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Curriculum Vitae

Dr. Tapas Laha, Professor
Department of Metallurgical & Materials Engineering, Indian Institute of Technology Kharagpur
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Date of Birth: 07/07/1978

Research Areas:

- Bulk nanostructured metallic composites and layered composites - Processing & Characterization
- Bulk Metallic glass nanocomposites – Understanding the effect of multi-phase microstructure
- Metallic glass coatings – Development and Characterization
- Surface Engineering & Coating – Synthesis and Interfacial Phenomena
- Material Synthesis by Mechanical alloying, Spark Plasma Sintering and Thermal spraying

Educational Qualifications:

S. No.	*Degree*	*University*	*Year*	*Subjects*
01	B.E.	Bengal Engineering College (IIEST), Shibpur, India	1999	Metallurgical Engineering
02	M.Tech.	Indian Institute of Technology Kanpur, India	2002	Materials & Metallurgical Engineering
03	Ph.D.	Florida International University, Miami, USA	2006	Materials Science & Engineering

Professional and research experience:

Sl. No.	*Designation*	*Institute / Organization*	*Duration of Work*
1	Professor	Indian Institute of Technology, Kharagpur	Dec 2019 onwards
2	Associate Professor	Indian Institute of Technology, Kharagpur	Oct. 2014 – Dec 2019
3	Assistant Professor	Indian Institute of Technology, Kharagpur	Aug. 2008 - Oct. 2014
4	Post Doctoral Scientist	University of California, Davis	Aug. 2007 – Jul 2008
5	Post Doctoral Scientist	Florida International University, Miami	Aug. 2007 – Jul 2008

Awards/Distinctions:

i. Selected as the *"Top 20% reviewer" by Metallurgical & Materials Transactions* in 2012.
ii. *"IEI Young Engineers Award 2010-2011"*, in Metallurgical & Materials Engineering discipline, given by the Institution of Engineers (India)
iii. *Paper Ranked # 1 in Materials Science and Engineering: R* journal published by Elsevier Science, April-June, 2007
iv. *"The Outstanding Ph.D. Graduate, Fall 2006"* from College of Engineering and Computing, Florida International University, Miami
v. *"Dissertation Year Fellowship",* University Graduate School, Florida International University, 2006
vi. *"National Science Foundation (NSF) Travel Scholarship"* to present a student poster during NSF Design and Manufacturing Innovation Conference at St. Louis, MO, July, 2006
vii. *"The Most Professional Leader"*, Engineering Student Council at Florida International University, 2005-06
viii. *"Zeta Alpha - Phi Beta Delta Honor Society Member"* at FIU, 2005. Phi Kappa Phi is renowned for academic excellence
ix. *"Arthur E. Focke LeaderShape Award"*, American Society of Metals (ASM) to attend National Summer Institute Camp at University of Illinois, Urbana Champaign in June 2004
x. *"NSF Scholarship"* to attend Nano-mechanics course at Northwestern University, Chicago, in Summer 2003

Teaching activity:

Theory Courses:

i. Advanced Materials & Processes (MT 60029)*
i. Composite Materials (MT 41023)*
ii. Introduction to Nano-science And Technology (NT70002 - Module: Met & Mech Eng.)*
iii. Materials Characterization (MT 31012)
iv. Materials Engineering (MT 30001)

Laboratory Courses:

i. Introduction to Engineering Materials Lab (MT 29007)*
ii. X-Ray Diffraction & Transmission Electron Microscopy Lab (MT 39022)*
iii. Materials Characterization Lab (MT 39004)
iv. Heat Treatment of Materials Lab (MT 39003)

** Currently, these courses are being taught alternatively in Autumn and Spring semesters.*

Research Publications:

Publication summary:

- Published in Peer Reviewed Journals: 66
- Published in Conference Proceedings: 09

Publications in peer reviewed journals (66):

