Dr. Shubhajit Das
Assistant Professor
Department of Mechanical Engineering
NIT Arunachal Pradesh

Education Qualification:

- PhD. NERIST, Arunachal Pradesh, India.
- M.Tech. (Design & Manufacturing), NIT Silchar, Assam, India.
- B.Tech. (Mechanical Engineering), Tezpur University, Assam, India.

Research Areas:

Composites, nano composites, hybrid composites, Conventional & Non-conventional machining, Optimization, soft computing, Tribology, Design, Computer Aided Design, waste management.

Professional Experience:

- Assistant Professor, Department of Mechanical Engineering, NIT Arunachal Pradesh, India. Period: August 2014- Present.
- Assistant Professor, Department of Mechanical Engineering, GIMT, Guwahati, Assam, India. Period: August 2012-August 2014.

Courses Taught:

Theory courses:
1. Strength of Materials [undergraduates of NIT Arunachal Pradesh]
2. Material Science [undergraduates of NIT Arunachal Pradesh]
3. Theory of Machines [undergraduates of NIT Arunachal Pradesh]
4. Engineering Materials and Processes [undergraduates of GIMT & NIT Arunachal Pradesh]
5. Machine Design I and II [undergraduates of NIT Arunachal Pradesh]
6. Manufacturing Technology [undergraduates of GIMT & NIT Arunachal Pradesh]
7. Automation and Computerized Manufacturing [undergraduates of GIMT & NIT Arunachal Pradesh]
8. Production Management and Workshop Technology [graduates of NIT Arunachal Pradesh], Appropriate Technology and Entrepreneurship practice.
9. Optimization Techniques [graduates of NIT Arunachal Pradesh]

Laboratory courses:
1. Machine drawing [undergraduates of NIT Arunachal Pradesh]
2. Strength of Material Laboratory [undergraduates of NIT Arunachal Pradesh]

3. Workshop Practice [undergraduates of GIMT & NIT Arunachal Pradesh]
4. Manufacturing Lab [undergraduates of NIT Arunachal Pradesh]
5. CNC/CIM Lab [undergraduates of NIT Arunachal Pradesh]

Outreach Activity:

Advanced Workshop Practice and CNC Training for 4th semester students of Mechanical Engineering Department, Dhemaji Polytechnic, Assam, 2019-2020.

Publications

Journals:

Sangeeta Das, Abhishek Madhesiya, **Shubhajit Das**, Satyam Shivam Gautam, Chandkiram Gautam, "Mechanical, surface morphology and multi-objective optimization of tribological properties of V_2O_5 doped lead calcium titanate borosilicate glass ceramics", Ceramics International, Vol. 46, Issue 11, Part B, 2020, 19170-19180, https://doi.org/10.1016/j.ceramint.2020.04.252

Sangeeta Das, **Shubhajit Das**, S. S. Gautam, C. R. Gautam, "Optimization of wear coefficient and coefficient of friction of borosilicate glass ceramics using Taguchi coupled grey fuzzy logic technique", Materials Today Proceedings, Vol. 27, Part 2, 2020, 1579-1589, https://doi.org/10.1016/j.matpr.2020.03.262

Tage Nampi, **Shubhajit Das**, "Optimization of tribological parameters of AA7075/SiC metal matrix composites", Materials Today Proceedings, Vol. 26 (2), 2020, 3311-3315, https://doi.org/10.1016/j.matpr.2020.02.470

Ashish Kumar Singh, Kakoli Roy, **Shubhajit Das**, Sangeeta Das, "WEDM investigation and fuzzy logic modelling of AA7075/SiC metal matrix composites", Materials Today Proceedings, Vol. 26 (2), 2020, 1988-1994, https://doi.org/10.1016/j.matpr.2020.02.434

Shubhajit Das, Sangeeta Das, Kakoli Roy, "Modelling and turning investigations of Al2024 based metal matrix composites", Materials Today Proceedings, Vol. 26 (2), 2020, 1868-1871, https://doi.org/10.1016/j.matpr.2020.02.409

Shubhajit Das, M. Chandrasekaran, S. Samanta, "Investigations on wire electric discharge machining of hybrid nano metal matrix composites (AA6061/SiC/B_4C) for industry need based multi-response optimization",

Engineering Research Express (IOP), 2019, 1, 025033. https://doi.org/10.1088/2631-8695/ab5344

Shubhajit Das, S. K. Tamang, M. Chandrasekaran, S. Samanta, , "Experimental investigation, modeling and optimization of tribological parameters of AA6061/SiC/B_4C hybrid nano composites", Key Engineering Materials, 2019, Volume 801, page 83-88. https://doi.org/10.4028/www.scientific.net/KEM.801.83

