarked A/c	8,26,00,000.00
6	P.N.B.	1532010084491	S.B.	BCMFRL of Homoeopathy	Sponsored Project A/c	3,77,84,053.92
0	P.N.B.	1532010011963	S.B.	continuing Education Centre (CEC	Sponsored Project A/c	6,31,012.19
77	OOO	23690110091852	S.B.	IIEST SHIBPUR R&C MISC. A/C	Sponsored Project A/c	10,46,209.00
22	OON	Sweep A/c-23690110091852	S.B.	IIEST SHIBPUR R&C MISC. A/C	Sponsored Project A/c	7,90,00,000.00
33	P.N.B.	1532010089955	S.B.	ISDCS	Sponsored Project A/c	5,33,885.18
					TOTAL:	1,12,74,76,655.53

ANNEXURE - VII

LIST OF UNADJUSTED ADVANCE GIVEN TO EMPLOYEES AS ON 31.03.2022

SI. No.	Name of the Employees	Closing Balance as on 31.03.2022
1	Golden Jubilee Celebration Committee of E & TC	2,00,000.00
2	Prasanta Kumar Nandi	67,357.00
3	Santi Prasad Maity	6,000.00
4	Haran Chandra Sandhukhan	10,000.00
5	Sukanta Das	10,000.00
		2,93,357.00

ANNEXURE - VIII

LIST OF UNADJUSTED ADVANCE GIVEN TO SUPPLIERS AS ON 31.03.2022

SI. No.	Name of the Suppliers	Closing Balance as on 31.03.2022
1	India Tourism Development Corporation Ltd.	1,00,000.00
	TOTAL:	1,00,000.00

ANNEXURE - IX

LIST OF UNADJUSTED ADVANCE GIVEN TO STUDENTS / RESEARCH SCHOLARS AS ON 31.03.2022

SI. No.	Name of the Student / Research Scholar	Closing Balance as
31. 140.	Name of the Student / Research Scholar	on 31.03.2022
1	Nilesh Mondal	1,00,000.00
	TOTAL:	1,00,000.00



O/O THE DIRECTOR GENERAL OF AUDIT (CENTRAL), KOLKATA

महानिदेशक लेखा परीक्षा का कार्यालय (केंद्रीय) , कोलकाता

8 K S Roy Road GIP Building Kolkata , West Bengal PIN 700001



Date: 28 Oct 2022

To,

The Secretary, Ministry of Education, Department of Higher Education, Shastri Bhawan, New Delhi - 110001

Subject: Separate Audit Report on the accounts of the Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22

Sir/Madam,

I am to forward herewith the Separate Audit Report, in the prescribed format, on the accounts of the Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22. A copy of the annual accounts of the organisation, for the financial year 2021-22, is also enclosed.

- 2. A copy of the Separate Audit Report (both English and Hindi Version), as presented before the Parliament, may please be forwarded to this office, for necessary action at this end.
- 3. The dates of laying of the audited accounts and the Separate Audit Report, for the financial year 2020-21 and 2021-22, on the Tables of both the Houses of Parliament, may also please be communicated to this office.

Yours faithfully,

Encls: As above

DEBOLINA THAKUR Director General

Copy to:-

- 1 The Director, Indian Institute of Engineering Science and Technology, Howrah, Botanical Garden, Dist.-Howrah, West Bengal-711103
- 2 OAD-HQ for kind information
- 3 OAD-AB for kind information



Crimina Calmada Tasks Pies ences DIS-443445 - Se

See Reply Reply to All | Forward | Archive | Delete | Spain | Actions

2021-22 Signature Audit Report on the accounts of the Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22



Cc: (dr finance) aroudhq kol pdac (oadab kol dgac)

SAR_IIEST_2021-22 pdf (394 KB) Cownload | Romand

Download all attachments Remove all attachments

ear Madam/ Sir.

copy of the Separate Audit Report, alongwith Annexure, on the accounts of the Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22, is forward echnology, Howrah, Botanical Garden, Dist.-Howrah, West Bengal-711103, for information and necessary action.