1. S.K. Nayak, A. Kumar, A. Pathak, A. Banerjee, T. Laha, Multi-scale mechanical properties of Fe-based amorphous/nanocrystalline composite coating synthesized by HVOF spraying, *Journal of Alloys and Compounds*, v 825, Article 154120 (2020)
2. A. Sahu, R.S. Maurya, T. Laha, Non-isothermal crystallization behavior of $Al_{86}Ni_8Y_6$ and $Al_{86}Ni_6Y_{4.5}Co_2La_{1.5}$ melt-spun ribbons, milled ribbon particles and bulk samples consolidated by spark plasma sintering, *Thermochimica Acta*, v 684, Article 178486 (2020)
3. R.S. Maurya, A. Sahu and T. Laha, Nanoindentation study on $Al_{86}Ni_8Y_6$ glassy alloy synthesized via mechanical alloying and spark plasma sintering, *Journal of Materials Research*, available online, 2020
4. R.S. Maurya, T. Laha, The Glassy Structure Formation and Phase Evolution in Mechanically Alloyed and Spark Plasma-Sintered Al-TM-RE Alloys, *Journal of Materials Engineering and Performance*, v 28, 7407-7418 (2019)
5. A. Kumar, S.K. Nayak, P. Bijalwan, M. Dutta, A. Banerjee, T. Laha, Optimization of mechanical and corrosion properties of plasma sprayed low-chromium containing Fe-based amorphous / nanocrystalline composite coating, *Surface and Coatings Technology*, v 370, 255-268 (2019)
6. A. Kumar, S.K. Nayak, P. Bijalwan, M. Dutta, A. Banerjee, T. Laha, Fe-based amorphous/nanocrystalline composite coating by plasma spraying: Effect of heat input on morphology, phase evolution and mechanical properties, *Journal of Alloys and Compounds*, v 771, 827-837 (2019)
7. S.K. Nayak, A. Kumar, K. Sarkar, A. Pathak, A. Banerjee, T. Laha, A Study on the Corrosion Inhibition of Fe-Based Amorphous/Nanocrystalline Coating Synthesized by High-Velocity Oxy-Fuel Spraying in an Extreme Environment, *Journal of Thermal Spray Technology*, v 28, 1433–1447 (2019)
8. P. Bijalwan, A. Kumar, S.K. Nayak, A. Banerjee, M. Dutta, T. Laha, Microstructure and corrosion behaviour of Fe-based amorphous composite coatings developed by atmospheric plasma spraying, *Journal of Alloys and Compounds*, v 796, 47-54 (2019)
9. W.R. Ilaham, R.S. Maurya and T. Laha, Investigation of high-temperature oxidation behavior of silicon added 14Cr nanostructured ferritic alloys synthesized via mechanical alloying and spark plasma sintering, *Materials Research Express*, v 6, 1150f6 (2019)

