Name: **Dr. Debdulal Das**

Father's Name: Late Ambikesh Das

Date of Birth: **August 13, 1973**

Religion: Hinduism

Sex: Male

Marital status: Married

Designation: **Associate Professor**

Department of Metallurgy and Materials Engineering, Indian Institute of Engineering Science and Technology, Shibpur (*Formerly*, Bengal Engineering and Science University, Shibpur), B. Garden, Howrah-711103, West Bengal, India

Address for Communication

Office

Department of Metallurgy and Materials Engineering,
Indian Institute of Engineering Science and Technology, Shibpur
B. Garden, Howrah – 711103,
West Bengal,
India.
Phone: +91 (33) 2668 4561-63 Extn: 473
Fax: +91 (33) 2668 4564/2916

Mobile: +91 7980890165 / 9163547794
E-mail: debdulal_das@metal.iiests.ac.in
debdulal_das@yahoo.com

Residence

Flat: C4, 4th Floor,
Ananya Apartments
18, College Road
B. Garden, Howrah – 711103
West Bengal,
India.
Phone: +91 7980890165

Formal Education

Ph. D.	Bengal Engineering and Science University, Shibpur, 2011 Dissertation**:** *Structure-Property Correlation of Cryotreated AISI D2 Steel*
M. Tech. (Metallurgical E.)	Indian Institute of Technology, 1997 (CGPA 9.13/10) Dissertation**:** *Mathematical Modelling of Mechanical Alloying Kinetics*
B. E. (Metallurgical E.)	Bengal Engineering College, Calcutta University, 1995 (With Honors, Marks: 77.56%)

Debdulal Das, *Ph.D.*

Department of Metallurgy and Materials Engineering
Indian Institute of Engineering Science and Technology, Shibpur
(*Formerly*, Bengal Engineering and Science University, Shibpur)

Award and Recognition

- ✓ **Young Faculty Research Award 2012** by Bengal Engineering College Alumni Association, Washington Metropolitan Area, USA.

- ✓ **G.S. Tendulkar Award 2009** for the **overall Best Oral Presentation** in the Oral Sessions at the 63rd Annual Technical Meeting of the **Indian Institute of Metals** held at Science City, Kolkata during November 16-17, 2009.

- ✓ **Prize** *in the* **International Conferences**

  1. **Best Oral Presentation** to **D. Das** for article entitled "*Effect of Deep Cryogenic Treatment on Velocity Dependant Wear Transition of AISI D2 Steel*" in the *Thematic Sessions* on **Science & Technology of Materials** at the 66th Annual Technical Meeting of the Indian Institute of Metals held at Jamshedpur during November 18-19, 2012.
  2. **Best Oral Presentation** to **D. Das**: (***Symposium E***) in the 63rd Annual Technical Meeting of the **Indian Institute of Metals**, November 16-17, 2009, Science City, Kolkata, for the paper entitled *Effect of Sub-Zero Treatments on the Mechanical Properties of Die Steel*.
  3. **Best Paper award** for **Oral Presentation** under **Non-Ferrous category** for the Paper titled "*The role of microstructure on cyclic deformation behaviour of an Al-Mg-Si alloy*" authored by A.P. Sekhar, S. Nandy, K.K. Ray and **D. Das** in the 69th Annual Technical Meeting of the Indian Institute of Metals held at Coimbatore during 13-16th Nov, 2015.
  4. **Second Prize** for **Oral Presentation** under the category of **Material characterization** for the paper titled "*Microstructure and current-voltage characteristics of erbium oxide doped multicomponent zinc oxide varistors*" authored by S. Roy, T.K. Roy and **D. Das** in the 7th National conference on processing and characterization of materials (NCPCM), held at NIT Rourkela during 8-9th Dec, 2017.
  5. **Best Poster Presentation** award under **Non-Ferrous** category for the paper titled "*Cyclic deformation response of an artificially aged AA6063 alloy*" authored by A.P. Sekhar, S. Nandy, K.K. Ray and **D. Das** in the 72nd Annual Technical Meeting of the Indian Institute of Metals held at Kolkata during 15-16th November, 2018.

