Nillohit Mukherjee, Ph.D Assistant Professor (PL – 11) School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS) Indian Institute of Engineering Science and Technology, Shibpur (IIEST) P:O: Botanic Garden, Howrah 711 103 West Bengal, India



Residence:

St. Xavier's Road, Shatabdi Baag 1st Lane P.O.: Sripally, Dist.: Burdwan, Pin: 713 103, West Bengal, India Email: <u>nillohit.mukherjee@gmail.com</u>, nillohit@cegess.iiests.ac.in Tel: +91-9432926929 Personal details: Date of Birth: December 26, 1977, Nationality: Indian

Brief Timeline:

April 02, 2012 - TILL DATE: Assistant Professor at SAMGESS, IIESTS (11 Years)

September 01, 2011 - March 31, 2012 Research Associate at CEGESS, BESUS

April 01, 2011 – August 31, 2011: CSIR Research Associate at the Department of Chemistry, Bengal Engineering and Science University

April 01, 2010 – March 31, 2011: CSIR Research Associate at the Department of Chemistry, Bengal Engineering and Science University

22nd April 2009: Ph.D. from Bengal Engineering and Science University, Shibpur, West Bengal, India. Topic "Deposition of Zinc Oxide and Lead Chalcogenide Thin Films by Galvanic Technique and Their Characterizations"

July 2003: M.Sc. in Applied Chemistry from Department of Chemistry, Bengal Engineering and Science University (Marks: 66.35 %)

July 2000: B.Sc. in Chemistry (Honours) from Burdwan Raj College, The university of Burdwan (Marks: 58.9)

1996: 10+2 from West Bengal Council of Higher Secondary Education (Marks: 60.30) 1994: 10th from West Bengal Board of Secondary Education (Marks: 81.66) (National Scholarship)

Ph.D Thesis / M.Tech Project Supervision: No. of Ph.D. Thesis Guided:

	Name of the Candidate	Registration No. and Title of the Ph.D Thesis	Status
1	Sugato Ghosh	Regn. No. (PhD/R/2014/0024, Dated 08.04.2014 Fabrication of Metal Oxide Semiconductor Based Sensors and MEMS for Selective Detection of Hazardous Gases at Low Operating Temperature	Degree Awarded on 27.11.2017
2	Sudarshana Banerjee	Regn. No. (PhD/R/2014/0076, Dated 18.09.2014 Encapsulated Silver and Silver Sulphide Nanostructures for Photovoltaic and Environmental Applications	Degree Awarded on 05.12.2017
3	Arijit Bardhan Roy	Regn. No. (PhD/R/2015/0061, Dated 08.05.2015 Light Management Schemes in Thin and Flexible c-Si Solar Cells: Theoritical and Experimental Realization	Degree Awarded on 03.12.2018
4	Epsita Kar	Regn. No. PhD/R/2015/0063, Dated 05.05.2015 Dielectric and Electrical Properties of Gr-IV oxides embedded PVDF Composites	Degree Awarded on 12.07.2019
5	Arnab Dhara	Regn. No. PhD/R/2015/0123, Dated 08.12.2015 High Energy Synthesis of Hybrid Metal Oxide Systems for Better Light Harvesting and Their Applications	Degree Awarded on 09.12.2019
6	Bhabatosh Biswas	Regn. No. PhD/R/2017/0019, Dated 22.03.2017 Natural fibre and inorganic particulate reinforced unsaturated polyester composites for improved mechanical, thermal and degradation behaviour	Degree Awarded on 23.08.2021
7	Apurba Baral	Regn. No. PhD/R/2017/0092, Dated 22.03.2017 Development of Some Semiconductors for Advanced Energy Storage Devices and piezoelectric Energy Generation	Thesis Submitted on 21.03.2023
8	Rimpa Mondal	Regn. No. PHY201601, Dated: 16.06.2021 Metal oxide Semiconductors for Electrochemical Detection of Organomolecules''	Ongoing
9	Madhuparna Sarkar	Regn. No. 2022MGPR001, Dated: 14.07.2022 Carbon Based Metal Oxide Semiconductor Composites for Advanced Energy Storage Devices	Ongoing
10	Subhankar Mondal	Regn. No. 2023MGPR002, Dated: 13.06.2023 Synthesis of Materials from Natural Resources for Energy Generation and Storage	Ongoing

No. of P.G. (M.Tech) Projects Guided:

Sl.	Name of the	Title of the M. Tech Thesis	Supervisio	Status
No	Student		n	
1	Arnab Dhara	Synthesis of Mixed Metal Oxide Semiconductors: An Approach towards Efficient Gas Sensors and Photocatalysts	Joint	Completed 2013-14
2	Apurba Baral	Si Incorporated ZnO/CuO Heterogeneous System for Photocatalytic Degradation of Organic Dyes	Joint	Completed 2014-15
3	Suman Kumar Datta	Si Nanostructure Sensitized ZnO based all Solid-state Thin Film Solar Cell	Joint	Completed 2014-15
4	Ishita Chaturvedi	Fabrication of ZnO-Si based Solar Cells	Joint	Completed 2015-16
5	Soumyadipta Ray	Amorphous Silicon Solar Cells: A Comparison Between Performance and Layer-wise Tribological Properties	Joint	Completed 2015-16
6	Sudipto Datta	Evaluation of Tribological Properties of Iron Sulphide Thin Film: A Potential Candidate for Photoelectrochemical Energy Convesion	Joint	Completed 2015-16
7	Manish Agarwal	Chalcopyrite (ZnS, PbS) Thin Films: Facile Synthesis and Application in Solar Cell	Joint	Completed 2015-16
8	Pushpendu Dhara	Correlation Between Performance and Physical Parameters of rGO/ZnO Core-Shell Structure Based Supercapacitors	Sole	Completed 2017-18
9	Sayan Banerjee	Nickel sulphide/reduced graphene oxide (rGO) based supercapacitors for energy storage	Sole	Completed 2018-19
10	Ankit Kumar	Sb ₂ S ₃ /PVDF Composite Based Piezoelectric Energy Harvester	Sole	Completed 2018-19

