

Curriculum Vitae



Dr. Nilrudra Mandal

Sr. Pr. Scientist & Head

Coatings & Surface Engineering Group
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Academic Qualification:

- **BME**, Mechanical Engineering, Jadavpur University, Kolkata, 2003
- **PhD**, Production Engineering, Jadavpur University, Kolkata, 2014

Work experience:

S.No	Positions held	Name of the Institute	From	To	Pay Scale
01.	Scientist F		02.09.2021	Till date	Grade Pay: Rs. 8900 (Level 13A)
02.	Scientist EII		02.09.2016	01.09.2021	Grade Pay: Rs. 8700 (Level 13)
03.	Scientist EI	CSIR-Central Mechanical Engineering Research Institute, Durgapur-713209, West Bengal	02.09.2012	01.09.2016	Grade Pay: Rs. 7600 (Level 12)
04.	Scientist C		02.09.2008	02.09.2012	Grade Pay: Rs. 6600
05.	Scientist B		02.09.2004	02.09.2008	Grade Pay: Rs. 5400
06.	Management Trainee	Shalimar Wires Industries Limited, Uttarpara, Hooghly, W.B	02.09.2003	02.09.2003	Stipend: Rs. 6500

Professional Recognition:

S.No	Name of Award	Awarding Agency	Year
01.	Production Engineering Division Prize	Institution of Engineers	2017
02.	Malaviya Award	Indian Ceramic Society	2021

Peer Reviewed Journal Publications:

1. D Mukherjee, H Roy, B Chandrakanth, **N Mandal**, S K Samanta, M Mukherjee, Enhancing properties of Al-Zn-Mg-Cu alloy through microalloying and heat treatment, *Materials Chemistry and Physics* 314, 128881, 2024
2. CO Bapanapalle, A Shrivastava, P Biswas, PK Prajapati, V Prakash, **N Mandal** Effect of TiO₂ reinforcement on low temperature (1300° C) sinterability of zirconia toughened alumina ceramics by correlating its structural and physico-mechanical properties, *Materials Today Communication* 37, 107060, 2023
3. PK Prajapati, P Biswas, BK Singh, CO Bapanapalle, R Ghosh, **N Mandal** Reinforcing potential of MWCNTs on mechanical and machining performance of hot-pressed ZTA-MgO ceramic cutting inserts, *Diamond and Related Materials* 138, 110202, 2023
4. S Mazumder, K Ghosh, BK Singh, SS Chakroborty, **N Mandal** Experimental and Finite Element Analyses for High-Speed Machining of AISI 4340 with ZTA Insert, *Journal of The Institution of Engineers (India): Series C* 104, 261–270, 2023
5. P Biswas, PK Prajapati, CO Bapanapalle, KK Sadhu, R Ghosh, **N Mandal** Effect of MWCNTs on micromechanical and high-temperature tribological behavior of ZTA-MgO ceramic composites, *Materials Today Communications* 35, 105869, 2023
6. A Datta, A Shrivastava, **N Mandal**, H Roy, SS Chakroborty A comparative investigation of butt friction stir welding of aluminium alloys, AA 1100 and AA 7075, with AISI 304 stainless steel *Welding in the World* 67 (6), 1449-1465, 2023
7. S Goswami, K Ghosh, R Ghosh, **N Mandal** Little amounts of carbon nanotubes as anti - wear reinforcement for alumina in dry sliding, *International Journal of Applied Ceramic Technology* 20 (2), 1278-1297, 2023
8. D Mukherjee, M Mukherjee, **N Mandal**, SK Samanta, A Maiti Effect of micro-alloying on the characteristics of as-cast Al-Zn-Cu-Mg-X alloy with varying Cu and Zn, *Materials Today Communications* 34, 105445, 2023
9. KK Sadhu, **N Mandal**, RR Sahoo SiC/Graphene reinforced Aluminium Metal Matrix Composites prepared by Powder Metallurgy: A Review, *Journal of Manufacturing Processes* 91, 10-43, 2023
10. S Goswami, R Ghosh, H Hirani, **N Mandal**, Mechano-tribological performance of Graphene/CNT reinforced alumina nanocomposites—Review and quantitative insights, *Ceramics International* 48(9), 11879-11908, 2022
11. AR Dhar, D Gupta, SS Roy, AK Lohar, **N Mandal** Covariance matrix adapted grey wolf optimizer tuned eXtreme gradient boost for bi-directional modelling of direct metal deposition process, *Expert Systems with Applications* 199, 116971, 2022