- ✓ **The Metallurgical and Materials Engineering Division Medal** by The Institution of Engineers (India) for the **best paper** published in the journal of the Institution for the year **2001**.

- ✓ Selected to participate in the **JSPS-DST Asia Academic Seminar 2009**, Yokohama, Japan and undertake training in advanced materials laboratories in Japan.

- ✓ **Outstanding Contribution** *in* **Reviewing** *of*

  1. Journal of Alloys and Compounds, *Elsevier, October 2018*

  2. Materials Characterizations*, Elsevier, October 2017*

  3. Transaction Indian Institute of Metals, *Springer, August 2021, October 2021, January 2022, March 2022*

- ✓ **Author** of The **Most Cited Articles** of the following **International Journals**:

  - ◈ **Materials Science and Engineering A**, ***Elsevier Publication***; The article entitled ***Sub-zero treatments of AISI D2 steel: Part I. Microstructure and hardness*** (Vol. 527, Issue 9, 2010, Pages 2182-2193) was in the list of the *Most Cited Articles* of the Journal published from 2010-15.
  - ◈ **Wear, *Elsevier Publication***; The article entitled ***Influence of varied cryotreatment on the wear behavior of AISI D2 steel*** (Vol. 266, Issues 1-2, 2009, Pages 297-309) was in the list of the *Most Cited Articles* of the Journal published from 2008 to 2014.

✓ **Reviewer** of **International Journals** ***(Partial list):***

[**Number articles reviewed** (***Verified record*** in **Web of Science**: **610**; Number of Journals: **76**]
Link: https://www.webofscience.com/wos/author/record/785325

1. **Scientific Reports,** *Nature Research Journal*
2. **Acta Materialia**, *Elsevier Publication*
3. **Materials Science and Engineering A,** *Elsevier Publication*
4. **Materials and Design,** *Elsevier Publication*
5. **Tribology Transitions**, *STLE and Taylor & Francis Publication*
6. **Journal of Material Processing Technology,** *Elsevier Publication*
7. **Journal of Materials Science,** *Springer Publication*
8. **Wear,** *Elsevier Publication*
9. **Journal of Alloys and Compounds,** *Elsevier Publication*
10. **Journal of Materials Science & Technology,** *Elsevier Publication*
11. **Philosophical Magazine,** *Taylor & Francis Publication*
12. **Journal of Materials Research,** *Materials Research Society, USA*
13. **Journal of Materials Engineering and Performance**, *Springer Publication*
14. **Metallurgical and Materials Transactions A**, *Springer Publication*
15. **Materials Characterization**, *Elsevier Publication*
16. **Journal of Composite Materials,** *SAGE Publication*
17. **Materials Letter,** *Elsevier Publication*
18. **Journal of Failure Analysis and Prevention,** *Springer Publication*
19. **Transition of Indian Institute of Metals,** *Springer Publication*
20. **Materials Science and Technology**, *Taylor & Francis Publication*
21. **Measurement,** *Elsevier Publication*
22. **Ceramic International,** *Elsevier Publication*
23. **Cryogenics,** *Elsevier Publication*
24. **Micron,** *Elsevier Publication*
25. **Intermetallics,** *Elsevier Publication*

Professional Experience

2000 (December) - *Present*: Twenty-two years at the **Post Graduate** as well as **Undergraduate levels** in the area of ***Metallurgy and Materials Engineering***

Teaching

Under Graduate

1. **Mechanical Testing of Materials (MM3214)**
2. **Physical Metallurgy of Ferrous Alloys (MM2103)**
3. Heat Treatment Technology *(Open Elective)*
4. Deformation Behavior of Materials
5. Phase Transformation
6. Materials Processing
7. Physical Metallurgy

Debdulal Das, *Ph.D.*
Department of Metallurgy and Materials Engineering
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(*Formerly*, Bengal Engineering and Science University, Shibpur)

Post Graduate

1. **Mechanical Behavior of Engineering Materials *(Open Elective)* [MM5161]**
2. **Fundametals of Materials [MM5101]**
3. **Mechanical Behavior of Materials [MM5202]**
4. Industrial Metal Working Technology
5. Advanced Ferrous Materials

