


Faculty Profile: For University Website

DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

Personal Information	<p>Dr. Arnab S. Bhattacharyya Assistant Professor (Level-12) Department of Metallurgical & Materials Engineering Mobile: 7870674251 Email Id: arnab.bhattacharya@cuja.ac.in Address: Department of Metallurgical and Materials Engineering, Central University of Jharkhand Ranchi. Orcid Id: 0000-0003-4426-9194 Google Scholar: https://scholar.google.co.in/citations?user=QuXvIaEAAA&hl=en</p>	
Brief Profile	<p>Dr. A. S Bhattacharyya is serving as Assistant Professor in Department of Metallurgical and Materials Engineering, Central University of Jharkhand Ranchi since 2011. He has 15 years of experience in teaching and research. He is specialised in nanocomposite hard coatings, functional materials, and device physics. He has more than 50 international journal publications, 8 book chapters and 3 book publications to his credit. He has handled 2 projects with funds from SERB and MHRD. He has supervised 5 PhD students till date.</p>	
Area of Research Interest	<p>Fracture in thin films, Nanocomposite coatings, Computational Materials Science, Functional Materials and Devices</p>	
Educational Qualification:	<ul style="list-style-type: none"> • PhD: Metallurgical and Materials Engineering (CSIR-National Metallurgical Laboratory, Jamshedpur-Degree awarded by Jadavpur University, Kolkata) • M.Tech (Materials Engineering): Bengal Eng & Sc. Univ (IEST Shibpur) • M.Sc (Physics): University of Calcutta 	
Courses Taught:	<ul style="list-style-type: none"> • Engineering Mathematics • Concepts in Theoretical Physics • Numerical Techniques Modelling and Simulations, • Computational Nanoscience • Materials Science, • Advanced Functional Materials and Devices • Modern Microscopic Techniques, • Nanophotonics • Photonic Material and Devices • Surface Engineering and thin films 	

	<ul style="list-style-type: none"> • Mathematical Physics • Statistical Mechanics • Spectroscopic Techniques • Characterization of Nanomaterials Laboratory • Mathematics for Chemistry • Computational Nanoscience Laboratory • Mechanical Properties of Materials • Structural Characterization Laboratory • Materials Thermodynamics and Kinetics • Metallography (Laboratory) • Materials Testing (Skill development) • Physical Metallurgy and heat treatment • Mechanical Metallurgy (Laboratory) • Transport Phenomena • Heat Treatment Laboratory • Self-Assembly and Molecular Engineering • Numerical Techniques Modelling and Simulations
Additional role/ responsibility:	<ul style="list-style-type: none"> • Member, Board of Studies, and School Board (Eng & Tech) • Member, Departmental Academic Purchase Committee • Member, Departmental Admission Committee • Member, Departmental Research Committee • Warden, Boys Hostel • Member, Alumni Committee (Departmental Representative) • Member, Pradhan Mantri TB Mukta Bharat Abhiyaan • Member, Centre of Excellence in Green and Efficient Energy Technology
Articles Published (selected)	<ul style="list-style-type: none"> • A.S. Bhattacharyya, Soft g-C₃N₄ phases in amorphous CN_x coatings, <i>Chemical Physics Impact</i>, 2024, 100551. • Abhay K. Rajak, Ritambhara Dash, Ashwini Kumari, A.S. Bhattacharyya, Sensitivity in nanomechanical pedestal MEMS cantilever, <i>Materials Today Communications</i>, Volume 38, 2024, 107891. • Usharani, N., Kumar, R.P., Bhattacharyya, A.S. <i>et al.</i> Coagulation and crystallinity in Sn (II, IV) oxide as an electron transfer layer. <i>MRS Advances</i> (2024). https://doi.org/10.1557/s43580-024-00801-8. • A. S. Bhattacharyya, Fracture in CN_x coatings: manifestation of crack induced strain hardening in plastic flow, <i>Fatigue & Fracture of Engineering Materials & Structures</i>, (2024) https://doi.org/10.1111/ffe.14198. • R. Dash, K. Bhattacharyya, A S. Bhattacharyya, Synergistic fractural features observed in Ti-B-Si-C hard coatings on enhancing the sharpness of nano indenters, <i>Int J. Ref Met & Hard Mater</i>, 116, 2023 106373.

Projects	<ul style="list-style-type: none"> • Plasma surface modifications of Bismaleimide coatings on aluminum sheets, SERB (2012-15), 7.1 Lacs • Centre for Excellence on Green Energy and Efficient Technology, MHRD. (2015-21), 250 Lacs.
Program Organized	<ul style="list-style-type: none"> • Organizing Secretary, International Conference on Green and Efficient Energy Technology and Materials (GEETAM), 2019. • Organizing Member, CM Days, 2021. • Organizing Member, AICTE (ATAL) program on 3D printing, 2020. • Organizing Member, Seminar cum Brain Storming sessional on Energy Storage, 2023. • Organizing Member, Salva Tagore, 2011.
PhD supervision	<p>PhD awarded-04, Ongoing PhD-01</p> <p>PhD awarded student:</p> <ul style="list-style-type: none"> • Name of the student: Dr. Parameshwar Kommu PhD thesis title: Synthesis and Characterization of anode Materials for Lithium-ion Batteries. Year of PhD award: 2018. • Name of the student: Dr. Ramagiri Praveen Kumar PhD thesis title: Computational studies of sputtered thin films and Nanoindentation. Year of PhD award: 2019. • Name of the student: Dr. Soumita Jana PhD thesis title: Synthesis of Graphene-based Metal oxide Nanocomposites for Supercapacitor Applications. Year of PhD award: 2019. • Name of the student: Dr. Kumar Gaura PhD thesis title: Synthesis and Thermo photoactivity Analysis of Nanostructured Tungsten Oxide and its Composites. Year of PhD award: 2023.
Any other information:	<ul style="list-style-type: none"> • Membership – Institute of Engineers, India • Membership -Indian Association of Physics teachers • Membership -Asian Polymeric Association • Received CSIR-Senior Research fellow fellowship during PhD
Updated as on	09 th April 2024