12. K Ghosh, S Goswami, P Roy, **N Mandal**, High temperature tribological performance of molybdenum reinforced zirconia toughened alumina composites prepared by pressure-less sintering, *Ceramics International* 48 (19 A), 28013-28022, 2022
13. BK Singh, S Goswami, K Ghosh, H Roy, **N Mandal**, Performance evaluation of self lubricating CuO added ZTA ceramic inserts in dry turning application, *International Journal of Refractory Metals and Hard Materials* 98, 105551, 2021
14. S Neogi, **N Mandal**, R Ghosh, Self-assembled Nano-BiFeO₃Chemi-resistive VOC Sensor: A Non-conventional MOS Sensor Highly Selective toward Acetone, *Journal of The Institution of Engineers (India): Series C*, 1-5, 2021
15. M Prudhvi Krishna, Simeon A Babalola, Samik Dutta, Shitanshu Shekhar Chakraborty, Murugan Thangadurai, Himadri Roy, **Nilrudra Mandal**, Harish Hirani, Poulomi Roy, Effectiveness of different facemask materials to combat transmission of airborne diseases, *Sadhana*, 46, 119 (1-10), 2021
16. S Mazumder, KK Sadhu, K Ghosh, P Roy, **N Mandal**, An Effective Approach of Nanoscale CaF₂ Addition into ZTA Composite to Enhance Tribological Characteristics in Dry Sliding, *Transaction of Indian Ceramic Society* 80 (1), 1-9, 2021
17. K Ghosh, S Mazumder, H Hirani, P Roy, **N Mandal**, Enhancement of dry sliding tribological characteristics of perforated ZTA ceramic composite filled with nano MoS₂ in high vacuum, *ASME Journal of Tribology* 143, 061401-1, 2021
18. BK Singh, S Samanta, SS Roy, RR Sahoo, H Roy, **N Mandal**, Evaluation of mechanical and frictional properties of CuO added MgO/ZTA ceramics, *Materials Research Express (IOP)*, 6 (12), 125208, 2020
19. K Ghosh, S Mazumder, B Kumar Singh, H Hirani, P Roy, **N Mandal**, Tribological property investigation of self-lubricating molybdenum based zirconia ceramic composite operational at elevated temperature, *ASME Journal of Tribology* 142, 0217041-6, 2020
20. S Mazumder, OP Kumar, DK Kotnees, **N Mandal**, Tribological influences of CuO into 3Y-TZP ceramic composite in conformal contact, *ASME Journal of Tribology* 141 (031606), 1-10, 2019
21. BK Singh, D Ghosh, **N Mandal**, H Roy, Modeling and Predicting Abrasive Wear Behavior of Al–SiCp Composite Using Multi-response Optimization-Based RSM, *Journal of The Institution of Engineers (India): Series D*, 100 (2), 263-273, 2019
22. S Mazumder, BB Barad, BK Show, **N Mandal**, Tribological property enhancement of 3Y-TZP ceramic by the combined effect of CaF₂ and MgO phases, *Ceramics International* 45 (10), 13447-13455, 2019.