10. A. Sahu. R.S. Maurya, T. Laha, Effect of sintering temperature on phase evolution of Al86Ni6Y4.5Co2La1.5 bulk amorphous composites synthesized via mechanical alloying and spark plasma sintering, *Progress in Natural Science*, v 29, 32-40 (2019)
11. L.K. Singh, A. Bhadauria, T. Laha, Comparing the strengthening efficiency of multiwalled carbon nanotubes and graphene nanoplatelets in aluminum matrix, Powder Technology, v 356, 1059-1076, (2019)
12. A. Bhadauria, L.K. Singh, T. Laha, Combined strengthening effect of nanocrystalline matrix and graphene nanoplatelet reinforcement on the mechanical properties of spark plasma sintered aluminum based nanocomposites, *Materials Science & Engineering A*, v 749, 14-26 (2019)
13. S. Ghosh, P. Das, S. Ganguly, S. Remanan, T.K. Das, S.K. Bhattacharyya, J. Baral, A.K. Das, T. Laha, N.C. Das, 3D-Enhanced, High-Performing, Super-hydrophobic and Electromagnetic-Interference Shielding Fabrics Based on Silver Paint and Their Use in Antibacterial Applications, *Chemistry Select*, v 4, 11748-11754 (2019)
14. W.R Ilaham, L. Singh, A. Bhadauria, T. Laha, Effect of Si addition on the microstructure and mechanical property of nanostructured oxide dispersion strengthened ferritic steel synthesized via mechanical alloying and spark plasma sintering, *Fusion Engineering and Design*, v 138, 303-312 (2019)
15. A. Kumar, S.K. Nayak, P. Bijalwan, M. Dutta, A. Banerjee, T. Laha, Mechanical and corrosion properties of plasma-sprayed Fe-based amorphous/nanocrystalline composite coating, *Advances in Materials and Processing Technologies*, v 5, 371-377 (2019)
16. A. Sahu, R.S. Maurya, T. Laha, Comparative study on sintering behavior of Al86Ni6Y4.5Co2La1.5 mechanically alloyed amorphous powder and melt-spun ribbon, *Advanced Powder Technology*, v 30, 691-699 (2019)
17. L.K. Singh, A Bhadauria, A. Oraon, T. Laha, Spark plasma sintered Al-0.5 wt% MWCNT nanocomposite: Effect of sintering pressure on the densification behavior and multi-scale mechanical properties, *Diamond & Related Materials*, v 91, 144-155 (2019)
18. A. Bhadauria, L.K. Singh, T. Laha, Nanoindentation and nanoscratch properties of graphene nanoplatelets reinforced spark plasma sintered aluminium-based nanocomposite, *Advances in Materials and Processing Technologies*, v 5, 295-302 (2019)
19. L.K. Singh, A. Bhadauria, T. Laha, Al-MWCNT nanocomposite synthesized via spark plasma sintering: Effect of powder milling and reinforcement addition on sintering kinetics and mechanical properties, *Journal of Materials Research and Technology*, v 8, 503-512 (2019)
20. L.K. Singh, A. Bhadauria, S. Jana, T. Laha, Effect of Sintering Temperature and Heating Rate on Crystallite Size, Densification Behaviour and Mechanical Properties of Al-MWCNT Nanocomposite Consolidated via Spark Plasma Sintering, *Acta Metallurgica Sinica*, v 31, 1019–1030 (2018)
21. T. Thomas, C. Zhang, A. Sahu, P. Nautiyal, A. Loganathan, T. Laha, B. Boesl, A. Agarwal, Effect of Graphene Reinforcement on the Mechanical Properties of Ti_2AlC Ceramic Fabricated by Spark Plasma Sintering, *Materials Science & Engineering A*, v 728, 45-53 (2018)
22. A. Bhadauria, L.K. Singh, T. Laha, Effect of physio-chemically functionalized graphene nanoplatelet reinforcement on tensile properties of aluminum nanocomposite synthesized via spark plasma sintering, *Journal of Alloys and Compounds*, v 748, 783-797 (2018)
23. O. Rahman, M. Sribalaji, B. Mukherjee, T. Laha, A. Keshari, Synergistic effect of hybrid carbon nanotube and graphene nanoplatelets reinforcement on processing, microstructure, interfacial stress and mechanical properties of Al2O3 nanocomposites, *Ceramics International*, v. 44, 2109-2122 (2018)
24. G. Thirunavukarasu, S. Kundu, D. Roy, T. Laha, S. Chatterjee, Exhibition of veiled features in diffusion bonding of titanium alloy and stainless steel via copper, *Metallurgical Research & Technology*, v 115, 1-15 (2017)
25. A. Patra, R. Saxena, S.K. Karak, T. Laha, S.K. Sahu, Fabrication and characterization of nano-Y_2O_3 dispersed W-Ni-Mo and W-Ni-Ti-Nb alloys by mechanical alloying and spark plasma sintering, *Journal of Alloys and Compounds*, 707 Page: 245-250 (2017)