rrangement may please be made for preparation of Hindi Version of the Separate Audit Report, with Annexure, at your end, and for sending the same directly to the Ministry.

may please be ensured that the Audited Accounts and the Separate Audit Report, along with Annexure, are placed before the apex body, for consideration and adoption, before the same are sent to copy of the printed Annual Report, for the financial year 2021-22 (both English and Hindi Version), containing the Audited Accounts and the Separate Audit Report, along with Annexure, as la cessary action at this end.

arm Regards,
ANUSHREE BISWAS,
eputy Director,
to the Director General of Audit (Central), Kolkata.

ply - Reply to All - Forward - More Actions



O/O THE DIRECTOR GENERAL OF AUDIT (CENTRAL), KOLKATA

महानिदेशक लेखा परीक्षा का कार्यालय (केंद्रीय) , कौलकाता

8 K S Roy Road GIP Building Kolkata , West Bengal PIN 700001



Date: 28 Oct 2022

To,

The Director, Indian Institute of Engineering Science and Technology, Howrah, Botanical Garden, Dist.-Howrah, West Bengal-711103

Subject: Separate Audit Report on the accounts of the Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22

Sir/Madam,

A copy of the Separate Audit Report, alongwith Annexure, on the accounts of the Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22, is forwarded to the Director, Indian Institute of Engineering Science and Technology, Howrah, Botanical Garden, Dist.-Howrah, West Bengal-711103 for information and necessary action.

Arrangement may please be made for preparation of Hindi Version of the Separate Audit Report, with Annexure, at your end, and for sending the same directly to the Ministry.

It may please be ensured that the Audited Accounts and the Separate Audit Report, along with Annexure, are placed before the apex body, for consideration and adoption, before the same are sent to the Government for being placed in the Parliament.

A copy of the printed Annual Report, for the financial year 2021-22 (both English and Hindi Version), containing the Audited Accounts and the Separate Audit Report, along with Annexure, as laid before the Parliament, may please be forwarded to this office, for necessary action at this end.

Yours faithfully,

Encls: As above

TANUSHREE BISWAS
Deputy Director

Copy to:-

- 1 Finance and Accounts Section, O/o the IIEST, Shibpur
- 2 OAD-HQ for kind information
- 3 OAD-AB for kind information



Separate Audit Report on the accounts of the Indian Institute of Engineering Science and Technology, Shibpur, Howrah, West Bengal for the year ended 31 March 2022

We have audited the attached Balance Sheet of the Indian Institute of Engineering Science and Technology, Shibpur, Howrah, as at 31 March 2022, the Income and Expenditure Account and Receipts and Payments Account for the year ended on that date, under Section 19(2) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971, read with Section 22(2) of the National Institute of Technology, Science Education and Research (Amendment) Act, 2014. These financial statements are the responsibility of the Institute's Management. Our responsibility is to express an opinion on these financial statements, based on our audit.

- 2. This separate Audit Report contains the comments of the Comptroller and Auditor General of India (CAG) on the accounting treatment only, with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms etc. Audit observations on financial transactions in regard to compliance with extent Laws, Rules & Regulations (i.e. Propriety and Regularity aspects) and efficiency-cum-performance aspects etc., if any, are reported through Inspection Reports/CAG's Audit Reports separately.
- 3. We have conducted our audit in accordance with the Auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the Management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

- 4. Based on our audit, we report that:
 - i. We have obtained all the information and explanations, which, to the best of our knowledge and belief, were necessary for the purpose of our audit;
 - The Balance Sheet and Income and Expenditure Account/Receipt and Payment Account, dealt with in this report, have been drawn up in terms of the format prescribed by the Ministry of Education, Government of India, vide order No. 29-4/2012-FD dated 17 April 2015.
 - iii. In our opinion, proper books of accounts and other relevant records have been maintained by the Indian Institute of Engineering Science and Technology, Shibpur, Howrah, as required under Section 22(2) of the National Institute of Technology, Science Education and Research (Amendment) Act, 2014, insofar as it appears from our examination of books.
 - iv. We further report that:

Comments on Accounts

- A Balance Sheet
- 1.1 Assets
- 1.1.1 Current Assets (Schedule 7): ₹158.01 crore

The Institute, in deviation from the instruction of the Ministry of Education, exhibited an amount of ₹25.10 crore, being excess expenditure over grants received, as 'MoE Grant Receivable', under 'Grants/Subsidies (Schedule 10), instead of adjusting the same from the internal receipts of the Institute. This resulted in overstatement of both the 'Current Assets' (Schedule 7) and the 'Corpus/Capital Fund' (Schedule 1), by ₹25.10 crore.

B Income and Expenditure Accounts

2.1 Expenditure

2.1.1 Repairing and Maintenance (Schedule 19): ₹3.85 crore

The Institute incurred an expenditure of ₹14.41 lakh towards major renovation of workshop of IIEST Shibpur and booked the expenditure as revenue expenditure under Repairing and Maintenance (Schedule 19). The expenditure of ₹14.41 lakh towards major renovation of workshop of IIEST Shibpur was required to be booked as capital expenditure and added to the gross book value of the concerned asset. This has resulted in overstatement of the Deficit (being the Excess of Expenditure over Income) by ₹14.41 lakh and corresponding understatement of Capital fund and Fixed assets by same amount.

2.2 Income

2.2.1 Academic Receipts (Schedule 9): ₹20.47 erore

Mess Section of the institute collected overhead charges of ₹73.41 lakh for the financial year 2021-22. However, the institute did not recognize the same as its own income, during the financial year. This has resulted in overstatement of the Deficit (being the Excess of Expenditure over Income), amounting to ₹73.41 lakh.

C General Comments

- 3.1 The Institute had wrongly booked excess grants-in-aid by ₹3.55 lakh under the head 'Grants/Subsidies' (Schedule 10) over actual receipts of grants-in-aid during the financial year 2021-22.
- 3.2 The Institute had booked in Schedule 2 (Designated/Earmarked/Endowment Funds), ₹15.94 lakh as 'Income from Investment' and ₹348.87 lakh as 'Accrued Interest', whereas in Schedule 11 (Income from Investments), the same were booked as ₹15.56 lakh and ₹345.96 lakh, respectively. This needs to be reconciled.

- Despite mention in earlier audit reports, Retirement Benefits in respect of eligible employees were not provided as per the Actuarial method of valuation, in terms of AS-15 and the Format of Accounts prescribed by the MoE.
- The Institute had booked an amount of \$1.53 crore as 'Term Deposit' under the head 'Current Assets' (Schedule 7), which was not accounted for in Receipts and Payments Accounts as Closing Balances, in contravention to the guidance issued by the MoE for compilation of Financial Statement of Central Education Institutions.
- 3.5 The institute did not declare the following information in 'Contingent Liabilities & Notes on Accounts' (Schedule 24) as per the MoE guidelines:
- (i) claim against the Entity not acknowledged as debts
- (ii) guarantees and Letters of credit outstanding
- (iii) other items for which the entity is contingently liable such as suits filed, Arbitration cases pending
- (iv) commitments on capital Account not provided for
- (v) educational Institution's capacity and capability and also the related party disclosure (AS 18)

D Grants-in-Aid

The Indian Institute of Engineering Science and Technology is mainly financed by grants-in-aid from the Government of India (GoI). The Institute had an opening balance of Grants of ₹10.01 crore as per previous year SAR. During the financial year 2021-22, Grants-in-aids received (through PFMS) by the Institute was ₹142.18 crore (GIA-General: ₹34.60 crore, GIA-Capital: 2.94 crore and GIA-Salaries: ₹104.64 crore). Out of the total grants of ₹152.19 crore, so available, the Institute spent ₹142.18 crore (Revenue Expenditure: ₹139.24 crore and Capital Expenditure: ₹2.94 crore), leaving an overall unspent balance of ₹10.01 crore.