23. A Maikap, K Mukherjee, B Mondal, **N Mandal**, AK Meikap, A novel non-enzymatic zinc oxide thin film based electrochemical recyclable strip with device interface for quantitative detection of catechol in water, *Biosensors and Bioelectronics* 128, 32-36, 2019
24. JS Kumar, S Ghosh, NC Murmu, **N Mandal**, T Kuila, Electrochemical Detection of H₂O₂ Using Copper Oxide-Reduced Graphene Oxide Heterostructure, *Journal of nanoscience and nanotechnology* 19 (8), 5295-5302, 2019
25. BK Singh, H Roy, B Mondal, SS Roy, **N Mandal**, Measurement of Chip Morphology and Multi criteria Optimization of Turning Parameters for Machining of AISI 4340 Steel using Y-ZTA Cutting Insert, *Measurement* 142, 181-194, 2019.
26. S. Mazumder, B.K. Kumar, A. Singh, H Roy, **N Mandal**, Tribological investigation of MgO/Al₂O₃ ceramic composite with the inclusion of nanoCuO in dry abrasive wear test, *Materials Research Express (IOP)*, 6, 085086, 2019
27. S. Chhetri, Nitai C.Adak, Pranab Samanta, **Nilrudra Mandal**, Tapas Kuila & Naresh Chandra Murmu Investigation of mechanical and thermal properties of the cetyltrimethylammonium bromide functionalized molybdenum disulfide (MoS₂)/epoxy composites *Polymer Bulletin* 75 (1), 327–343, 2018
28. B Singh, S Ghosh, Kunal, Roy, B Mondal, **N Mandal**, Correlation between microstructure and mechanical properties of YSZ/Al₂O₃ ceramics and its effect on high speed machining of steel, *Transaction of Indian Ceramic Society* 77 (4), 1-7, 2018.
29. A Maikap, K Mukherjee, **N Mandal**, B Mondal, AK Meikap, Iron (III) oxide hydroxide based novel electrode for the electrochemical detection of trace level fluoride present in water, *Electrochimica Acta* 264, 150-156, 2018.
30. D Ghosh, S Ray, J Mandal, **N Mandal**, AK Shukla, Failure Analysis of PRDS Pipe in a Thermal Power Plant Boiler, *Journal of The Institution of Engineers (India): Series C* 99 (2), 233-238, 2018.
31. BK Singh, H Roy, B Mondal, SS Roy, **N Mandal**, Development and machinability evaluation of MgO doped Y-ZTA ceramic inserts for high-speed machining of steel, *Machining Science and Technology* 22 (6), 899-913, 2018
32. SK Gautam, **N Mandal**, H Roy, AK Lohar, SK Samanta, G Sutradhar, Optimization of processing parameters of cooling slope process for semi-solid casting of ADC 12 Al alloy, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 40(6), 291,2018
33. Debashis Ghosh, Manab Mallik, **Nilrudra Mandal**, Samik Dutta, Himadri Roy, Aditya Kumar Lohar, Effect of Experimental Variables of Abrasive Wear on 3D Surface Roughness and Wear Rate of Al–4.5 % Cu Alloy, *Journal of Institution of Engineers (Series: D) (Springer)*, 97(1), 27-36, 2017