Shubhajit Das, M. Chandrasekaran, S. Samanta, "Experimental study and RSM modeling on machining characteristics of wire cut EDM of hybrid nano metal matrix composites", AIP Conference Proceedings, 2019, 2128, 040008. https://doi.org/10.1063/1.5117970

Shubhajit Das, M. Chandrasekaran, S. Samanta, K. Palanikumar, J. Paul Davim, "Fabrication and tribological study of AA6061 hybrid metal matrix composites reinforced with SiC/B_4C nanoparticles", Industrial Lubrication and Tribology, Emerald (UK), 2018, 71 (1), 83-93. https://www.emeraldinsight.com/doi/abs/10.1108/ILT-05-2018-0166

Shubhajit Das, M. Chandrasekaran, S. Samanta, "Comparison of Mechanical properties of AA6061 reinforced with (SiC/B_4C) micro/nano ceramic particle reinforcements", Materials Today: Proceedings (*Elsevier*), Volume 5, Issue 9, Part 3, 2018, page 18110-18119. https://www.sciencedirect.com/science/article/pii/S2214785318312562

Shubhajit Das, S. K. Lalmuan Vaiphei, M. Chandrasekaran, S. Samanta, "Wire cut EDM of Al6061 Hybrid Nano Composites: Experimental Investigations and RSM modeling of Surface Roughness", Materials Today Proceedings (*Elsevier*), Volume 5, Issue 2, Part 2, 2018,page8206-8215. https://www.sciencedirect.com/science/article/pii/S2214785317327803

H. P. Jadhav, P. K. Mohanty, **Shubhajit Das**, "Numerical simulation of multi-spark electric discharge machining analysis for Ti6Al4V alloy drilling", Materials Today: Proceedings (*Elsevier*), Volume 5, Issue 14, 2018, page 28337-28346. https://doi.org/10.1016/j.matpr.2018.10.118

S. K. Lalmuan, **Shubhajit Das**, M. Chandrasekaran, Santosh K. Tamang, "Machining Investigation on Hybrid Metal Matrix Composites- A Review", Materials Today: Proceedings (*Elsevier*), Volume 4, Issue 8, 2017, pages 8167-8175. https://www.sciencedirect.com/science/article/pii/S2214785317314554

Shubhajit Das, "Surface alloying of aluminium by W-Cu-Cr powder metallurgy tool electrode in EDM", International Journal of Latest Research in Engineering and Technology, Vol. 02, 2016, 1-10.

Conference:

Shubhajit Das, M. Chandrasekaran, S. Samanta, "Study on mechanical properties of AA6061/SiC/B_4C hybrid nano metal matrix composites", International Conference on Advances in Material Science and Mechanical Engineering (ICAMSME 2020), 7th to 9th February 2020, NBKRIST, Andhra Pradesh, India.

Kakoli Roy, **Shubhajit Das**, Tage Nampi, "A review on composite coatings: Techniques, materials, properties and applications in surface engineering", 10th International Conference on Industrial Tribology (IndiaTrib-2019), 1st to 4th December 2019, Indian Institute of Science, Banglore.

Tage Nampi, **Shubhajit Das**, Kakoli Roy, "Effect of tribological parameters on wear rate of AA7075/SiC Metal Matrix Composites using Fuzzy Logic: A case study", 10th International Conference on Industrial Tribology (IndiaTrib-2019), 1st to 4th December 2019, Indian Institute of Science, Banglore.

Shubhajit Das, M. Chanddrasekaran, S. Samanta, "Tribological investigation of Al6061/SiC/B_4C hybrid nano metal matrix composites and its predictive model using fuzzy logic", 4th International Conference on Industrial Engineering (ICIE), December 21-23, 2017, SVNIT, Surat, Gujarat, India.

Shubhajit Das, M. Chandrasekaran, S. Samanta, "Parametric Analysis and Optimization of WEDM of Al6061/ 7% SiC/ 3% B_4C Hybrid MMCs", 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR-2016), December 16-18, 2016, College of Engineering, Pune, Maharashtra, 1991-1995, ISBN: 978-93-86256-27-0.

M. Chandrasekaran, **Shubhajit Das**, D. Devarasiddappa, "Determining the effect of cutting parameters on surface roughness in end milling of Al-356/SiC_p MMC using fuzzy logic" International Conference on Precision, Meso, Micro and Nano Engineering (COPEN 9), December 10-12, 2015, IIT Bombay, Maharashtra, India.

S. Nath, P. K. Patowary, M. E. Krishna, **Shubhajit Das**, "Performance of powder metallurgy tools in EDM for surface modification", 4th International and 25th AIMTDR 2012, December 10-12, Jadavpur University, West Bengal, India.

M. E. Krishna, P. K. Patowari, **Shubhajit Das**, "Surface modification of aluminium using tungsten-copper powder metallurgical compact electrodes in EDM", 21st International Symposium on Processing and Fabrication of Advanced Materials (PFAM), December 11-12, 2012, IIT Guwahati, Assam, India.