CV of Dr. Nillohit Mukherjee with Research Statement and Teaching Statement

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11	Arghya Sarkar	Graphene Nanosheet Decorated Metal Oxide Semiconductors: Prospective Candidates For Supercapacitor Applications	Sole	Completed 2019-2020
12	Abhishek Kumar	Synthesis and Characterization of ZrO ₂ / α-Fe ₂ O ₃ Nanocomposite for Photocatalytic Applications	Joint	Completed 2019-2020
13	Atul Baburao Tale	Design and Thermal Analysis of Radiant Under-Floor Space Heating System Using Solar Thermal Technology	Joint	Completed 2019-2020
14	Sounish Maiti	Natural Fibre Based Particulate Composites	Joint	Completed 2020-2021
15	Chandramouli Banerjee	Light Trapping Schemes in Thin Silicon Solar Cells for Better Optoelectronic Properties	Joint	Completed 2020-2021
16	Ayan Dastidar	Waterless self-cleaning of solar panels with focus on fabrication aspects	Joint	Completed 2020-2021
17	Subhankar Mondal	Semiconductor for electrochemical energy storage	Sole	Completed 2021-2022
18	Pritam Dey	Supercapacitor with Solid or Polymer Electrolyte	Sole	Completed 2021-2022
19	Ankit Kumar	Hybrid Supercapacitors based on Carbon Composite Materials	Sole	Completed 2021-2022
20	Ankit Kumar Barick	Optimization of Opto-electronic Properties of Silicon HeteroJunction (SHJ) Solar Cell	Sole	Completed 2022-2023
21	Saurav Ghosal	Cu(I)O/rGO Composite as an Efficient Material for Supercapacitive Energy Storage and Clean Energy Generation	Sole	Completed 2022-2023
22	Shantanu Suman	ZnO/PVDF Composite Based Pizoelectric Energy Harvesters as Clean Energy Source	Sole	Completed 2022-2023

Funded R&D Projects:

Total ~ 3.82 Crore INR

SI. No	Name of the Project	P.I/ Co- P.I	Agency	Duration	Budget	Status
1	Flexible super capacitors based on carbon nano materials for energy storage (As P.I) (No. DST/TMD/SERI/S134/C-G)	P.I	DST- SERI	03 Years 2017- 2020	40.56 Lakhs	Completed
2	Nanostructured Materials and Interfaces for Enzymeless Electrochemica Sensing of Serotonin and Dopamine (As P.I) (No. 22/STP/S&T/16G-49/2017)	P.I	WBDHEST B	03 Years 2018- 2021	11.67 Lakhs	Ongoing
3	Flexible Polymer Nanocomposite Films for Energy Generation and Microwave Shielding Applications (As P.I) (No. EMR/2017/004628)	P.I	DST- SERB	03 Years	49.99 Lakhs	Completed
4	Synthesis of mixed metal oxides by high energy ball milling for their application as photocatalyst for waste-water treatment	Co. P.I.	IEI Kolkata Chapter	01 Year (2014- 2015)	1.5 Lakhs	Completed
5	Lab scale precision I – V and C – V real time analyzer for design and development of a CuO/ZnO hetero- contact selective gas sensor	Co. P.I.	DST-IDP	02 Years (2011- 2013)	20.54 Lakhs	Completed
4	CdS/CdTe Thin Film Solar Cells Starting From Indigenously Available Cd and Te	Co. P.I.	DST (GoI)	03 Years (2011- 2014)	2.40 Crores	Completed

Facilities Established:

(i) Setting up teaching and research laboratories

- Materials Synthesis Lab
- Materials Characterization Lab
- Third Generation Solar Cell Fabrication Lab
- Super Capacitor: Materials Synthesis and Fabrication Lab
- Solar Cell Testing Lab
- ➢ Gas Sensor: Materials Fabrication and Testing Lab

(ii) Conducting laboratory courses

- Electrochemical and Chemical synthesis of technologically important materials like ZnO, TiO₂, CuO, CdS, CdTe etc. for their application in solar cells.
- Structure-property correlation of thin film semiconductors and nanomaterials
- Renewable Energy Sources: Materials Synthesis and Characterization
- > Third Generation Solar Cell Fabrication and Characterization

(iii) Using different types of instruments, systems, computers etc.

- X-ray diffractometer (Rigaku)
- Scanning Electron Microscope with EDX (Zeiss Sigma)
- Atomic Force Microscope (NT-MDT)
- ➢ UV − VIS spectrophotometer (JASCO V 730)
- Fluorescence Spectrometer (PERKIN ELMER LS 55)
- ➢ FTIR (JASCO 460 Plus)
- Precision LCR Meter (AGILENT 4284 A)
- Semiconductor Characterization Unit (KEITHLEY SCU 4200)
- Sputtering, Vacuum Evaporation and e-Beam units
- Potentiostat-Galvanostat

Administrative Experience:

Administrative Responsibilities handled in IIEST, Shibpur:

- 1. Superintendent of Boys' Hostel (A K Seal Hall)
- 2. Member, Hall Management and Administration Committee
- 3. Member, Anti Ragging Committee
- 4. Member, Departmental Purchase Committee
- 5. Member, Campus Safety and Security Committee
- 6. Member, Campus Development Committee
- 7. Member, Selection Committees for M.Tech and Ph.D programme of SAMGESS
- 8. In-Charge, Characterization Facility of SAMGESS
- 9. In-Charge, Ph.D Admission Cell of SAMGESS

Awards and Recognitions:

- National Scholar 1994
- CSIR SRF in 2008 and CSIR RA in 2010
- Biographed in Marquis Who's Who in 2011
- Life Member: Materials Research Society of India (MRSI)
- Member: American Chemical Society (ACS)
- Member: International Experts' Panel of National Science Centre, Poland
- Reviewer of more than 20 journals with international repute
- Have 12 years post Ph.D academic as well as administrative experience

Research Statistics as on November 2023:

	All	Since 2018
Citations	2514	1600
<u>h-index</u>	27	21
<u>i10-index</u>	52	37

Google Scholar link:

https://scholar.google.co.in/citations?user=AXkAOrYAAAAJ&hl=en

- Member: International Experts' Panel of National Science Centre, Poland
- Reviewer of more than 20 journals with international repute viz:

Journal of Solid State Chemistry (Elsevier) 2. Microporous and Mesoporous Materials (Elsevier) 3. Journal of Materials Science (Springer) 4. Materials Science and Engineering B (Elsevier) 5. Materials Letters (Elsevier) 6. Journal of Applied Physics (AIP)7. Chinese Journal of Chemistry (Wiley) 8. Polymer Composites (Wiley) 9. ACS-Applied Materials and Interfaces 10. Applied Physics Letters 11. Nanoscale 12. Journal of Catalysis

- Outstanding Reviewer Contribution Certificate by Journal of Catalysis, 2018
- > Outstanding Reviewer Contribution Certificate by Electrochimica Acta, 2018

List of Publications in SCI/SCOPUS Journals:

Sl	Authors/Title/Journal	Other Details	Impact Factor
1	Nillohit Mukherjee, P Bhattacharyya, M Banerjee, A Mondal, Robert TT Gettens, PK Ghosh and H Saha "Galvanic deposition of nanocrystalline ZnO thin films from a ZnO-Zn (OH) ₂ mixed phase precursor on p-Si substrate" Journal Name: <i>Nanotechnology</i>	Publisher: Institute of Physics, Britain, Volume: 17, Year: 2006, Page No: 2665-2668	3.551
2	A Mondal, Nillohit Mukherjee and SK Bhar "Galvanic deposition of hexagonal ZnO thin films on TCO glass substrate" Journal Name: <i>Materials Letters</i>	Publisher: Elsevier, Volume: 60, Year: 2006, Page No: 1748-1752	3.42
3	A Mondal and Nillohit Mukherjee "Cubic PbS thin films on TCO glass substrate by galvanic technique" Journal Name: Materials Letters	Publisher: Elsevier, Volume: 60, Year: 2006, 2672-2674	3.42
4	A Mondal, Nillohit Mukherjee , S Kumar Bhar and D Banerjee "An electrochemical technique to deposit thin films of PbTe" Journal Name: <i>Thin Solid Films</i>	Publisher: Elsevier, Volume: 515, Year: 2006, Page No: 1255-1259	2.03
5	U Madhu, Nillohit Mukherjee, NR Bandyopadhyay and A Mondal "Properties of CdS and CdTe thin films deposited by an electrochemical technique" Journal Name: Indian Journal of Pure and Applied Physics	Publisher: National Institute of Science Communication and Information Resources, Volume: 45, Year: 2007, Page No: 226	0.653
6	P Bhattacharyya, PK Basu, Nillohit Mukherjee, A Mondal, H Saha and S Basu "Deposition of nanocrystalline ZnO thin films on p-Si by novel galvanic method and application of the heterojunction as methane sensor" Journal Name: Journal of Materials Science: Materials in Electronics	Publisher: Springer, Volume: 18, Year: 2007, Page No: 823-829	2.220
7	D Chandra, Nillohit Mukherjee , A Mondal and A Bhaumik "Design and synthesis of nanostructured porous SnO ₂ with high surface areas and their optical and dielectric properties" Journal Name: <i>The Journal of Physical Chemistry C</i>	Publisher: American Chemical Society, Volume: 112, Year: 2008, Page No: 8668-8674	4.189
8	Nillohit Mukherjee, S F Ahmed, D Mukherjee, K K Chattopadhyay and A Mondal "Deposition of nano-crystalline lead chalcogenide thin films using a simple electrochemical technique" Journal Name: <i>Physica Status Solidi</i> (<i>C</i>)	Publisher: Wiley, Volume: 5, Year: 2008, Page No: 3458-3462	0.81
9	Nillohit Mukherjee, A Mondal and U Madhu "Chemical bath deposition of thin films of CuO nanorods and their characterisation" Journal Name: Int. J. Nanomanufacturing	Publisher: Inderscience, Volume: 5, Year: 2009, 16-24	SCI

10	Nillohit Mukherjee, SF Ahmed, KK Chattopadhyay and A Mondal "Role of solute and solvent on the deposition of ZnO thin films" Journal Name: <i>Electrochimica Acta</i>	Publisher: Elsevier, Volume: 54, Year: 2009, Page No: 4015-4024	6.90
11	G.G Khan, Nillohit Mukherjee, A Mondal, N.R Bandyopadhyay, A Basumallick "Optical and field emission characteristics of anodic aluminium oxide/ZnO hybrid nanostructure" Journal Name: <i>Materials Chemistry and Physics</i>	Publisher: Elsevier, Volume: 122, Year: 2010, 60-63	3.408
12	Nillohit Mukherjee and A Mondal "Comparative study on the properties of galvanically deposited nano-and microcrystalline thin films of PbSe" Journal Name: Journal of Electronic Materials	Publisher: Springer, Volume: 39, Year: 2010, Page No: 1177-1185	1.774
13	Nillohit Mukherjee, GG Khan, A Sinha and A Mondal "Synthesis of band gap engineered PbXCd1-XSe thin films: A study on their optical, electrical, structural and localized mechanical properties" Journal Name: <i>Physica Status Solidi</i> (A)	Publisher: Wiley, Volume: 207, Year: 2010, Page No: 1880-1886	1.759
14	SK Maji, Nillohit Mukherjee*, A Mondal, B Adhikary and B Karmakar "Chemical synthesis of mesoporous CuO from a single precursor: Structural, optical and electrical properties" Journal Name: Journal of Solid State Chemistry	Publisher: Elsevier, Volume: 183, Year: 2010, Page No: 1900-1904	2.726
15	D Ghosh, PS Sardar, M Biswas, A Mondal and Nillohit Mukherjee "Dielectric characteristics of poly (N-vinylcarbazole) and its nanocomposites with ZnO and acetylene black" Journal Name: Materials Chemistry and Physics	Publisher: Elsevier, Volume: 123, Year: 2010, Page No: 9-12	3.408
16	SK Bhar, Nillohit Mukherjee, SK Maji, B Adhikary and A Mondal "Synthesis of nanocrystalline iron oxide ultrathin films by thermal decomposition of iron nitropruside: structural and optical properties" Journal Name: Materials Research Bulletin	Publisher: Elsevier, Volume: 45, Year: 2010, Page No: 1948-1953	4.019
17	Nillohit Mukherjee, A Sinha, GG Khan, D Chandra, A Bhaumik and A Mondal "A study on the structural and mechanical properties of nanocrystalline CuS thin films grown by chemical bath deposition technique" Journal Name: <i>Materials Research Bulletin</i>	Publisher: Elsevier, Volume: 46, Year: 2011, Page No: 6-11	4.019
18	Nillohit Mukherjee*, S F Ahmed, SK Maji and A Mondal "Experimental study on electron field emission, Raman scattering, and low temperature electrical properties of nanocrystalline lead selenide thin films" Journal Name: Journal of Applied Physics	Publisher: American Institute of Physics, Volume: 109, Year: 2011, Page No: 104312	2.286
19	S K Maji, Nillohit Mukherjee, A Mondal, B Adhikary, B Karmakar and S Dutta "Synthesis and characterization of nanocrystalline zinc sulfide via zinc thiobenzoate-lutidine single-source precursor" Journal Name: Inorganica Chimica Acta	Publisher: Elsevier, Volume: 371, Year: 2011, Page No: 20-26	2.304