Research 1997- *Present*: *Twenty Five years*

Research Index/Citation/Profile *(as on August 20, 2022)*

IIESTS website: https://www.iiests.ac.in/IIEST/Faculty/metal-debdulal_das

ORCiD ID: https://orcid.org/0000-0002-3106-7932

VIDWAN https://vidwan.inflibnet.ac.in/profile/95488

SCOPUS ***Author ID*:16202742900**

https://www2.scopus.com/authid/detail.uri?authorId=16202742900

Total articles: 77 **Total Citations: 2112** **h-index: 24**

Google Scholar https://scholar.google.co.in/citations?user=JGyd2XoAAAAJ&hl=en

Total Citations: 2784 **h-index: 24** **i10-index: 49**

Number of ***research*** **articles** *with* ***citations*** **>**200**: 03**
100-199: **07**
25-99: **13**

Research Gate: https://www.researchgate.net/profile/Debdulal-Das

Total citations: 2264 **Total Reads: 25,844** **h-index: 24**

Web of Science (*Clarivate*) **ResearchID: X-7836-2019**

https://www.webofscience.com/wos/author/record/785325

Total citations: 1810 **h-index: 23** **Verified Reviews: 610**

As Supervisor

M.E. Thesis: ***Completed: 46*** ***Ongoing: 02***

Ph.D.: ***Awarded*: 04** ***Submitted:* 01** ***Ongoing*: 06**

Details of PhD Dissertation Guided

1. **Mr. Aluru Praveen Sekhar:** ***Structure-Property Correlations of Artificially Aged AA6063 Al-Mg-Si alloy; Solo Supervisor, Degree awarded****: October 5, 2020.*
2. **Mr. Santanu Sardar:** ***Tribological Characterization of Stir-Cast AA7075/Al_2O_3 Composites under Two-Body Abrasion: Experiment and Modeling*****;** (as *Joint-supervisor*; *Supervisor*: Prof. S. K. Karmakar). ***Degree awarded****: July 19, 2019.*
3. **Mrs. Tanusree Dutta:** ***Microstructure Quantification and Strusture-Property Correlation of Dual-Phase Steels***; (*Joint supervisor*: Prof. S. Dutta). ***Degree awarded****: May 13, 2022.*
4. **Mrs. Samarpita Roy:** ***Processing-Microstructure-Property Relationships of Er_2O_3 Doped ZnO Based Varistors***; (*Joint supervisor*: Dr. T. K. Roy). ***Degree awarded****: August 10, 2022.*
5. **Mr. Titov Banerjee**: ***Design and Development of Aluminium Matrix Composites with Improved Performance***; (*Joint supervisor*: Prof. S. Dutta), Thesis s*ubmitted:* February 18, 2022.
6. **Mr. Md. Abu Bakkar:** ***Low Cycle Fatigue Performance of Automobile Grade Steels***; *Solo Supervisor***,** Thesis submission: September 2022.
7. **Mr. Saroj Kumar Basantia:** ***Cyclic Deformation Behavior of Steels: Experimentation and Simulation*****;** (as *Joint-supervisor*; *Supervisor*: Dr. N. Kutia) Tentative Thesis submission: December 2022.
8. **Mr. Gaurav Anand:** ***Wire Discharge Machining of Advanced Materials***; Registred: September 2020 (as *Joint-supervisor*; *Supervisor*: Dr. A. Guha).
9. **Mr. Bishal Kanrar:** ***Hot Deformation Behavior of 3rd Generation High Strength Steels***, *Solo Supervisor*, Registered: November 22, 2021.
10. **Mr. Sanoj Divakar:** ***Novel Ex-situ Aanoparticle and In-situ Microparticle Reinforced Aluminium Matrix Composites; Solo Supervisor*****,** Enrolled: August 3, 2022
11. **Mr. Satesh Sah:** ***Surface integrity Characteristics of Advanced Materials Machined by Electrical Discharge Machining; Solo Supervisor*****,** Enrolled: August 4, 2022

Professional Memberships

- ✓ ***Life Member*, Indian Institute of Metals (IIM)**
- ✓ ***Life Member*, Materials Research Society of India (MRSI)**
- ✓ ***Life Member*, The Institution of Engineers (India)**