26. A. Loganathan, A. Sahu, C. Rudolf, C. Zhang, S. Rengifo, T. Laha, B. Boesl, A. Agarwal, Multi-scale tribological and nanomechanical behavior of cold sprayed Ti2AlC MAX phase coating, *Surface and Coatings Technology*, v 334, 384-393 (2018)

27. A. Chakraborty, P. Govardhana, A. Mondal, M. Dutta, S.B. Singh, T. Laha, Microstructural development of prior nickel coated hot dipped galvanised coatings by , *Journal of Alloys and Compounds*, v 699, 648-656 (2017)

28. A. Patra, R. Saxena, S.K. Karak, S.K. Sahu, T. Laha, Fabrication and characterization of nano-Y2O3 dispersed W-Ni-Mo and W-Ni-Ti-Nb alloys by mechanical alloying and spark plasma sintering, Journal of Alloys and Compounds, Available online, (2017)

29. A. Banerjee, D. Prusty, M. Dutta, A.K. Bhowmick, T. Laha, Effect of Cu_2O thin film on Cu–Sn alloy coated steel surface in promoting interfacial adhesion with rubber, *Journal of Adhesion Science & Technology*, v 31, 1163-1180 (2017)

30. R. S. Maurya, A. Sahu, T. Laha, Effect of sintering temperature on phase transformation during consolidation of mechanically alloyed Al86Ni6Y6Co2 amorphous powders by spark plasma sintering, *Journal of Non-Crystalline Solids*, 453, 1-7 (2016)

31. R.S. Maurya, T. Laha, Microstructure and phase evolution in spark-plasma-sintered Al86Ni6Y4.5Co2La1.5 glassy alloy, *Philosophical Magazine Letters*, v 453, 1-7 (2016)

32. R.S. Maurya, A. Sahu, T. Laha, Quantitative phase analysis in $Al_{86}Ni_8Y_6$ bulk glassy alloy synthesized by consolidating mechanical alloyed amorphous powder via spark plasma sintering, *Materials & Design*, 93 (2016) 96-103

33. R.S. Maurya, A. Sahu, T. Laha, Effect of consolidation pressure on phase evolution during sintering of mechanically alloyed $Al_{86}Ni_8Y_6$ amorphous powders via spark plasma sintering, *Materials Science & Engineering A*, 649 (2016) 48-56

34. R.S. Maurya, A. Sahu, T. Laha, Microstructural and phase analysis of Al based bulk metallic glass synthesized by mechanically alloying and consecutive spark plasma sintering with varying consolidation pressure, *Advanced Materials Letters*, 7 (2016) 187-191

35. L.K. Singh, A. Maiti, R.S. Maurya, T. Laha, Al Alloy Nanocomposite Reinforced with Physically Functionalized Carbon Nanotubes Synthesized via Spark Plasma Sintering, *Materials & Manufacturing Processes*, 31 (2016) 733-738

36. M. Sribalaji, O.S. Asiq Rahman, T. Laha, A.K. Keshri, Nanoindentation and nanoscratch behavior of electroless deposited nickel-phosphorous coating, *Materials Chemistry and Physics*, v 177, 220-228 (2016)

37. A Maiti, L. Reddy, F. Chen, L. Zhang, J.M. Schoenung, E.J. Lavernia, T. Laha, Carbon Nanotube reinforced Al alloy-based nanocomposites via spark plasma sintering, *Journal of Composite Materials*, 49 (2015)1937–1946

38. R.S. Maurya, T. Laha, Effect of rare earth and transition metal elements on the glass forming ability of mechanical alloyed Al-TM-RE based amorphous alloys, *Journal of Materials Science & Technology,* 31 (2015) 1118-1124

39. A. Banerjee, M. Dutta, S. Bysakh, A.K. Bhowmick, T. Laha, Microstructural evolution in Cu-Sn coating with varying Sn content on steel substrate and its effect on interfacial adhesion, *Surface Coating & Technology*, 262 (2015) 200–209

