DR. SUSHOVAN CHATTERJEE

Associate Professor and Head of the Department of Mechanical Engineering,
Cooch Behar Government Engineering College (under Department of Higher Education, Govt. of West Bengal), Cooch Behar-736170, West Bengal, India

Contact No: +91-9707545561 **e-mail:** sushovan.chatterjee@cgec.org.in

BME (Hons.) (Jadavpur University), MME (Jadavpur University), PhD (IIT Guwahati), CEng (India), MIE (India), WBGS

Brief biographical sketch:

Born in south Kolkata, completed schooling from Ramakrishna Mission Vidyalaya, Narendrapur, done graduation [Bachelor of Mechanical Engineering (with Honours)] and post-graduation [Master of Mechanical Engineering (with specialization in Applied Mechanics)] both from Jadavpur University, Kolkata; and subsequently PhD in Energy from Centre for Energy, Indian Institute of Technology Guwahati. He is significantly involved in active interdisciplinary research in versatile domain since the last fifteen years.

Dr. Chatterjee is currently working as Associate Professor and Head of the Department of Mechanical Engineering, Cooch Behar Government Engineering College, under Department of Higher Education, Government of West Bengal, since December 2016. He is dynamically contributing towards academic, research, and administrative accomplishment.

Accolades:

- Honoured for the best presentation in International conference on 'Biofuel Vision 2015' at Engineering College Bikaner, Rajasthan on October 15, 2006.
- Awarded National prizes and certificates of merit under national scholarship scheme for securing high marks for both during secondary (madhyamik) as well as higher secondary examinations from Government of West Bengal.
- Honoured for the best presentation in Design Section of Technical Session in 'National conference on Emerging Trends in Mechanical Engineering' at Maharashtra Institute of Technology, Aurangabad (March 2009).
- Chartered Engineer (India), Corporate Member of The Institute of Engineers (India), Membership no. M-1570638.

Professional Experiences: (in reverse chronological order)

Designation	Employer	Duration
Associate Professor of Mechanical Engineering, Cooch Behar Government Engineering College	Department of Higher Education, Government of West Bengal	Since December 2016 to till date
Assistant Professor of Mechanical Engineering	National Institute of Technology Silchar, Assam	July 2008 to December 2016
Lecturer of Mechanical Engineering, SRSV Suri, Birbhum, West Bengal	Department of Technical Education and Training, Government of West Bengal	December 2007 to July 2008
Technical Assistant, Department of Applied Mechanics and Drawing	Bengal Engineering and Science University Shibpur (Currently IIEST Shibpur), Howrah, West Bengal	February 2004 to July 2005
Lecturer of Mechanical Engineering	B.P. Poddar Institute of Management and Technology	July 2003 to November 2003
Drawing Instructor	RCC Institute of Information Technology, Kolkata	September 1999 to July 2003
Apprenticeship Trainee, in quality management at Incoming Inspection Section.	Siemens Limited, Joka Works, Calcutta	October 1997 to December 1998

Research Accomplishments:

Sponsored Research Project completed:

Title of the Project: Development of an enzymatic process for production of microalgaeal biodiesel. (Project no. 8023/RID/RPS-27(POLICY-III)(NER)11-12), **Role:** Principal Investigator, **Funding Agency:** All India Council for Technical Education (AICTE), **Period:** April 2012 to September 2014, **Amount sanctioned:** Rs 10,40,000/-

Selected Publications:

In book chapter:

"Purification, immobilization and application of a Pseudomonas lipase for transesterification of lipid", Chapter 4, pp. 33-42. In: "Biodiesel Production Technologies". 1st ed. Jaipur, Pointer publishers. (2007) ISBN: 978- 81-7132-517-7.