34. **N Mandal**, B Doloi, B Mondal, BK Singh, Multi-criteria optimization and predictive modeling of turning forces in high-speed machining of yttria based zirconia toughened alumina insert using desirability function approach, *ProclMechE Part B: J Engineering Manufacture* 231 (8), 1-13, 2017
35. S. Mondal, **N Mandal**, B Mondal, K.Mukherjee, S. Mukhopadhyay, ApurbaDey, Fish scale derived hydroxyapatite with nanocrystalline TiO₂ composite for tissue engineering application, *Materials Characterization* (Elsevier), 121, 112–124, 2016
36. Jit Sarkar, M Bhattacharyya, Randhir Kumar, **N Mandal**, Manab Mallik, Synthesis and characterizations of Cu–Ag core–shell nanoparticles, *Advanced Science Letters* (American Scientific), 22(1), 193-196, 2016
37. **Nilrudra Mandal**, Biswanah Doloi, Biswanath Mondal, Surface roughness prediction model using Zirconia Toughened Alumina (ZTA) turning inserts: Taguchi method and Regression analysis, *Journal of Institution of Engineers* (Series: C) (Springer), 97 (1), 77-84, 2016
38. BK Singh, B Mondal, **Nilrudra Mandal**, Machinability evaluation and desirability function optimization of turning parameters for Cr₂O₃ doped zirconia toughened alumina (Cr-ZTA) cutting insert in high speed machining of steel, *Ceramics International* (Elsevier), 42 (3), 3338–3350, 2016
39. A Maikap, K Mukherjee, B Mondal, **N Mandal**, Zinc oxide thin film based nonenzymatic electrochemical sensor for the detection of trace level catechol, *RSC Advances* (RSC), 6(69), 64611-64616, 2016
40. **N Mandal**, S Mondal, A Mondal, K Mukherjee, B Mondal, Response surface 5odelling of Cu (II) removal from wastewater using fish scale-derived hydroxyapatite: application of Box–Behnken experimental design, *Desalination and Water Treatment* (Taylor & Francis), 57 (33) 15410–15423, 2016
41. H Goyal, **Nilrudra Mandal**, H Roy, S K Mitra, B Mondal, Multi-Response Optimization for Processing Al-SiCp Composites: An Approach towards Enhancement of Mechanical Properties, *Transaction of Indian Institute of Metals* (Springer), 68 (3), 453-463, 2015
42. D Ghosh, S. Ray, H Roy, **N Mandal**, A K Shukla, High Temperature Graphitization Failure of Primary Super heater Tube, *High Temperature Materials and Processes* (De Gruyter), 34 (8), 777-781, 2015
43. **Nilrudra Mandal**, B Doloi, B Mondal, Application of back propagation neural network model for predicting flank wear of yttria based zirconia toughened alumina (ZTA) ceramic inserts, *Transaction of Indian Institute of Metals* (Springer), 68 (5), 783-789, 2015
44. S. Mahata, B Mondal, S Smahata, K Usha, **N Mandal**, K Mukherjee, Chemical modification of titanium isopropoxide for producing stable dispersion of titaniano-particles, *Materials Chemistry and Physics* (Elsevier), 151(1), 267-274, 2015

45. S Mukherjee, **Nilrudra Mandal**, A Dey, B Mondal, An approach towards optimization of the extraction of polyphenolic antioxidants from ginger (*Zingiberofficinale*), *Journal of Food Science and Technology* (Springer), 51(11), 3301–3308, 2014
46. B Mondal, **N Mandal**, S Mondal, K Mukherjee, S Mukhopadhyay, A Dey, Optimization of process parameters for fabrication of nanocrystalline TiO₂– hydroxyapatite based scaffold using response surface methodology, *Advances in Applied Ceramics* (Taylor & Francis), 113 (3), 129-138, 2014
47. B Mondal, **Nilrudra Mandal**, B Doloi, Development of Ce/Y-PSZ toughened Alumina inserts for high speed machining steel, *International Journal of Applied Ceramic Technology* (Wiley), 11 (2), 228-239, 2014
48. S. Mondal, A. Mondal, **N. Mandal**, B. Mondal, S. Mukhopadhyay, A. Dey, S. Singh, Physico-chemical characterization and biological response of Labeorohita-derived hydroxyapatite scaffold, *Bioprocess and Biosystems Engineering* (Springer), 3, 1233-1240, 2014
49. B Mondal, **N Mandal**, Development of Intricate Automotive Components Particulate Metal Matrix Composite through Rapid-Prototyping-Integrated Investment Casting, *Indian Foundry Journal*, 60 (6), 2014
50. **Nilrudra Mandal**, B Doloi, B Mondal, Predictive modelling of surface roughness in high speed machining of AISI 4340 steel using yttria stabilized zirconia toughened alumina turning insert, *International Journal of Refractory Metals and Hard Materials* (Elsevier), 38, 40-46, 2013
51. **Nilrudra Mandal**, Biswanath Mondal, Biswanath Doloi, Dipanjan Sengupta, Effect of yttria on the synthesis, microstructure and mechanical properties of partially stabilized zirconia in α -Al₂O₃ matrix, *International Journal of Advanced Materials Manufacturing & Characterization*, 1(1),17-24, 2013
52. **Nilrudra Mandal**, B Doloi, B Mondal, Force prediction model of Zirconia Toughened Alumina (ZTA) inserts in hard turning of AISI 4340 steel using response surface methodology, *International Journal of Precision Engineering & Manufacturing* (Springer), 13 (9), 1589-1599, 2012
53. **Nilrudra Mandal**, H Roy, B Mondal, NC Murmu, SK Mukhopadhyay, Mathematical modelling of wear characteristics of 6061 Al-alloy-SiCp composite using response surface methodology, *Journal of Materials Engineering and Performance* (Springer), 21 (1), 17-24, 2012
54. Suprabhat Mukherjee, Bidyut Bandyopadhyay, Bikram Basak, **Nilrudra Mandal**, Apurba Dey, Biswanath Mondal, An improved method of optimizing the extraction of polyphenol oxidase from potato (*Solanumtuberosum* L.) Peel, *Notulae Scientia Biologica*, 4 (1), 98-107, 2012
55. **Nilrudra Mandal**, B Doloi, B Mondal, Machining Parameters Optimization of Developed Yttria Stabilized Zirconia Toughened Alumina Ceramic Inserts While Machining AISI 4340 Steel, *International Journal of Mechanical and Industrial Engineering* (Waset), 6,156-159, 2012