40. A. Banerjee, M. Dutta, S. Bysakh, A.K. Bhowmick, T. Laha, A novel coating strategy towards improving interfacial adhesion strength of Cu-Sn alloy coated steel with vulcanized rubber, *Applied Surface Science*, 313 (2014) pp 804–816

41. A. Banerjee, M. Dutta, A.K. Bhowmick, T. Laha, Effect of Cu strike coating on adhesion between Cu-Sn coated steel and rubber, Journal of Adhesion Science and Technology, *Journal of Adhesion Science & Technology*, v 28, n 16, 2014, pp. 1610-1628

42. A. Banerjee, M. Dutta, S. Bysakh, A.K. Bhowmick and T. Laha, Role of Sn on the adhesion in Cu-Sn alloy coated steel – rubber interface, *Journal of Adhesion Science & Technology*, v 28, n 11, 2014, pp. 987-100

43. A. Maiti, R.S. Maurya, T. Laha, Synthesis of Physically Functionalized Carbon Nanotube Reinforced Al- Si Nanocomposite by Spark Plasma Sintering, *Materials Science Forum*, v 83-786, 2014, pp. 1542-1547

44. Effect of Sn on the Adhesion between Cu-Sn Alloy Coated Steel and SBR Based Rubber, A. Banerjee, M. Dutta, A.K. Bhowmick and T. Laha, *ISIJ*, v 15, n 3, 2014, pp. 671-676

45. S. Kalmodia, S. Goenka, T. Laha, D. Lahiri, B. Basu, K. Balani, Microstructure, mechanical properties, and in vitro biocompatibility of spark plasma sintered hydroxyapatite–aluminum oxide–carbon nanotube composite, *Mat Sci Eng C*, v 30, n 8, 2010, pp. 1162-1169

46. A. K. Keshri, S. R. Bakshi, Y. Chen, T. Laha, X. Li, C. Levy and A. Agarwal, Nanomechanical behavior of plasma sprayed PZT coating, *Surface Eng*, v 25, 2009, pp. 270-275

47. A.K. Keshri, K. Balani, S.R. Bakshi, V. Singh, T. Laha, S. Seal, A. Agarwal, "Structural Transformation in Carbon Nanotubes during Thermal Spray Processing", *Surface Coatings Tech*, v 203, 2009, pp. 2193–2201

48. T. Laha, Y. Chen, D. Lahiri and A. Agarwal, "Tensile Properties of Carbon Nanotube Reinforced Aluminum Nanocomposite Fabricated by Plasma Spray Forming", *Composites: Part A*, v 40, 2009, pp 589–594

49. T. Laha, Y. Chen, K. Balani and A. Agarwal, "Nanomechanical Properties of Hafnium Nitride Coating" *Scripta Mater*, v 58, 2008, pp. 1121-1124

50. T. Laha and A. Agarwal, "Effect of Sintering on Thermally Sprayed Carbon Nanotube Reinforced Aluminum Nanocomposite", *Mat Sci Eng A*, v 480, 2008, pp. 323-332

51. S. R. Bakshi, K. Balani, T. Laha, J. Tercero and A. Agarwal, "Nanomechanical and Nanoscratch Properties of Multiwalled Carbon Nanotube Reinforced Ultrahigh Molecular Weight Polyethylene Coatings", *JOM*, v 55, 2007, pp. 50-53

52. K. Balani, S. R. Bakshi, Y. Chen, T. Laha and A. Agarwal, "Role of Powder Treatment and CNT Dispersion in the Fracture Toughening of Plasma-Sprayed Aluminum Oxide – Carbon Nanotube Ceramic Nanocomposite", *J Nanosci Nanotech*, v 7, 2007, pp. 3553-3562

53. T. Laha, S. Kuchibhatla, S. Seal, W. Li and A. Agarwal, "Interfacial Phenomena in Thermally Sprayed Al-Based Nanocomposites Reinforced with Carbon Nanotubes", *Acta Mater*, v 55, 2007, pp. 1059-1066