In Journals:

1. "Computational fluid dynamic analysis of the exhaust gas flow through absorptive and reactive mufflers: some case studies", *Proc. IMechE Part D: Journal of Automobile Engineering* (2017), 231(11):1568-1588. DOI: 10.1177/0954407016676230
2. "Acoustic performance and modal analysis for the muffler of a four-stroke three-cylinder inline spark ignition engine", International *Journal of Simulation and Process Modelling* (2021), 16(3):247-255. DOI: *10.1504/IJSPM.2021.117335*
3. "CFD analysis on hydrodynamic conditions of a designed spiral column photobioreactor for cultivation of microalgae", *World Journal of Engineering* (2017), 14(5):443-450. DOI: *10.1108/WJE-10-2016-0105*
4. "Extraction of a cardanol based liquid bio-fuel from waste natural resource and decarboxylation using a silver-based catalyst", *Renewable and Sustainable Energy Reviews* (2017), 72:560–564. DOI: *10.1016/j.rser.2017.01.035*
5. "Evaluation of bend curvature of superheater tube using CFD analysis", *World Journal of Engineering* (2021), 18(3):497-504. DOI: 10.1108/WJE-06-2020-0219
6. "Structural analysis for exhaust gas flow through an elliptical chamber muffler under static and dynamic loading condition", *Advances in Modelling and Analysis B* (2018), 61(2): 92-98. DOI: 10.18280/ama_b.610207
7. "CFD analysis on an elliptical chamber muffler of a C.I. engine", *International Journal of Heat and Technology* (2019), 37(2): 613-619. DOI: *10.18280/ijht.370232*
8. "Simulation of Hydrodynamic Conditions of a Photo-bioreactor for Microalgae Cultivation", *Applied Mechanics and Materials* (2014), 592-594: 2427-2431. DOI: 10.4028/www.scientific.net/AMM.592-594.2427
9. "A comparative analysis on two gear tooth materials for low speed and high torque transmission", *Advances in Modelling and Analysis C* (2018), 73(3): 79-83. DOI: *10.18280/ama_c.730301*
10. "Degradation of Aerodynamic performances of two typical Aerofoils under Heavy Rain: A Comparative Case Study Using CFD

Simulation", *European Journal of Electrical Engineering* (2018), 20(3): 325-332. DOI: *10.3166/ejee.20.325-332*