56. **N Mandal**, B Doloi, B Mondal, R Das, Optimization of flank wear using Zirconia Toughened Alumina (ZTA) cutting tool: Taguchi method and Regression analysis, Measurement 44 (10), 2149-2155, 2011
57. **N Mandal**, B Doloi, B Mondal, Development of flank wear prediction model of Zirconia Toughened Alumina (ZTA) cutting tool using response surface methodology, International Journal of Refractory Metals and Hard Materials 29 (2), 273-280, 2011

Book Chapter:

1. Sayan Atta, Kishor Kumar Sadhu, Anand Kumar, **Nilrudra Mandal**, Development of Self-lubricating Ceramic Composite and Evaluation of Mechanical and Tribological Properties, Recent Trends in Manufacturing and Materials Towards Industry 4.0, Lecture Notes in Mechanical Engineering, 565-577, https://doi.org/10.1007/978-981-15-9505-9_51.
2. A. R. Dhar, **N Mandal**, S. S. Roy, Knowledge Discovery by Decision Tree Using Experimental Data in High-Speed Turning of Steel with Ceramic Tool Insert, Advances in Simulation, Product Design and Development, 427-435, Lecture Notes on Multidisciplinary Industrial Engineering, https://doi.org/10.1007/978-981-32-9487-5_34.
3. Subhrojyoti Mazumder, **N. Mandal**, Machining Performance Prediction for Zirconia Toughened Alumina Insert in Machining of High Carbon Steel Using Computational Approach, Advances in Simulation, Product Design and Development, 191-201, Lecture Notes on Multidisciplinary Industrial Engineering, https://doi.org/10.1007/978-981-32-9487-5_15.

Details of Patents:

Granted Patent:

- K. Mukherjee, Priyanka Das, **Nilrudra Mandal**, Asit Kumar Batabyal, Biswanath Mondal, A Spinel Alkaline Earth Metal Ferite Impregnated Activated Alumina Adsorbent for Effective Defluoridation of Water and a Process for the Preparation Thereof. Indian Patent 336377, Filed on: 28/04/2016, Granted on: 01/05/2020

Filed Patent:

- Prosenjit Das, Pinaki Das, Tapan Roy, **Nilrudra Mandal**, Manju Singh. Tooth Colored Dental Brackets and a Process thereof. Indian Patent Application no. 201811029904, Filed on: 09/08/2018, Published online on: 07/08/2020
- Abhisek Maikap, Kalisadhan Mukherjee, Biswanath Mondal, **Nilrudra Mandal**, An Electrochemical Catechol Detecting Strip Based Sensor. Indian Patent Application no. 201811002631, Filed on: 23/01/2018, Published online on: 26/07/2019

- Nripen Chanda, Ranajit Ghosh, **Nilrudra Mandal**, Palash Chowdhury, Harish Hirani, A Process for Removal of Iron from Contaminated Water and a High Flow Rate Iron Filter System Thereof. Indian Patent Application no. 202011026189, Filed on: 22/06/2020, Published online on: 24/12/2021
- Ravi Kumar Arun, Anuj Kumar, Nripen Chanda, **Nilrudra Mandal**, Harish Hirani, An aqueous rechargeable battery using zinc anode and rGO-V₂O₅-SiO₂ hybrid as cathode material, Indian Patent Application no. 202111002153, Filed on 15/01/2021
- Nripen Chanda, Ranajit Ghosh, **Nilrudra Mandal**, Palash Chowdhury, Harish Hirani, High Flow Rate Arsenic Removal Plant, Indian Patent Application no 202111002155, Filed on: 15/01/2021
- Poulomi Roy, Shitanshu Shekhar Chakraborty, **Nilrudra Mandal**, Bittagopal Mondal, Harish Hirani, Outdoor air purifier with parallel arrangement of air suction and discharge, Indian Patent Application no 202111045355, Filed on: 04/10/2021
- Subhra Samanta, Poulomi Roy, **Nilrudra Mandal**, Harish Hirani, A process for Nano grade silica extraction from agro-waste without ash formation, Indian Patent Application no 202111045117, Filed on: 04/10/2021

Granted Copyright:

- Rahul Seth, Apurba Mandal, Soumen Mandal, Nripen Chanda, Nilrudra Mandal, A hand-held device for oxygen gas sensor interrogation, Indian Copyright L-98311/2021 Date: 08.01.2021
- Saurav Halder, Kalyan Chatterjee, Nripen Chanda, Nilrudra Mandal, Harish Hirani, Small UV Disinfector Box, Indian Copyright L-97468/2020 Date: 10.12.2020
- Poulomi Roy, Partha Sarathi Pal, Nilrudra Mandal, Himadri Roy, Harish Hirani, Process know-how to manufacture three layered hydrophobic surface mask along with UV-C sterilization process, Indian Copyright L-97467/2020 Date: 10.12.2020

Filed Copyright:

- Nripen Chanda, Ranajit Ghosh, Nilrudra Mandal, Palash Chowdhury, Harish Hirani, Drawing of high flow rate iron removal filter, Filed on 29.11.2019, Reference No: 047CR2019

Filed Design Registration:

- Nripen Chanda, Ranajit Ghosh, Nilrudra Mandal, Palash Chowdhury, Harish Hirani, Community level arsenic removal Filter-Model -II, sent to CSIR IPU on 17.06.2019, Reference No: 10/Design/2019 Dt. 19.09.2019

Research Activities:

A. Ongoing Projects

S.No	Title	Cost in Lakh	Duration	Role as PI/Co-PI	Agency
01.	Advanced Wear & Corrosion resistant coatings development & Commercialization in India	42.37	2023-2026	Co-PI	DST
02.	Development of low-cost Induction Melted Liquid Metal Additive Manufacturing Machine (IMMAMM)with Numerical and Experimental Investigations	16.11	2023-2026	Co-PI	DST