54. T. Laha, Y. Liu and A. Agarwal, "Carbon Nanotube Reinforced Aluminum Nanocomposite via Plasma and High Velocity Oxy-Fuel Spray Forming: A Comparative Analysis", *J Nanosci Nanotech*, v 7, 2007, pp. 515-524

55. K. Balani, R. Anderson, T. Laha, M. Andara, J. Tercero, E. Crumpler, A. Agarwal, "Plasma-sprayed carbon nanotube reinforced hydroxyapatite coatings and their interaction with human osteoblasts in vitro" *Biomater*, v 28, 2007, pp 618-624

56. S.R. Bakshi, T. Laha, K. Balani, A. Agarwal, J. Karthikeyan, "Interfacial Strength of Cold Sprayed Aluminum Coatings", *Surface Eng*, v 23, 2007, pp. 18-22

57. V. Viswanathan, T. Laha, K. Balani, A. Agarwal, S. Seal, "Challenges and advances in nanocomposite processing techniques", *Mat Sci Eng R*, v 54, 2006, pp. 121-285, (IMPACT FACTOR: 17.73)

58. T. Laha, A. Agarwal, Tim McKechnie, S. Seal, "Synthesis of Bulk Nanostructured Aluminum Alloy Component through Vacuum Plasma Spray Technique", *Acta Mater*, v 53, 2005, pp. 5429-5438

59. T. Laha, A. Agarwal, A Comparative Study to Estimate Effective Elastic Modulus of Laser-Engineered Composite Boride Coating, *Adv Eng Mater,* v 7, n 7, 2005, pp. 626-628

60. T. Laha, K. Balani, A. Agarwal, S. Patil, S. Seal, Synthesis of Nanostructured Spherical Aluminum Oxide Powders by Plasma Engineering, *Met Mat Trans A*, v 36A, 2005, pp. 301-309

61. K. Balani, T. Laha, A. Agarwal, J. Karthikeyan, N. Munroe, "Effect of Carrier Gases on Microstructural and Electrochemical Behavior of Cold-Sprayed 1100 Aluminum Coating", *Surface Coatings Tech*, v 195, 2005, pp. 272–279

62. T. Laha, A. Agarwal, Tim McKechnie, S. Seal, “Synthesis and Characterization of Plasma Spray Formed Carbon Nanotube Reinforced Aluminum Composite”, *Mat Sci Eng A*, v 381, 2004, pp. 249–258

63. T. Laha, A. Agarwal and T. McKechnie, “HVOF Forming Nanostructured Hypereutectic via High-Velocity Oxyfuel Spray Deposition”, *JOM*, v 1, 2004, pp. 54-56

64. R. Balasubramaniam, T. Laha and A. Srivastava, “Long Term Corrosion Behaviour of Copper in Soil: A study of archaeological analogues” *Mater Corrosion*, v 55, n 3, 2004, pp. 194-201

65. T. Laha, A. Tewari, R. Balasubramaniam, M.N. Mungole, R.G. Baligidad, Microstructural Evolution in Iron Aluminide Fe-28Al-2C after High-Temperature Hydrogen Treatment, *Met Mat Trans A*, v 35A, n 6, 2004, pp. 1789-1798

66. T. Laha, J. Shankar, R. Balasubramaniam, “Material and Electrochemical Characterization of Ancient Indian OCP period copper”, *Indian J History of Sci*, v 37, n 4, 2002, pp. 321-329

Publications in conference proceedings (09):

1. A. Bhadauria, L.K. Singh, T. Laha, Nanoindentation and nanoscratch properties of graphene nanoplatelets reinforced spark plasma sintered Aluminium based nanocomposite, International Conference on Advances in Materials and Processing Technologies (AMPT 2018), Dublin, Ireland, September 2018

2. A. Kumar, S.K. Nayak, P. Bijalwan, M. Dutta, A. Banerjee, T. Laha, Mechanical and corrosion properties of atmospheric plasma sprayed Fe-based amorphous/nanocrystalline composite coating, (AMPT 2018), Dublin, Ireland, September 2018