Research Areas

Structure-Property Correlation: Establishing qualitative and/or quantitative correlations between microstructure and mechanical property properties of *(i)* AISI D2 tool steel subjected to various sub-zero treatments, *(ii)* high-martensitic dual-phase steels developed following different processing routes, *(iii)* AA6063 Al-alloy age-hardened at different combinations of time and temperature, (iv) rare-earth oxide (Er_2O_3) doped ZnO-based varistor synthesized by powder-metallurgy routes, and *(v)* in-situ (Al_3Fe) and ex-situ (Al_2O_3) particulate reinforced Al (7075, 2024) alloy matrix composites developed by liquid (*advanced stir-casting*) and solid (*friction stir processing*) state methods.

Tribology: Experimental evaluation of tribological performances (*wear rate/resistance, coefficient of friction and surface roughness*) and their modelling for important engineering materials (*such as die steel, structural steels, dual-phase steels, in-situ and ex-situ particulate reinforced Al-matrix composites*) under various wear situations (*akin to adhesive, two- and three-body abrasion, erosion*) and associated parameters *(e.g., characteristics of counter body, temperature, load, velocity and sliding distance)* with specific emphasize to identify modes (*mild/severe*) as well as micro-mechanisms *(e.g., oxidative, delamination, ploughing, plastic deformation)* of wear, and to establish *'wear mechanism maps*' so as to provide general guidelines for applications of generated materials apart from the development of new wear-resistance materials.

Fatigue: Experimental evaluation and analyses of high cycle fatigue, low cycle fatigue, and ratcheting behavior of various structural steels, reinforcing bars, and Al-alloy at widely different *(e.g., highly under-aged, peak-aged and highly over-aged)* states of artificial ageing. Besides, micromechanical modelling to simulate cyclic plastic behavior with specific emphasizes to understand the role of microstructure *(such as characteristics of second phase/phase mixture in the ferrite-pearlite/bainite/martensite structures)* on cyclic plasticity.

Composite Materials: Manufacturing and characterization of bulk discontinuous particulate reinforced light-metal matrix composites for structural applications. Manufacturing processes include (i) in-situ development of Fe-trialuminide (Al_3Fe) particulate reinforced Al-matrix composite by simple stirring of sacrificial type mild steel plate in the super-heated Al-melt followed by conventional casting; this low-cost novel process is referred to as *'reactive stir-casting'*, and (ii) ex-situ production of Al_2O_3 particle reinforced (a) Al7075 matrix composite by advanced stir casting as well as (b) Al2024 matrix composites by friction stir processing (FSP) methods. Characterization includes measurements of hardness *(macro-, micro- and nano-indentations)*, tensile, impact and tribological *(scratch, adhesive and abrasive wear)* properties apart from detailed microstructural analyses.

Hot Deformation: Controlled thermo-mechanical processing is the key to achieve desired microstructure and hence, mechanical properties specifically for high-strength low-alloy steels. An a-priori requirement in this direction is to construct *'processing map'* in order to identify the processing windows that in turn, assist in selecting appropriate thermo-mechanical parameters like temperature,

strain rate, and strain. Utilizing experimental true stress - true strain data of hot compression tests over a wide range of temperature and strain rate, the research in this domain at present is directed to identify suitable stability/instability criterion, construct and validate processing map, establish constitutive equations and study the dynamic recrystallization kinetics for *(a) nano-precipitation hardened* as well as *(b) medium-Mn steels*.

ZnO-based Varistor: Development of composite like microstructure consisting of semiconducting ultrafine ZnO grains separated by thin insulating intergranular layers in ZnO-based multi-oxides system to produce high-performance varistor with improved energy handing capacity by controlled consolidation of high-energy ball-milled powders through two-stage sintering, and appropriate addition of suitable rare earth oxide (like Er_2O_3) that should act as varistor enhancing dopant, on the one hand, and grain growth inhibitor, on the other hand.