B. Projects Completed during last five years

S. No	Title	Cost in Lakh	Duration	Role as PI/Co-PI	Agency
01	Self-Lubricating Al-SiC-Graphene Composites for Advanced Tribological Applications	27.84	2020-2023	Co-PI	SERB
02.	Development of Optically Transparent and Translucent Zirconia Ceramic Products for Advanced Technological Application	17.97	2020-2023	Co-PI	SERB
03.	Intelligent pulse flow respiratory device based on photoplethysmogram (PPG) and surface electromyogram (sEMG) sensory fusion for optimized delivery of oxygen from oxygen concentrators in COVID19 dyspnea	12.11	2022-2023	Co-PI	SERB
04.	Development of CNT-reinforced alumina composite for wear-resistant applications	30.94	2019-2023	PI	SERB
05.	Development of self-lubricating nano-composite for wear-resistant applications	81.38	2017-2021	PI	DST Nanomission
06.	Development and Performance modeling of Advanced Ceramic Insert for High Speed Machining Application	37.40	2014-2017	PI	DST
07.	Development & Performance Study of Functional Porous Ceramics for Water Treatment	31.00	2012-2017	PI	CSIR Network Project
08.	Design and development of phenol and related derivative detecting biosensor using enzyme nano particles conjugate	54.00	2012-2017	Co-PI	CSIR Network Project
09.	Improvement and deployment of developed defluoridation module for domestic uses	20.00	2016-2017	Co-PI	CSIR Network Project

Technology Developed & Transferred:

Sr. No.	Name of Technology	Licensee
01.	Ceramic Cutting Inserts	<ul style="list-style-type: none"> • Still not transferred
02.	Outdoor Air Purifier	<ul style="list-style-type: none"> • Still not transferred
03.	Domestic Filtration Unit for Defluoridation of Water	<ul style="list-style-type: none"> • ANTS Ceramics Pvt. Ltd. Vasai (East), Maharashtra
04.	UV Sterilized Hydrophobic Material Mask	<ul style="list-style-type: none"> • Power Tech Mining Pvt. Ltd, Asansol • Gaurav Pharmaceuticals, Rajasthan
05.	Community Level Arsenic Removal Filter	<ul style="list-style-type: none"> • Harambh Chemicals Pvt. Ltd., Varanasi, UP • Malted Home Appliances, Bhojpur, Bihar • SreSenthil Engineering Co., Coimbatore, Tamilnadu • Parth Multi Aqua Pvt. Ltd., Kankarbagh, Patna, Bihar • Subidhi Tech India Pvt. Ltd., Gurugram, Haryana • Honeyscape Infrastructures Pvt. Ltd., Patna, Bihar
06.	High Flow Rate Arsenic Removal Plant	<ul style="list-style-type: none"> • Aquafizer Industries Pvt. Ltd., New Delhi • Aquagrants Water Purifier Pvt. Ltd., Patna, Bihar • Capricans Aqua (P) Ltd., Shibpur, Howrah • Technochem, Barasat, West Bengal • Unicare Technologies Pvt Ltd., Pune, Maharashtra
07.	High Flow Rate Iron Removal Filter	<ul style="list-style-type: none"> • Infinite Aqua Pvt. Ltd., New Delhi • Hindustan Engineering, Guwahati-781007, Assam • Darshan Trade Links, Akola, Maharashtra • Parth Multi Aqua Private Limited, Patna, Bihar • UNIBRO Infrserv Pvt. Ltd., Siliguri, West Bengal • MARUTI TECH, Uttar Dinajpur-733209, WB • Sre Senthil Engineering Co., Coimbatore, Tamilnadu • Maa Durga Sales Agency, Guwahati-781009, Assam • Capricans Aqua (P) Ltd., Shibpur, Howrah • Taurus Industries, Guwahati-781005, Assam • Aquagrants Water Purifier Pvt. Ltd., Patna, Bihar • Mint Environ Pvt. Ltd., Begumpet, Hyderabad • Mission Minimise LLP, Danapur, Patna, Bihar • Voltas Limited, Chinchpokli, Mumbai • Aquafizer India Pvt. Ltd. Haryana • Scientifics and Aqua Systems, Hyderabad, Telangana • Premier Techno India Pvt. Ltd., Katihar, Bihar