Book Chapter:

Shubhajit Das, Sangeeta Das, Tage Nampi, Kakoli Roy, (2021), Functionally Grade Composite Material Production, Reference Module in Materials Science and Materials Engineering (Elsevier), https://doi.org/10.1016/B978-0-12-803581-8.11880-6

Sangeeta Das, **Shubhajit Das**, (2021), Composites for Sensors and Actuators, Reference Module in Materials Science and Materials Engineering (Elsevier), https://doi.org/10.1016/B978-0-12-803581-8.11906-X

Shubhajit Das, Sangeeta Das, Tage Nampi, Kakoli Roy, (2021), Functionally Grade Composite Material Production, Reference Module in Materials Science and Materials Engineering (Elsevier), https://doi.org/10.1016/B978-0-12-803581-8.11880-6

Shubhajit Das, Kakoli Roy, Tage Nampi, (2020), Manufacturing, Control and Automation, Prasanta Sahoo, Handbook of Research on Developments and Trends in Industrial and Materials Engineering, *IGI Global*, 123-144, ISSN: 2327-5448, EISSN: 2327-5456, ISBN13: 9781799818311, DOI: 10.4018/978-1-7998-1831-1.ch006 [https://www.igi-global.com/gateway/chapter/247013]

Shubhajit Das, Kakoli Roy, Tage Nampi, (2020), Total Quality Management and Quality Engineering, Prasanta Sahoo, Handbook of Research on Developments and Trends in Industrial and Materials Engineering, *IGI Global*, 451-468, ISSN: 2327-5448, EISSN: 2327-5456, ISBN13: 9781799818311, DOI: 10.4018/978-1-7998-1831-1.ch019 [https://www.igi-global.com/gateway/chapter/247026]

Sangeeta Das, **Shubhajit Das**, (2019) Applications of Tribology on Engine Performance. In: Katiyar J., Bhattacharya S., Patel V., Kumar V. (eds) Automotive Tribology: Energy, Environment and Sustainability. *Springer*, Singapore, Print ISBN 978-981-15-0433-4, Online ISBN 978-981-15-0434-1; DOI https://doi.org/10.1007/978-981-15-0434-1_16

Project Details:

Enhancement of Tribological properties of various cutting tools through micro-texturing during manufacturing, Funded by: CRS, ASTU [ASTU/TEQIP-III/Collaborative Research/2019/35/5], 2019-2020, Amount: Three Lakhs.

Mechanical and Tribological characterization of WC particulate reinforced AA5052 composite for marine application, Funded by: TEQIP III (SEED Grant), 2019-2020, Amount: Two Lakhs.

Workshops organized:

One week TEQIP III sponsored workshop on 'Mechatronics and Manufacturing Automation (MMA-2018)'; 29 Oct.-2 Nov. 2018 at NIT Arunachal Pradesh, India.

One week online Short Term Course on 'Aspects of Modern Optimization Techniques in Science and Engineering (AMOTSE 2020)'; during 17.08.2020 to 21.08.2020; sponsored by TEQIP III in joint collaboration with Government College of Technology, Coimbatore.

Conference Organized:

TEQIP III sponsored Online National Conference on 'Recent Trends in thermal Sciences and Alternate Energy Resources' under twinning activity between NIT Arunachal Pradesh and GCT Coimbatore; 1st July 2020.

FDP Organized:

One week online FDP on 'Scientific and Technological Evolution of Additive Manufacturing in the digital world'; 15-19 June 2020 at NIT Arunachal Pradesh under twinning activity with GCT, Coimbatore, TN.

Professional Membership:

Tribological Society of India (Life Time Member)

IAENG, India (Life Time Member)

Students supervised:

PhD

Mr. Justin Hijam; ongoing; July 2020 onwards; Jointly with Dr. P. K. Mohanty, Assistant Professor, Dept. of ME, NIT Arunachal Pradesh.

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Miss Anka Dutta; **Area of work**: Surface Coating & Tribology; **July 2017-June 2018**

Mr. Devanand Choudhary; **Area of work**: Matal Matrix Composites; **July 2017-June 2018**

Mr. Kausar Ahmed; **Area of work**: Conventional Machining; **July 2017-June 2018**

Mr. Ashish Kumar Singh; **Area of work**: Non-Conventional Machining; **July 2018-June 2019**

Miss Pronamika Borthakur; **Area of work**: Conventional Machining; **July 2018-June 2019**

Mr. Saurabh Kafaltiya; **Area of work**: Modelling & Optimization; **July 2018-June 2019**

Miss Kakoli Roy; **Area of work**: MMC Fabrication & Tribology; **July 2019-June 2020**

Miss Tage Nampi; **Area of work**: Tribology; **July 2019-June 2020**

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