20	SK Maji, Nillohit Mukherjee, A Mondal, B Adhikary and B Karmakar "Synthesis of nanocrystalline and mesoporous zinc sulphide from a single precursor Zn (SOCCH ₃) ₂ Lut-2 complex" Journal Name: Journal of Physics and Chemistry of Solids	Publisher: Elsevier, Volume: 72, Year: 2011, Page No: 784-788	3.442
21	S K Maji, Nillohit Mukherjee, AK Dutta, DN Srivastava, P Paul, B Karmakar, A Mondal and B Adhikary "Deposition of nanocrystalline CuS thin film from a single precursor: Structural, optical and electrical properties" Journal Name: Materials Chemistry and Physics	Publisher: Elsevier, Volume: 130, Year: 2011, 392-397	3.408
22	Nillohit Mukherjee*, B Show, SK Maji, U Madhu, SK Bhar, BC Mitra, GG Khan and A Mondal "CuO nano-whiskers: electrodeposition, Raman analysis, photoluminescence study and photocatalytic activity" Journal Name: <i>Materials Letters</i>	Publisher: Elsevier, Volume: 65, Year: 2011, Page No: 3248-3250	3.42
23	SK Maji, Nillohit Mukherjee , A Mondal and B Adhikary "Synthesis, characterization and photocatalytic activity of α-Fe ₂ O ₃ nanoparticles" Journal Name : <i>Polyhedron</i>	Publisher: Elsevier, Volume: 33, Year: 2012, Page No: 145-149	2.343
24	GG Khan, R Das, Nillohit Mukherjee and K Mandal "Effect of metal doping on highly efficient photovoltaics and switchable photovoltage in bismuth ferrite nanotubes" Journal Name: <i>Physica status solidi</i> (<i>RRL</i>)	Publisher: Wiley, Volume: 6, Year: 2012, Page No: 312-314	2.291
25	Nillohit Mukherjee*, S Jana, GG Khan and A Mondal,"Photo-induced exciton generation inpolyvinylpyrrolidone encapsulated Ag2S core-shells:Electrochemical deposition, regular shape and highorder of particle size distribution"Journal Name: Journal of Applied Physics	Publisher: American Institute of Physics, Volume: 112, Year: 2012, Page No: 124324	2.286
26	H Chakraborty, A Sinha, Nillohit Mukherjee*, D Ray and P Protim Chattopadhyay "A study on nanoindentation and tribological behaviour of multifunctional ZnO/PMMA nanocomposite" Journal Name: Materials Letters	Publisher: Elsevier, Volume: 93, 2 Year: 2013, Page No: 137-140	3.42
27	SK Bhar, S Jana, A Mondal and Nillohit Mukherjee* "Photocatalytic degradation of organic dye on porous iron sulfide film surface" Journal Name: Journal of Colloid and Interface Science	Publisher: Elsevier, Volume: 393, Year: 2013, Page No: 286-290	9.96
28	B Chakraborty, B Show, S Jana, BC Mitra, SK Maji, BAdhikary, Nillohit Mukherjee* and A Mondal "Cathodic and anodic deposition of FeS ₂ thin films and their application in electrochemical reduction and amperometric sensing of H ₂ O ₂ " Journal Name: <i>Electrochimica Acta</i>	Publisher: Elsevier, Volume: 94, Year: 2013, Page No: 7-15	6.90
29	S Jana, S Kumar Bhar, Nillohit Mukherjee and A Mondal "Electrodeposition of polymer encapsulated cobalt sulfide thin films: search for a frequency switching	Publisher: Elsevier, Volume: 109, Year: 2013, Page No: 51-54	3.42

	material"		
	Journal Name: Materials Letters		
30	H Chakraborty, A Sinha, Nillohit Mukherjee*, D Ray and PP Chattopadhyay "Indentation and scratch behavior of functionalized MWCNT-PMMA composites at the micro/nanoscale" Journal Name: <i>Polymer Composites</i>	Publisher: Wiley, Volume: 35, Year: 2014, Page No: 948-955	2.265
31	Nillohit Mukherjee*, H Chakraborty and SF Ahmed "A comparative study on the cold field electron emission properties of cubic nanocrystalline lead chalcogenide thin films" Journal Name: RSC Advances	Publisher: Royal Society of Chemistry, Britain, Volume: 4, Year: 2014, Page No: 5312-5315	4.03
32	B Mondal, B Basumatari, J Das, C Roychaudhury, H Saha and Nillohit Mukherjee "ZnO-SnO ₂ based composite type gas sensor for selective hydrogen sensing" Journal Name: Sensors and Actuators B: Chemical	Publisher: Elsevier, Volume: 194, Year: 2014, Page No: 389-396	9.22
33	B Mondal, L Dutta, C Roychaudhury, D Mohanta, Nillohit Mukherjee*, H Saha "Effect of Annealing Temperature on the Morphology and Sensitivity of the Zinc Oxide Nanorods-Based Methane Senor" Journal Name: Acta Metallurgica Sinica (English Letters)	Publisher: Springer, Volume 27, Year: 2014, Page No: 593-600	2.090
34	S Jana, Nillohit Mukherjee, B Chakraborty, BC Mitra and A Mondal "Electrodeposited polymer encapsulated nickel sulphide thin films: frequency switching material" Journal Name: <i>Applied Surface Science</i>	Publisher: Elsevier, Volume: 300, Year: 2014, page No. 154-158	7.39
35	A Ghosh, BB Show, S Ghosh, Nillohit Mukherjee , G Bhattacharya, SK Datta and A Mondal "Electrochemical synthesis of p-CuO thin films and development of a p-CuO/n-ZnO heterojunction and its application as a selective gas sensor" Journal: <i>RSC Advances</i>	Publisher: Royal Society of Chemistry, Britain, Volume: 4, Year: 2014, Page No: 51569-51575	4.03
36	B Show, Nillohit Mukherjee* and A Mondal "Electrochemically synthesized microcrystalline tin sulphide thin films: high dielectric stability with lower relaxation time and efficient photochemical and photoelectrochemical properties" Journal Name: RSC Advances	Publisher: Royal Society of Chemistry, Britain, Volume: 4, Year: 2014, Page No: 58740-58751	4.03
37	S Ghosh, C RoyChaudhuri, R Bhattacharya, H Saha and Nillohit Mukherjee* "Palladium–Silver-Activated ZnO Surface: Highly Selective Methane Sensor at Reasonably Low Operating Temperature" Journal Name: ACS Applied Materials & Interfaces	Publisher: American Chemical Society, Volume: 6, Year: 2014, Page No: 3879-3887	10.38
38	S Banerjee, AK Saha, B Show, J Ganguly, R Bhattacharyay, SK Datta, H Saha and Nillohit Mukherjee* "A regular rippled pattern formed by the molecular self- organization of polyvinylpyrrolidone encapsulated Ag	Publisher: Royal Society of Chemistry, Britain, Volume: 5, Year: 2015, Page No: 5667-5673	4.03