3. L.K. Singh, R.S. Maurya, A. Maiti and T. Laha, Al Based Nanocomposites Reinforced with Physically Functionalized Carbon Nanotubes Synthesized via Spark Plasma Sintering, ICMMM 2014, IIT Madras, Chennai, India, August 2014

4. A. Banerjee, M. Dutta and T. Laha, Synthesis of Al-MWCNT Nanocomposites via Spark plasma Sintering, Proccedings of Composites and Nanocomposites, THERMEC 2013, Las Vegas, USA, 201

5. A. Maiti and T. Laha, Role of Sn in Improving the Adhesion between Cu-Sn Alloy Coated Steel and SBR Based Rubber, Proceedings of Advanced Protective Coatings/Surface Engineering, THERMEC 2013, Las Vegas, USA, 2013

6. T. Laha, A. Agarwal and T. McKechnie, Comparative Evaluation of Plasma and High Velocity Oxy-Fuel Spray Formed Carbon Nanotube Reinforced Al-Based Composite, Surface Engineering in Materials, TMS Annual Meeting, San Francisco, USA, 2005, pp. 49-59

7. T. Laha, K. Balani, B. Potens, M. Andara, A. Agarwal, S. Patil and S. Seal, Plasma Engineered Nanostructured Spheres, Surface and Interfaces of Nanostructured Materials and Trends in LIGA, Miniaturization and Nanoscale Materials Conference Proceedings, TMS Annual Meeting, Charlotte, USA, March 2004, pp. 103-112

8. J. Kathikeyan, T. Laha, K. Balani, A. Agarwal and N. Munroe, Microstructural and Electrochemical Characterization of Cold-Sprayed 1100 Aluminum Coating, ITSC 2004: International Thermal Spray Conference 2004: Advances in Technology and Application, Osaka, Japan, 2004

9. T. Laha, R. Balasubramaniam, A. Tewari and M.N. Mungole Electrochemical behavior of Fe-28Al-2C after high temperature hydrogen treatment, Proceedings of International Symposium on Corrosion Science in the 21st Century, UMIST, U.K., July, 2003

Ph.D. Supervision:

Completed: 05

1. Dr. Anway Maity, Synthesis of MWCNT reinforced Al based nanocomposites via spark plasma sintering, Dec 2013
2. Dr. Atanu Banerjee, Improvement of adhesion between bead wire and rubber material inside radial Tires, January 2015
3. Ram S. Maurya, Synthesis of aluminium based bulk metallic glasses via mechanical alloying and spark plasma sintering, June 2017

4. Dr. Lavish K. Singh, Synthesis and evaluation of multi-scale mechanical properties of spark plasma sintered bimodal Al-CNT nanocomposites, September 2019
5. Dr. Alok Bhadauria, Understanding the effect of multi-scale microstructure on mechanical properties of Al-GNP bimodal nanocomposite synthesized via spark plasma sintering, October 2019

Ongoing: 09

1. Wahida R. Ilaham, Effect of Si addition on microstructure, mechanical and oxidation properties of nanostructured oxide dispersion strengthened reduced activation ferritic steel synthesized by spark plasma sintering, Thesis review comments obtained in January 2020
2. Asutosh Sahu, Al based bulk metallic glass nanocomposite, Enrolled in Autumn 2015
3. Anil Kumar, Fe based metallic glass coating by plasma spraying, Enrolled in Autumn 2016
4. Sapan K. Nayak, Corroison mechanism of Fe based metallic glass coating deposited via HVOF spraying, Enrolled in Spring 2017
5. DKV Durga Prasad, Sintering mechanism in BMGNC consolidated via spark plasma sintering, Enrolled in Spring 2019
6. Hrishikesh D. Ghewade, Structure property correlation of Mo-Si-B based intermetallic composites, Enrolled in Spring 2019
7. Perli Monisha, Synthesis of Hybrid nanofertilizers via mechanical milling, Enrolled in Spring 2019
8. Mohammed Nazeer, Mechanical and tribological properties of self-lubricating ceramic matrix composite materials, Enrolled in Spring 2019
9. Md Akif Faridi, Metallic glass coatings, Enrolled in Autumn 2019