Modelling and Simulation: Research in this domain deals with different aspects of metallurgy and materials engineering such as (i) mathematic modelling to simulate mechanical alloying kinetics, (ii) prediction of yield strength from classical dislocation-particle interactions for age-hardenable Al-alloys, (iii) flow behavior of duplex microstructures through Finite Element Simulations (FEM) based on Representative Volume Elements (RVE) method, (iv) modelling to predict the tribological responses of composite materials via statistical as well as soft computing approaches, and (v) FEM simulation of cyclic plasticity for structural steels.

Non-Traditional machining processes like Abrasive Water Jet Machining, Electrical Discharge Machining, and Wire Electrical Discharge Machining of difficult-to-machine materials *(such as metal- and polymer- matrix composites, martensitic steels, inconel and ceramics)* following design of experiments techniques *(like Taguchi, Response Surface Methodology, Factorial)* to identify influencing factors and to understand as well as to model their roles in material removal rate and characteristics of the machined surfaces *(e.g., surface roughness and dynamic surface modifications like deposition and residual stresses)* apart from multi-objective process optimization *(using Genetic Algorithm, Principal Component Analysis, Grey Relational Analysis, and desirability based approaches)*.

Sponsored Research Projects

1. *Project Name:* ***Pilot scale development of abrasion resistance (400 BHN hardness) and advanced high strength (1000 MPa) with superior ductility through HSM***
   Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
   Year of Sanction, Duration & Status: 2020, 2+1 years, On-going; *Amount:* Rs. 49,53,050.00
   Candidate: PI; CI: None
2. *Project Name:* **Microstructure Quantification and Structure-Property Correlation of Dual-Phase Steels**
   Sanctioning Authority: **TCS Foundation**
   Year of Sanction, Duration & Status: 2019-2022, Completed; *Amount:* Rs. 21,45,000.00
   Candidate: PI; CI: None

3. *Project Name:* **Fatigue study for seismic performance assessment of rebars**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2017, 4 years & Completed; *Amount:* Rs. 28,81,840.00
Candidate: PI; CI: None

4. *Project Name:* **Micromechanism of Fatigue Failure of a Few High Strength Grade Steels Produced Through TSCR Route**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2015, 3+1 years & Completed; *Amount:* Rs. 14,85,961.00
Candidate: PI; CI: None

5. *Project Name:* **Fatigue Property Evaluation and Microstructural Characterization of Hot Rolled Steels**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2015, 3 years & Completed; *Amount:* Rs. 14,85,000.00
Candidate: PI; CI: None

6. *Project Name:* **Wear performance evaluation of high strength microalloyed steels**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2015, 1 year & Completed
Candidate: PI; CI: None

7. *Project Name:* **Deformation and damage behavior of automobile grade steels under cyclic loading**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2013, 1 year & Completed
Candidate: PI; CI: None

8. *Project Name:* **Evaluation of fatigue behavior of low C medium Mn steels**
Sanctioning Authority: The Institute of Engineers (India)
Year of Sanction, Duration & Status: 2012, 1 year & Completed
Candidate: PI; CI: None

9. *Project Name:* **A comparative assessment of fatigue performance and damage mechanisms of directly air-cooled and TMT steel rebars**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2012, 2 years & Completed; *Amount:* Rs. 7,50,000.00
Candidate: PI; CI: None

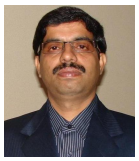
10. *Project Name:* **Evaluation of Performance of Non-TATA Steel Rebars in Concrete for Corrosion and Bond Strength Properties**
Sanctioning Authority: TATA Steel Pvt. Ltd., Jamshedpur
Year of Sanction, Duration & Status: 2006, 3 years & Completed; *Amount:* Rs. 8,00,000.00
Candidate: One of the two CIs (+ 1 PI)

11. *Project Name:* **Controlled Deep Cryogenic Treatment of High Speed Steels for Enhancement of Tool Life**
Sanctioning Authority: UGC (Major Project)
Year of Sanction, Duration & Status: 2006, 3 years, Completed; *Amount:* Rs. 5,82,000.00
Candidate: CI; Others involved: 1 (as PI)

12. Project Name*:* **Development of Nanocrystalline Al_2O_3 Dispersed Cu-Matrix Composites**
Sanctioning Authority: ISRO (*RESPOND Scheme*)
Year of Sanction, Duration & Status: 2004, 3 years & Completed; Amount: Rs. 8,25,000.00
Candidate: CI; Others involved: 1 (as PI)