	nanoparticles: a high transmissive coating for efficiency enhancement of c-Si solar cells"		
39	E Kar, N Bose, S Das, Nillohit Mukherjee and S Mukherjee "Enhancement of electroactive β phase crystallization and dielectric constant of PVDF by incorporating GeO ₂ and SiO ₂ nanoparticles" Journal: <i>Physical Chemistry Chemical Physics</i>	Publisher: Royal Society of Chemistry, Britain, Volume: 17, Year: 2015, Page No: 22784-22798	3.430
40	S Ghosh, R Bhattacharya, H Saha, C RoyChaudhuri and Nillohit Mukherjee * "Functionalized ZnO/ZnO ₂ n-N straddling heterostructure achieved by oxygen plasma bombardment for highly selective methane sensing" Journal Name: <i>Physical Chemistry Chemical Physics</i>	Publisher: Royal Society of Chemistry, Britain, Volume: 17, Year: 2015, Page No: 27777-27788	3.430
41	B Mondal, J Das, C Roychaudhuri, Nillohit Mukherjee and H Saha "Enhanced sensing properties of ZnO-SnO ₂ based composite type gas sensor" Journal Name: <i>The European Physical Journal Applied</i> <i>Physics</i>	Publisher: EDP Science, Volume: 73, Year: 2015, Page No: 10301	0.63
42	S Chabri, A Dhara, B Show, D Adak, A Sinha and Nillohit Mukherjee * "Mesoporous CuO-ZnO p-n heterojunction based nanocomposites with high specific surface area for enhanced photocatalysis and electrochemical sensing" Journal Name: <i>Catalysis Science & Technology</i>	Publisher: Royal Society of Chemistry, Britain, Volume: 6, Year: 2016, Page No: 3238-3252	6.17
43	E Kar, N Bose, S Das, Nillohit Mukherjee and S Mukherjee "Temperature dependent dielectric properties of self- standing and flexible poly (vinylidene fluoride) films infused with Er ³⁺ doped GeO ₂ and SiO ₂ nanoparticles" Journal Name: <i>Journal of Applied Polymer Science</i>	Publisher: Wiley, Volume: 133, Year: 2016, Page No: 44016	2.52
44	S Banerjee, B Show, A Kundu, J Ganguly, U Gangopadhyay, H Saha and Nillohit Mukherjee* "N-acetyle cysteine assisted synthesis of core-shell Ag ₂ S with enhanced light transmission and diminished reflectance: Surface modifier for c-SiN _x solar cells" Journal Name: Journal of Industrial and Engineering Chemistry	Publisher: Elsevier, Volume: 40, Year: 2016, Page No: 54-61, 2016	6.76
45	A Dhara, B Show, A Baral, S Chabri, A Sinha, NR Bandyopadhyay and Nillohit Mukherjee* "Core-shell CuO-ZnO p-n heterojunction with high specific surface area for enhanced photoelectrochemical (PEC) energy conversion" Journal Name: <i>Solar Energy</i>	Publisher: Elsevier, Volume: 136, Year: 2016, Page No: 327-332	7.18
46	B Show, Nillohit Mukherjee [*] and A Mondal "α-Fe ₂ O ₃ nanospheres: facile synthesis and highly efficient photo-degradation of organic dyes and surface activation by nano-Pt for enhanced methanol sensing" Journal Name: <i>RSC Advances</i>	Publisher: Royal Society of Chemistry, Britain, Volume: 6, Year: 2016, Page No: 75347-75358	4.03