Research project details:

Sl. No.	*Title*	*Agency*	*Duration*
1	Synthesis of aluminum alloy based nanocomposite with CNT reinforcement	ISIRD, SRIC, IIT Kharagpur	2010 - 2013
2	Synthesis of multiwalled carbon nanotube reinforced Al alloy based bulk nanocomposites via spark plasma sintering	DST Fast Track, Govt of India	2011 - 2015
3	Synthesis of Al-based BMG composite with improved ductility via mechanical alloying and SPS	DST SERB, Govt of India	2013 - 2016
4	Improvement of adhesion between bead wire and rubber material inside radial tires	Tata Steel, India	2014 - 2017
5	Understanding the effect of crystalline reinforcement in Al-based BMGNCs towards improving ductility and fracture toughness	SGIRG Grant, SRIC, IIT Kharagpur	2014 - 2017
6	Development of corrosion and wear resistant metallic glass coatings on steel substrates	Tata Steel, India	2014 - 2015
7	Setting up high-end testing facilities of materials for biomaterials, aerospace and automotive applications	SGDRI Grant, SRIC, IIT Kharagpur	2016 - 2019
8	Corrosion mechanism in Fe based metallic glass coating deposited via thermal spraying	Tata Steel, India	2016-2018
9	Effect of alloying elements & processing parameters on corrosion and wear mechanism in Fe based metallic glass coating deposited via thermal spraying	Tata Steel, India	2019-2021

Organizational / Administrative Responsibilities:

i. Professor in Charge, Nanoindentation & Nanotribology Lab, CRF, IIT Kharagpur, Since January 2012
ii. Professor in Charge, Spark Plasma Sintering Lab, School of NST, IIT Kharagpur, Since Nov. 2012
iii. Professor in Charge, XRD Lab, Since July 2018
iv. Coordinating Warden, Hall Management Center, IIT Kharagpur, Since January 01 2019
v. Secretary, IIM Khragpur Chapter, Since April 2017: The Chapter has received the "Best Chapter Award" under the small chapter category consecutively for the last three years (2017-19).
vi. Chairman, Purchase Committee, Dept of Met & Mats Engg, Since July 2019
vii. Faculty Advisor, B. Tech Students, Dept of Met & Mats Engg, Since June 2009
viii. Course Coordinator, Intro to Nano Sci & Tech (NT70002), Mod - Met & Mech Engg, School of Nano Science & Technology, Since September 2012
ix. Co-convener, 4th International Conference on Advances in Materials and Materials Processing (icammp-iv), Indian Institute of Technology Kharagpur, November 2016
x. Co-Convenor, Congress Of Metallurgical Professionals invOlving Students, Industry & Teachers (COMPOSIT), IIT Kharagpur, 2009 and 2012
xi. Served in the Organizing Committee (Surface Engineering and Protection) of National Metallurgists' Day – Annual Technical Meeting (NMD-ATM) 2018, Kolkata, November 2018
xii. Publishing and Event Coordinator, 3rd International Conference on Advances in Materials and Materials Processing (icammp-iv), Indian Institute of Technology Kharagpur, December 2011
xiii. Poster Session Coordinator, National Metallurgists' Day – Annual Technical Meeting (NMD-ATM) 2009, Kolkata, November 2009

Membership of Professional Societies:

- The Indian Institute of Metals (IIM): Life Membership
- The Indian Science Congress Association (ISCA): Life Membership
- The Materials Research Society (MRS): Professional Membership
- The Minerals Metals & Materials Society (TMS): Professional Membership
- ASM Thermal Spray Society (TSS): Professional Membership