13. Project Name*:* **Synthesis of Value Added Industrial Component by Sintering of Nanocrystalline Alloys Prepared by Mechanical Alloying**
Sanctioning Authority: The Institution of Engineers (India) [R & D Project]
Year of Sanction, Duration & Status: 2002, 1.5 years & Completed;
Candidate: PI; CI: None

Debdulal Das, *Ph.D.*
Department of Metallurgy and Materials Engineering
Indian Institute of Engineering Science and Technology, Shibpur
(*Formerly*, Bengal Engineering and Science University, Shibpur)



List of Publications

***Journal articles:* 76**

***Conference Proceedings:* 31**

***Book Chapters:* 04**

in Journals

76. Predicting macro- and microscopic responses of dual-phase steels under low cycle fatigue based on multi-scale finite element methods
Basantia, S.K., Bakkar, M.A., Bhattacharya, A., Khutia, N., **Das, D.**
Journal of Materials Engineering and Performance
Accepted (July 12, 2022).

75. Influence of microstructural parameters on nanohardness of various dual-phase steels: experiment, FE simulation and statistical analysis
Basantia, S.K., Bhattacharya, A., Khutia, N., **Das, D**.
Materials Today Communications, 30 (2022) 103125
DOI: https://doi.org/10.1016/j.mtcomm.2022.103125
https://www.sciencedirect.com/science/article/pii/S2352492822000034

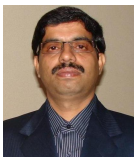
74. Two-Body Abrasive Wear Behavior and Its Correlation with Mechanical Properties of Aged AA6063 Alloy
Sekhar, A.P., **Das, D.**
ASME Journal of Tribology (Paper No: TRIB-21-1122), July 2022; 144(7): 071703.
DOI: https://doi.org/10.1115/1.4052828
https://asmedigitalcollection.asme.org/tribology/article/doi/10.1115/1.4052828/1122849/Two-Body-Abrasive-Wear-Behavior-and-Its

73. Low cycle fatigue response of differently aged AA6063 alloy: statistical analysis and microstructural evolution
Sekhar, A.P., Nandy, S., Bakkar, M.A., Ray, K.K., **Das, D**.
Materialia, 20 (2021) 101219
DOI: https://doi.org/10.1016/j.mtla.2021.101219
https://www.sciencedirect.com/science/article/pii/S2589152921002222

72. Plastic Behavior of Ferrite–Pearlite, Ferrite–Bainite and Ferrite–Martensite Steels: Experiments and Micromechanical Modelling
Basantia, S.K., Bhattacharya, A., Khutia, N., **Das, D.**
Metals and Materials International, 27 (2021) 1025-1043.
DOI: https://doi.org/10.1007/s12540-019-00519-5
https://link.springer.com/article/10.1007/s12540-019-00519-5

71. Two stage sintering behaviour of Er2O3 doped high performance ZnO varistors
Roy, S., **Das, D.,** Roy, T.K.
Journal of the European Ceramic Society, 41(10) (2021) 5184-5192.
DOI: https://doi.org/10.1016/j.jeurceramsoc.2021.04.009
https://www.sciencedirect.com/science/article/pii/S0955221921002491

70. Influence of ageing on the intergranular corrosion of AA6063 alloy
Sekhar, A.P., Mandal, A.B., Sammadar, A., **Das, D**.,



Metal and Materials International, 27(12) (2021) 5059-5073.
DOI: https://doi.org/10.1007/s12540-020-00843-1
https://link.springer.com/article/10.1007/s12540-020-00843-1

69. **Modelling of tribological responses of composites using integrated ANN-GA technique**
Sardar, S., Dey, S., **Das, D.**
Journal of Composite Materials, 55 (7) (2021) 873-896.
DOI: https://doi.org/10.1177/0021998320960520
https://journals.sagepub.com/doi/abs/10.1177/0021998320960520