47	S Banerjee, S Mandal, AK Barua and Nillohit Mukherjee "Hierarchical indium tin oxide (ITO) nano-whiskers: Electron beam deposition and sub-bandgap defect levels mediated visible light driven enhanced photocatalytic activity" Journal Name: <i>Catalysis Communications</i>	Publisher: Elsevier, Volume: 87, Year: 2016, Page No: 86-89	3.612
48	A Dhara, A Baral, S Chabri, A Sinha and NR Bandyopadhyay and Nillohit Mukherjee* "An Efficient Approach Towards the Photodegradation of Indigo Carmine by Introducing ZnO/CuO/Si Ternary Nanocomposite as Photocatalyst" Journal Name: Journal of The Institution of Engineers (India): Series D	Publisher: Springer, Volume : 98, Year: 2016, Page No. 1-8	SCI
49	A Sinha and Nillohit Mukherjee* "Correlation between morphology and nanomechanical behavior of ZnO thin films" Journal Name: Journal of The Institution of Engineers (India): Series D	Publisher: Springer, Volume: 98, Year: 2017, Page No. 189-193	SCI
50	E Kar, N Bose, B Dutta, Nillohit Mukherjee * and S Mukherjee "Poly(vinylidene fluoride)/submicron graphite platelet composite: A smart, lightweight flexible material with significantly enhanced β polymorphism, dielectricand microwave shielding properties" Journal Name: <i>European Polymer Journal</i>	Publisher: Elsevier Volume: 90, Year: 2017, Page No: 442-455	3.862
51	AB Roy, S Das, A Kundu, C Banerjee and Nillohit Mukherjee* "c-Si/n-ZnO-based flexible solar cells with silica nanoparticles as a light trapping metamaterial" Journal Name: <i>Physical Chemistry Chemical Physics</i>	Publisher: Royal Society of Chemistry, Britain, Volume: 19, Year: 2017, Page No: 12838-12844	3.430
52	S Bose, D Dey, S Banerjee, G Ahmad, S Mandal, AK Barua and Nillohit Mukherjee* "Blue and violet defect levels mediated absorption hot spots in tapered ZnO nanorods toward improved photocatalytic" Journal Name: Journal of Materials Science	Publisher: Springer, Volume: 52, Year: 2017, Page No. 12818-12825	3.553
53	B Show, Nillohit Mukherjee* and A Mondal "Reusable iron sulfide nanospheres towards promoted photocatalytic and electrocatalytic activities" Journal Name: New Journal of Chemistry	Publisher: Royal Society of Chemistry, Britain, Volume: 41, Year: 2017, Page No. 10083-10094	3.288
54	D Adak, B Show, A Mondal and Nillohit Mukherjee* "ZnO/γ-Fe ₂ O ₃ charge transfer interface in zinc-iron oxide hollow cages towards efficient photodegradation of industrial dyes and methanol electrooxidation" Journal Name: Journal of Catalysis	Publisher: Elsevier, Volume: 355, Year: 2017, Page No. 63-72	8.04
55	S Ghosh, D Adak, R Bhattacharyya and Nillohit Mukherjee*, "ZnO/γ-Fe ₂ O ₃ charge transfer interface toward Highly Selective H ₂ S Sensing at a Low Operating Temperature of 30°C" Journal Name: ACS Sensors	Publisher: American Chemical Society, Volume: 2, Year: 2017, Page No. 1831–1838	9.61

56	Sk F Ahmed, Md S Alam, Nillohit Mukherjee "Cu incorporated amorphous diamond like carbon (DLC) composites: An efficient electron field emitter over a wide range of temperature" Journal Name: <i>Physica E: Low-dimensional Systems</i> <i>and Nanostructures</i>	Publisher: Elsevier, Volume: 97, Year: 2018, Page No. 120-125	3.57
57	Habib Ali Molla, Rahul Bhowmick, Abu Saleh Musha Islam, Bibhutibhushan Show, Nillohit Mukherjee, Anup Mondal and Mahammad Ali "Turn on Fluorogenic Chemosensor for Fe ³⁺ and Schottky Barrier Diode with Frequency Switching Device Applications" Journal Name: Photochemical & Photobiological Sciences	Publisher: Royal Society of Chemistry, Volume: 17, Year: 2018, Page No. 465-473	2.831
58	J. Basu, A. Baral, N. Samanta, Nillohit Mukherjee* and C. Roychaudhuri "Low Noise Field Effect Biosensor with Electrochemically Reduced Graphene Oxide" Journal Name: Journal of The Electrochemical Society	Publisher: Institute of Physics, Volume: 165, Year: 2018, Page No. B3201-B3207	4.31
59	E Kar, N Bose, B Dutta, Nillohit Mukherjee [*] and S Mukherjee "MWCNT@SiO ₂ Heterogeneous Nanofiller-Based Polymer Composites: A Single Key to the High- Performance Piezoelectric Nanogenerator and Xband Microwave Shield" Journal Name: ACS Applied Nano Materials	Publisher: American Chemical Society, Volume: 1(8), Year: 2018, Page No. 4005-4018	6.14
60	E Kar, N Bose, B Dutta, S Banerjee, Nillohit Mukherjee* and Sampad Mukherjee "2D SnO ₂ nanosheet/PVDF composite based flexible, self-cleaning piezoelectric energy harvester" Journal Name: Energy Conversion and Management	Publisher: Elsevier, Volume: 184, Year: 2019, Page No. 600-608	9.70
61	E Kar, N Bose, B Dutta, Nillohit Mukherjee* and S Mukherjee, "Ultraviolet- and microwave-protecting, self-cleaning e- skin for efficient energy harvesting and tactile mechanosensing" Journal Name: ACS Applied Materials & Interfaces	Publisher: American Chemical Society, Volume: 11, Year: 2019, Page No. 17501–17512	10.38
62	S Banerjee, S Mandal, S Dhar, AB Roy and Nillohit Mukherjee*, "Nanomirror-Embedded Back Reflector Layer (BRL) for Advanced Light Management in Thin Silicon Solar Cells" Journal Name: Industrial & Engineering Chemistry Research	Publisher: American Chemical Society, Volume: 58, Year: 2019, Page No. 12678–12686	4.32
63	AK Dikshit, NC Mandal, S Bose, Nillohit Mukherjee and P. Chakrabarti "Optimization of back ITO layer as the sandwiched reflector for exploiting longer wavelength lights in thin and flexible (30 μm) single junction c-Sisolar cells" Journal Name: <i>Solar Energy</i>	Publisher: Elsevier, Volume: 193, Year: 2019, Page No. 293–302	7.18
64	A Dhara, DK Chanda, A Nandi, Arijit Sinha, NR Bandyopadhyay and Nillohit Mukherjee* "Synergistic interaction in metal oxide/silicon bulk	Publisher: Elsevier, Volume: 8, Year: 2020, Page No. 103672	7.96