 \mathbf{E} Net Impact

The net impact of the comments given in the preceeding paragraphs is that both the Assets and

Liabilities were overstated by ₹25.10 erore, while the Deficit (being the Excess of Expenditure

over Income) was overstated by <a>20.88 crore.

Subject to our observations in the preceding paragraphs, we report that the Balance

Sheet, Income and Expenditure Account and Receipts and Payments Account, dealt with by this

report, are in agreement with the books of accounts.

In our opinion, and to the best of our information, and according to the explanations vi.

given to us, the said financial statements, read together with the Accounting Policies and Notes

on Accounts, and subject to the significant matters stated above and other matters mentioned in

Annexure to this Audit Report, give a true and fair view, in conformity with accounting

principles generally accepted in India:

insofar as it relates to the Balance Sheet, of the state of affairs of the Indian a.

Institute of Engineering Science and Technology, Shibpur, Howrah, as at

3 L March 2022 and

insofar as it relates to the Income and Expenditure Account of the deficit, b.

for the year ended on that date.

For and on behalf of the C&AG of India

Place: Kolkata

Date: 17.10.1011

(Debolina Thakur) Director General of Audit

(Central), Kolkata

Annexure

A. Adequacy of the Internal Audit System

The Internal Audit System of the Institute is inadequate, on account of the following:

 The Institute does not have any approved Internal Audit Manual, despite the existence of an Internal Audit Wing.

B. Adequacy of the Internal Control System

The Internal Control System of the Institute is inadequate, on account of the following:

- i. The Institute does not have any plan for rotation of duties of employees dealing with Cash, Stocks and other valuables.
- ii. Insurance covers relating to cash in transit and cash in hand is not adequate.
- iii. Institute does not maintain any system for issuing of permanent receipt in lieu of temporary/provisional receipts issued.
- iv. Institute does not maintain separate register for cancelled Cheque.
- v. Cheque Protectors are not being used.
- vi. Identity Cards of the employees are not being periodically renewed. They are also not being received back at the time the employees cease to be in service, or prior to final payments being made to them.
- vii. The Institute does not have any Centralized Purchase Department. It is also not ensuring that purchases are made only from approved suppliers.
- viii. None of the purchase departments in the Institute is compiling a list of pending purchase orders, at least once every quarter.
 - ix. Receipts of material are not being evidenced by pre-numbered Goods Received Notes.
 - x. There is no system of limited access in the assigned areas, for stocks stored.
 - xi. Stocks are not insured against the risk as Fire, Strike, riot and civil commotion, Flood etc.
- xii. Confirmation of the balances under 'Loans & Advances' is not being obtained periodically.

C System of Physical Verification of Fixed Assets

The Institute has conducted the Physical Verification of its Fixed Assets during the financial year 2021-22.

D System of Physical Verification of Inventories

The Institute has conducted the Physical Verification of its Inventories during the financial year 2021-22.

E Regularity in payment of Statutory Dues:

The Institute was regular in payment of its Statutory Dues.

Statement showing reply to Headquarters' marginal observations on the Draft SAR on the accounts of Indian Institute of Engineering Science and Technology, Howrah, for the financial year 2021-22

SI. No.	Para No.	HQ's Remarks/Observations	Reply to the observations
1.	2.2.1	This para has been has been mistakenly taken in SAR, because as seen in Aide Memoire Sl. No. 2.2.1, field office has already proposed to dropped this para considering management reply.	proposed for drop from the final Report in the Aide Memoire from
2.	E Net Impact	Para may be revised, if required, based on HQ observations as above.	Since all the main paras are retained, the Net Impact para is also remains unchanged.

Deputy Director (Inspection)





भारतीय अभियांत्रिकी विज्ञान एवं प्रौद्योगिकी संस्थान, शिवपुर

Indian Institute of Engineering Science and Technology, Shibpur