68. **Low cycle fatigue performance and failure analysis of reinforcing bar**
Bakkar, M.A., Saha, R., **Das, D.**
Metals and Materials International, 27 (12) (2021) 4952-4966.
DOI: https://doi.org/10.1007/s12540-020-00839-x
https://link.springer.com/article/10.1007/s12540-020-00839-x

67. **Design of Alumina Reinforced Aluminium Alloy Composites with Improved Tribo-Mechanical Properties: A Machine Learning Approach**
Banerjee, T., Dey, S., Sekhar, A.P., Datta, S., **Das, D.**
Transactions of the Indian Institute of Metals, 73 (12) (2020) 3059-3069
DOI: https://doi.org/10.1007/s12666-020-02108-2
https://link.springer.com/article/10.1007/s12666-020-02108-2

66. **High-Strain Low-Cycle Fatigue Behavior of Thermomechanically Treated Rebar**
Bakkar, M.A., Kanrar, B., Saha, R., **Das, D.**
Journal of Failure Analysis and Prevention, 20(3) (2020) 1029-1037.
DOI: https://doi.org/10.1007/s11668-020-00911-z
https://link.springer.com/article/10.1007/s11668-020-00911-z

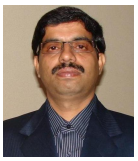
65. **WEDM process parameter optimization of Al-Al3Fe in-situ composites**
Anand, G., Sardar, S., Guha, A., **Das, D.**
Materials Today: Proceedings 33 (2020) 5250-5256
DOI: https://doi.org/10.1016/j.matpr.2020.02.951
https://www.sciencedirect.com/science/article/pii/S2214785320317417

64. **Mechanical properties and corrosion behavior of artificially aged Al-Mg-Si alloy**
Sekhar, A.P., Mandal, A.B., **Das, D.**
Journal of Materials Research & Technology, 9 (1) (2020) 1005-1024.
DOI: https://doi.org/10.1016/j.jmrt.2019.11.040
https://www.sciencedirect.com/science/article/pii/S2238785419311603

63. **Experimental Analysis on Tribo-Performance of Aluminum Composites**
Sardar, S., Pradhan, S.K., Karmakar, S.K., **Das, D.**
Journal of Composite Materials, 54 (14) (2020) 2577-2598.
DOI: https://doi.org/10.1177/0021998319900524
https://journals.sagepub.com/doi/abs/10.1177/0021998319900524

62. **Micro-scale simulation of nanoindentation characteristics in dual-phase steel**
Basantia, S.K., Prusty, P.K., **Das, D**., Khutia, N.
Materials Today: Proceedings 33 (2020) 5055-5060.
DOI: https://doi.org/10.1016/j.matpr.2020.02.843
https://www.sciencedirect.com/science/article/pii/S2214785320316333

61. **Multi Tribo-Performance Optimization of AA7075–Al_2O_3 Composites by Grey Based Response Surface Methodology**
Sardar, S., **Das, D.**



Metals and Materials International, 27 (2021) 1859-1879.
DOI: https://doi.org/10.1007/s12540-019-00573-z
https://link.springer.com/article/10.1007/s12540-019-00573-z

60. **Identification and Modelling of Applicable Wear Conditions for Stir Cast Al-Composite**
S. Sardar, S., Karmakar, S.K., **Das, D.**
Friction, 8 (2020) 847-873
DOI: https://doi.org/10.1007/s40544-019-0302-6
https://link.springer.com/article/10.1007/s40544-019-0302-6

59. **Influence of artificial aging on mechanical properties and high stress abrasive wear behaviour of Al-Mg-Si alloy**
Sekhar, A.P., **Das, D.**
Metals and Materials International, 27 (2021) 337-351.
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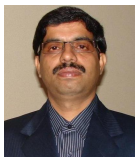

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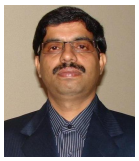

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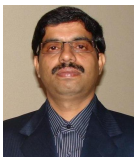

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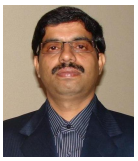

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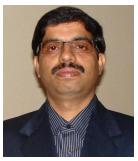

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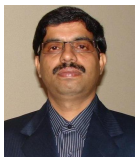

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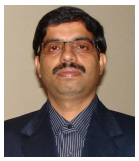

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