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66	A. K Dikshit, P Banerjee, Nillohit Mukherjee and P. Chakrabarti, "Theoretical optimization of double dielectric back reflector layer for thin c-Si based advanced solar cells with notable enhancement in MAPD" Journal Name: <i>Superlattices and Microstructures</i>	Publisher: Elsevier, Volume: 149, Year: 2021, Page No. 106747	2.12
67	A Baral, A Dhara, A Sinha and Nillohit Mukherjee* "Chemically synthesized Sb ₂ S ₃ hollow-spheres for significantly fast and reliable visible light driven dye photodegradation" Journal Name: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	Publisher: Elsevier, Volume: 250, Year: 2021, Page No. 119368	4.831
68	B. Biswas, B. Hazra, Nillohit Mukherjee and A. Sinha "Nanomechanical behaviour of ZrO ₂ dispersed sisal- based polymeric composites" Journal Name: <i>Proc IMechE, Part L: Journal of</i> <i>Materials: Design and Applications</i>	Publisher: Springer, Year: 2021, doi.org/10.1177/14644207211016015	2.311
69	B. Biswas, N. R. Bandyopadhyay, Nillohit Mukherjee and A. Sinha "Mechanical Behaviour of Jute/ZrO2 Based Polyester Composites at Microstructural Scale" Journal Name: <i>Fibers and Polymers</i>	Publisher: Springer, Volume: 06, Year: 2021, Page: 1731-1742	2.153
70	Bhabatosh Biswas, Nillohit Mukherjee and Arijit Sinha "Indentation behavior of cellulosic fibers/fly ash- incorporated polymer composites at sub-micron scale" Journal Name: Proc IMechE Part J: J Engineering Tribology	Publisher: SAGE, Volume: DOI: 10.1177/13506501211030049, Year: 2021, Page: 1 – 8	1.674
71	BhabatoshBiswas,BiplabHazra,SubhabrataChakraborty,Nillohit Mukherjeeand Arijit Sinha"Mechanical behavior of cellulosic fiber-incorporatedmodified fly ash-dispersed polymeric composites"JournalName:ProcIMechEPartE:JProcessMechanical Engineering	Publisher: SAGE, Volume: DOI: 10.1177/09544089211034025, Year: 2021, Page: 1 – 8	1.62
72	A. K. Dikshit, S. Maity, Nillohit Mukherjee and 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" Journal Name: <i>IEEE Journal of Photovoltaics</i>	Publisher: IEEE, Volume: 11, Year: 2021, Page: 983 -990	3.88

73	B. Show, Sk. F. Ahmed, A. Mondal and Nillohit Mukherjee *, "Hierarchical copper oxide as efficient enzymeless amperometric biosensor and promising photocatalyst" Journal Name: Journal of Environmental Chemical Engineering	Publisher: Elsevier, Volume: 09, Year: 2021, Page: 104748	7.96
74	E. Kar, M. Barman, S. Das, A. Das, P. Datta, S. Mukherjee, M. Tavakoli, Nillohit Mukherjee * and N. Bose "Chicken feather fiber-based bio-piezoelectric energy harvester: an efficient green energy source for flexible electronics" Journal Name: <i>Sustainable Energy & Fuels</i>	Publisher: The Royal Scciety of Chemistry , Volume: 05 , Year: 2021 , Page: 1857 – 1866	6.36
75	Apurba Baral, Anupam Nandi, Navonil Bose, Nillohit Mukherjee* "Crumpled graphene oxide/spinel cobalt oxide composite based high performance supercapacitive energy storage device" Journal Name: Journal of Energy Storage	Publisher: Elsevier, Volume: 42, Year: 2021, Page: 103021	9.40
76	T. Chakraborty, A. Das, B. Biswas, S. Sarkar, Nillohit Mukherjee*, A. Sinha, S. Datta "Hydroxyapatite dispersed sulphonated PEEK composite membrane: Synthesis, structural and mechanical characterization" Journal Name: Proc IMechE Part E: J Process Mechanical Engineering	Publisher: SAGE, Volume: 236, Year: 2022, Page: 1869 - 1876	1.82
77	A. K. Dikshit, G. Das, Nillohit Mukherjee , P. Chakrabarti, "SHJ Solar Cells on an Adequately Thin c-Si Wafer with Dome-Like Front and Double-Layer ITO Nanoparticles as Rear Light Trapping Arrangements" Journal Name: <i>IEEE Transactions on Electron Devices</i>	Publisher: IEEE, Volume: 69, Year: 2022, Page: 216	2.91
78	D. K. Ghosh, A. Nandi, S. Bose, G. Das, A. Kole, S. Mukhopadhyay, V. K. Singh, U. Sharma, S. Das and Nillohit Mukherjee* "Pseudostoichiometric and oxygen deficient MoOx for efficient sensing of H ₂ S and CO at relatively low operating temperature and analyte concentrations" Journal Name: <i>Surfaces and Interfaces</i>	Publisher: Elsevier, Volume: 33, Year: 2022, Page: 102261	6.13
79	Arijit Bardhan Roy, Arup Dhar, Mrinmoyee Chowdhury, Sonali Das, Nillohit Mukherjee*, Avra Kundu* "Cross-fertilized biomimetic structures achieved through nanosphere lithography on an ultrathin wafer for flexible black c-Si SHJ solar cells" Journal Name: Materials Today Chemistry	Publisher: Elsevier, Volume: 29, Year: 2023, Page: 101446	7.3
80	Apurba Baral and Nillohit Mukherjee* "Polyvinylidene Difluoride/Sb2S3 Composite Film as a Potential Candidate for Piezoelectric Energy Generation" Journal Name: Journal of The Institution of Engineers (India): Series D	Publisher: Springer, https://doi.org/10.1007/s40033- 023-00467	1.45
81	Apurba Baral, Navonil Bose, Bibhutibhushan Show, Nil Ratan Bandyopadhyay, Nillohit Mukherjee* "Nickel oxyhydroxide/zinc hydroxide/rGO as a	Publisher: Wiley, https://doi.org/10.1002/est2.502	3.5