		<ul style="list-style-type: none"> • Yamunotri Drinking Water, Patna, Bihar • N.S. Enterprise, Agra, UP • Structure India, Ghaziabad, UP
08.	Oxygen Enrichment Unit	<ul style="list-style-type: none"> • A B Elasto Products Private Limited, Kolkata-700102, WB • Central Tool Room And Training Centre, Bhubaneswar-751024, Odisha • Apollo Computing Laboratories (P) Ltd, Hyderabad-500062 Telangana • Automation Engineers, Kolkata-700 001, WB • Auto Malleable, Jaipur-302012, Rajasthan • Jyoti CNC Automation Ltd., Rajkot-360021, Gujarat • Mech Air Industries, Vadodara-390016, Gujarat • GRID Engineers Private Limited, Delhi • CBS Technologies Private Limited, Gautam Buddha Nagar, U.P. • C and I Calibrations Private Limited, Rajasthan • Conquerent Control Systems Private Limited, Gurgaon-122050, Haryana • SA CORP, Gurgaon-122050, Haryana • Zen Medical Technologies Pvt. Ltd., Ranga Reddy, Telengana

Student Guidance:

A. M.Tech Thesis

Sl. No	Name of Student	Title of the Dissertation	Year
1.	Md. Nadir	Preparation of hydroxyapatite adsorbents from chemical and bio resources for the removal of copper from water	2017
2.	Om Prakash Kumar	Evaluation of mechanical and tribological properties of CuO doped 3Y-TZP	2018
3.	Avinash Kumar Yadav	Evaluation of mechanical and metallurgical properties of MgO added Al ₂ O ₃ /ZrO ₂ ceramics and its application as cutting	2019
4.	Kishor Kumar Sadhu	Evaluation of mechanical and tribological properties of alumina/zirconia ceramic component added calcium fluoride solid lubricant	2019
5.	Ayush Pratap	Preparation, evaluation, characterization and structural application (cutting insert) of ZTA ceramics.	2020
6.	Sayan Atta	Effect of fluoride and sulfide solid lubricants in ZTA ceramics	2020
7.	Md Sajid Hussain	Evaluation of mechanical and tribological characteristics of hot-pressed self-lubricating CuO/MgO/ZTA ceramic composites	2021

B. PhD Thesis

Sl.	Name of	Title of the Dissertation	Year
1.	Bipin Kumar Singh	Development and performance evaluation of self-lubricating alumina ceramic inserts in machining application	Awarded (Co-Guide)
2.	Ananda Rabi Dhar	Development of Metaheuristic Algorithms tuned Artificial Intelligence-Based Models for Prediction and Optimization of Process Parameters of Metal Additive Manufacturing	Awarded (Co-Guide)
3.	Kunal Ghosh	Development and Performance Evaluation of Self Lubricating Zirconia Toughened Alumina Ceramic Composites with Mo/MoS ₂ for High Temperature	Ongoing (Guide)
4.	Moumita Sarkar	Development of carbide added alumina based ceramic composite for wear resistance application	Ongoing (Guide)
5.	Bapanapalle Chandra Obulesu	Still Not Decided	Ongoing (Guide)
6.	Prabhat Kumar Prajapati	Still Not Decided	Ongoing (Guide)
7.	Abhijit Dutta	Friction stir welding of steel and aluminium sheets	Ongoing (Co-Guide)
8.	Diya Mukherjee	Development of Al-Zr-Sc-Sr-Ti alloys for High Temperature Aerospace application	Ongoing (Co-Guide)
9.	Kishor Kumar Sadhu	Tribo-Mechanical Evaluation of Graphene/SiC reinforced Aluminium Self-Lubricating Composites	Ongoing (Co-Guide)

Membership of Professional Bodies

- ✚ Life Member Tribology Society of India (Membership No: LM 3988)
- ✚ Secretary and Life Member of Investment Casting Society (ICS) India (Membership No: ICS/LM/086)