CV of Dr. Nillohit Mukherjee with Research Statement and Teaching Statement

	promising candidate for hybrid energy storage and		
	clean energy generation"		
	Journal Name: Energy Storage		
82	Rimpa Mondal, Sk. F. Ahmed*, Nillohit Mukherjee* "Electrochemically Deposited Cu(II)/Cu(I) Oxide Heterostructure as Highly Sensitive Platform for Electrochemical Detection of Glucose and Methanol" Journal Name: Journal of The Institution of Engineers (India): Series D	Publisher: Springer, https://doi.org/10.1007/s40033- 023-00588-2	1.45
83	Rimpa Mondal, Bibhutibhushan Show, Sk. F. Ahmed*, Nillohit Mukherjee * "Electrochemically selective detection of dopamine over serotonin by CuO/Cu ₂ O bulk heterostructure electrode Bulletin of Materials Science" Journal Name: <i>Bulletin of Materials Science</i>	Publisher: Springer, Just Accepted	1.8
84	Apurba Baral, Navonil Bose, Bibhutibhushan Show, Nil Ratan Bandyopadhyay, Nillohit Mukherjee * "ZnO/f-MWCNT as a potential candidate for supercapacitive energy storage and piezoelectric energy generation" Journal Name: <i>Materials Today Chemistry</i>	Publisher: Elsevier, Volume: 31, Year: 2023, Page: 101627	7.3
85	Madhuparna Sarkar , Apurba Baral , Nillohit Mukherjee* "Synergistically active V5+/V4+ couple in nanoribbon like rGO/V ₂ O ₅ composite for enhanced supercapacitive energy storage attributes: Optimization of electrode composition and electrolyte" Journal Name: Journal of Energy Storage	Publisher: Elsevier, Volume: 84, Year: 2024, Page: 110662	9.4

List of Conference Publications (Peer Reviewed) International:

Sl	Details
1	Name of the conference: European Materials Research Society 2007 Fall Meeting Place: Warsaw University of Technology, Warsaw, Poland, Date: 17 – 21 September, 2007 Title of paper presented: Deposition of nanocrystalline lead chalcogenide thin films using a simple electrochemical technique Authors: N. Mukherjee*, Sk. F. Ahmed, D. Mukherjee, K. K Chattopadhyay, A. Mondal
2	Name of the conference: 2nd International Conference on Advanced Nano-materials (ANM) 2008 Place: University of Aveiro, Portugal, Date: 22 – 25 June, 2008 Title of paper presented: Chemical Bath Deposition of Thin Films of CuO nanorods and Their Characterization Authors: Nillohit Mukherjee*, Anup Mondal, Utpal Madhu
3	Name of the conference: 1st Nano Today International Conference Place: Biopolis, Singapore, Date: 02 – 05 August, 2009 Title of paper presented: A Novel Approach to the Deposition of Nano and Sub-micro structured Thin Film Semiconductors Authors: Nillohit Mukherjee*, Sanjib Kumar Bhar, Anup Mondal
4	Name of the conference: International Conference on Nanomaterials: Applications and Properties Place: Crimea, Ukraine, Date: 17 – 22 September, 2012 Title of paper presented: Shape and Size Controlled Deposition of ZnO Thin Film: Comparative Sensitivity towards Methane Gas Authors: Nillohit Mukherjee*, Sumanta Jana, Himel Chakrobaorty, Anup Mondal

5	Name of the conference: International Conference on Functional Materials Place: IIEST, Shibpur, Howrah, India, Date: 28 – 29 September, 2016 Title of paper presented: Study of Silver Sulfide Nanoparticle Decorated SiNW Array on Multi-c- Si Wafer Authors: Sudarshana Banerjee, Soma Ray, Utpal Gangopadhyay, Hiranmay Saha, Nillohit Mukherjee*
6	Name of the conference: International Conference on Functional Materials Place: IIEST, Shibpur, Howrah, India, Date: 28 – 29 September, 2016 Title of paper presented: Effect of Centrifugation Time on the Optical Properties of Colloidal Silicon Nanoparticle Authors: Susmita Biswas, Anupam Nandi, Arnab Dhara, Apurba Baral, Mallar Ray, Hiranmay Saha, Nillohit Mukherjee, Syed Minhaz Hossain
7	Name of the conference: 2 nd International Conference on Material Science Place: Mahatma Gandhi University, Kottayam, Kerala, India, Date: 16 – 18 FEBRUARY, 2017 Title of paper presented: Electron field emission property of nanostructure wrinkle thin film induced by amorphous diamond like carbon Authors: Md Shahbaz Alam, Nillohit Mukherjee and Sk. Faruque Ahmed
8	Name of the conference: 2nd International Conference on Condensed Matter and Applied Physics Place: Govt. Engineering College, Bikaner, Rajasthan Date: 24-25 Nov 2017 Title of paper presented: Effect of Centrifugation Time on the Optical Properties of Colloidal Silicon Nanoparticle Authors: Md Shahbaz Alam, Nillohit Mukherjee, Sk. Faruque Ahmed

Book Chapters:

1. A Ghosh, BB Show, Nillohit Mukherjee, SK Datta, G Bhattacharya and A Mondal, "Electrochemical synthesis of p-CuO thin films and development of a p-CuO/n-ZnO thin film hetero-contact for gas sensing", Book: *Physics of Semiconductor Devices*, Springer International, Year: 2013, Page No: 433-436, Print ISBN: 978-3-319-03001-2

2. Nillohit Mukherjee, Dipankar Mukherjee, Anup Mondal, "Influence of electrolyte on the deposition of ZnO thin films", **Book:** *Zinc Oxide: Materials and Devices,* Pentagon Press, **Year:** 2007, **Page No:** 21-25, Print ISBN: 81-8274-268-4

Teaching Statement

Level: UG

Unit – 1: Atomic Structure, Unit – 2: Chemical Periodicity Year: 1st (Part One) Number of times taught: Two Subject taught: CHT – 11b Unit – 1: Chemical Bonding and structure, Unit – 2: Acid Base Reactions Year: 1st (Part One) Number of times taught: Two

Level: PG

Subject taught: Renewable Energy Sources and Materials: (GS-5101), Semester: Odd Number of times taught: Three Subject taught: Solar Cells and Photovoltaic Technologies: (GS-5104), Semester: Odd Number of times taught: Three Subject taught: Fuel Cells, Hydrogen Energy and Energy Storage (GS-5202), Semester: Even Number of times taught: Three Subject taught: Advanced Solar Cell Concepts and Related Technology (GS-5204/1), Semester: Even Number of times taught: Three

Thrust Area of Research

- ✓ Materials for Advanced Energy Devices
- ✓ Piezoelectric Nanogenerators
- ✓ Advanced Energy Storage Devices like Supercapacitors
- ✓ Electrochemical Biosensors

Nonlyn

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