11. "Analysis on stress concentration to predict elastic follow-up condition for two typical power piping configurations using ANSYS software", *World Journal of Modelling and Simulation* (2018), 14(3): 174-180. http://www.wjms.org.uk/wjmsvol14no03paper02.pdf
12. "Silk-fiber immobilized lipase-catalyzed hydrolysis of emulsified sunflower oil', *Applied Biochemistry & Biotechnology* (2009), 157(3): 593-600. DOI: 10.1007/s12010-008-8405-y
13. "Zinc oxide supported silver nanoparticles as a heterogeneous catalyst for production of biodiesel from palm oil", *Environmental Progress & Sustainable Energy* (2020), 39(3): e13369. DOI: *10.1002/ep.13369*
14. "Thermo-Hydraulic Performance of Rectangular Channel Roughened with Combined Semi-circular and Triangular Ribs", *Heat and Mass Transfer* (2019), 55(10):2889-2900. DOI: 10.1007/s00231-019-02630-0
15. "Silk-cocoon matrix immobilized lipase catalyzed transesterification of sunflower oil for production of biodiesel", *Journal of Catalysts* (2014), Volume 2014, Article ID 868535. DOI: *10.1155/2014/868535*
16. "Effect of thermal treatment on the physico-chemical properties of bioactive hydroxyapatite derived from caprine bone bio-waste", *Ceramics International* (2019), 45(17B): 23265-23277. DOI: 10.1016/j.ceramint.2019.08.023
17. "Characterization of mechanical and micro-architectural properties of porous hydroxyapatite bone scaffold using green micro algae as binder", *Arabian Journal for Science and Engineering* (2019), 44(9):7707-7722. DOI: 10.1007/s13369-019-03877-9
18. "Effect of ZnO reinforcement on the compressive properties, in vitro bioactivity, biodegradability and cytocompatibility of bone scaffold developed from bovine bone-derived HAp and PMMA", *Ceramics International* (2019), 45(16):20331-20345. DOI: 10.1016/j.ceramint.2019.07.006
19. "Effect of dual pre-treatment on mechanical, morphological, electrical and thermal properties of rubber seed shell reinforced epoxy composites", *Arabian Journal for Science and Engineering* (2019), 44(2): 845–856. DOI: 10.1007/s13369-018-3302-3
20. "Transesterification of soybean oil at room temperature using biowaste as catalyst; an experimental investigation on the effect of co-solvent on biodiesel yield", *Renewable Energy* (2020), 162: 98-111. DOI: 10.1016/j.renene.2020.08.011
21. "Taming waste: Waste Mangifera indica peel as a sustainable catalyst for biodiesel production at room temperature", *Renewable Energy* (2020), 161: 207-220. DOI: 10.1016/j.renene.2020.07.061
22. "Effect of Reinforcements on Polymer Matrix Biocomposites -An Overview", *Science and Engineering of Composite Materials*, (2018), 25(6):1039-1058. DOI: 10.1515/secm-2017-0281
23. "Waste snail shell derived heterogeneous catalyst for biodiesel production by the transesterification of soybean oil", *RSC Advance*, (2018), 8(36): 20131-20142. DOI: 10.1039/C8RA02397B
24. "Recent Inventions in Biodiesel Production and Processing- A Review', *Journal of Recent Patent on Engineering* (2008), 2: 47-58. DOI: 10.2174/187221208783478552
25. Numerical Investigation on Friction Factor Characteristics for Protruded Channel under Turbulent Cross-Flow Condition", *International Journal of Engineering and Advanced Technology* (2018), 8(2C2): 69-73.

In conference proceedings:

1. "Analysis of Design and Material Selection of a Spur gear pair for Solar Tracking Application", Materials Today Proceedings (2018), 5(1): 789-795. DOI: *10.1016/j.matpr.2017.11.148*
2. "Numerical investigation of thermal-hydraulic performance of channel with protrusions by turbulent cross flow jet", AIP Conference Proceedings (2018), 1966(1):020021. DOI: *10.1063/1.5038700*
3. "Effect of Pre-treatment and Calcination Process on Micro-Structural and Physico-Chemical Properties of Hydroxyapatite derived from Chicken Bone Bio-waste", Materials Today Proceedings (2019), 15(2): 188-198. DOI: *10.1016/j.matpr.2019.04.191*
4. "Characterization of hydroxyapatite derived from eggshells for medical implants", Materials Today Proceedings (2019), 15(2): 323-327. DOI: *10.1016/j.matpr.2019.05.012*
5. "Mechanical and Morphological Characterization of Walnut Shell Reinforced Epoxy Composite", IOP Conf. Series: Materials Science and Engineering (2018), 377(1): 012011. DOI: *10.1088/1757-899X/377/1/012011*

Some other papers and presentations in various conferences, seminars etc.:

At International level

1. Presented paper "Facile synthesis and characterization of silver support zinc oxide nano particles" in '24th Annual International Conference on Composites and Nano Engineering', held at Haikou, Hainan Island, China, during 17-23 July 2016.
2. **Honoured for the best presentation** in International conference on 'Biofuel Vision 2015' for presenting paper "Purification, immobilization and application of a Pseudomonas lipase for transesterification of lipid for production of biodiesel from vegetable oil" at Engineering College Bikaner on October 15, 2006. (This news appeared in newspaper 'The Hindu' October 16, 2006; page 3).
3. Presented paper "Breathing crack in beam and cantilever using contact model dynamic analysis -a study" in 'International Conference on Wisdom Computing and Communications (WCAC 2011)' on November 17, 2011, at Kuala Lumpur, Malaysia. This presented paper was further published in the journal '**International Journal of Wisdom Based Computing**' **(2011), 1(3): 39-42**.
4. Presented paper "Crack Propagation Study in Some Model Engineering Structures using CATIA Software" in International Conference in Mechanical, Electrical and Computer Engineering, held at Bangkok during 24-26th March 2013.
5. Presented paper "Biocatalysis- an eco-friendly alternative for future biodiesel industries" in 'International Conference on Biomass for Biofuels and Value Added Products (ICBBVAP 2012)' on 23rd October 2012 at Kuala Lumpur, Malaysia.
6. Presented paper "Simulation of Hydrodynamic Conditions of a Photo-bioreactor for Microalgae Cultivation" in 'International Mechanical Engineering Congress 2014', held at National Institute of Technology Trichy, during June 13-15, 2014. This presented paper was further shortlisted for publication in the journal **'Applied Mechanics and Materials' (2014), 592-594: 2427-2431**.
7. Presented paper "Analysis of Design and Material Selection of a Spur gear pair for Solar Tracking Application" in 'International Conference on Processing of Materials, Minerals and Energy' held at Ongole, Andhra Pradesh, India during July 29– 30, 2016. This presented paper was later published in **Materials Today Proceedings (2018), 5(1): 789-795**.
8. Presented paper "Viability study of cashew nut shell as a feedstock for biodiesel" in 'International Conference on Green Technology for Environmental Pollution Prevention and Control' held at National Institute of Technology Tiruchirappalli, on 29 September, 2014.
9. Presented paper "Application of PCMs in a CSP Plant for Thermal Energy Storage: A Review on Recent Developments" at 'International Conference on Recent Development on Materials, Reliability, Safety and Environmental Issues', organized by Dr B R Ambedkar National Institute of Technology Jalandhar on 27th June 2021. Another paper "Burr Formation Minimization in Drilling

using ANOVA Analysis" was presented by B.Tech. final year student Mr. Suman Das in the same conference on 26th June 2021.

10. Two papers appeared in the proceedings of 'International Conference on Recent Trends in Engineering and Material Sciences' held during 17-19 March 2016 at Jaipur National University (JNU), Jaipur, Rajasthan. One in oral session presented by self and the other in poster session presented by M. Tech. scholar Ms Sweta Baruah.
11. Paper "CFD analysis of hydrodynamic condition of designed spiral column photobioreactors for cultivation of microalgae" was adjudicated for **the best paper award** in International conference on 'Contemporary Challenges in Management, Technology & Social Sciences' held during April 05-06, 2014 at MGIMT, Lucknow. This paper was presented in oral session by M. Tech. scholar Mr Sanjoy Paul. This full paper from this conference was further selected for publication as a chapter in "**Handbook of Management, Technology and Social Sciences**" **ISBN - 978-81-928926-3-4, pp. 166-174.** http://semsindia.org/publication/conference-book.
12. Paper "Application of optimization techniques in bio-diesel processing" was published in the proceedings of 'International Conference on Sustainable Manufacturing and Operations Management' held during June 26-28, 2013 at University of Mauritius, Reduit, Mauritius, **pp. 212-215**. https://issuu.com/giapindia/docs/isom_2013_proceedings__giap_journal/238
13. "Crack Propagation and Fracture analysis in engineering structure by generative part structural analysis", *International Journal of Current Research*, (2014), 6(06): 7032-7037.
14. "Multi Criteria Decision Making Methods Applied in Waste Water Treatment: A Review", *International Journal of Research Publication and Reviews* (2021): 2(1):32-41.
15. "Risk Priority Number (RPN) assessment in design failure modes and effective analysis for the Automobile Plant using factor analysis". *I. J. Mech. Eng.* (2021), 3: 20-24. DOI: 10.36811/ijme.2021.110006
16. "Numerical Scrutiny on Friction Factor Characteristics for Protruded Channel under Turbulent Cross-Flow Condition", *International Journal of Innovative Technology and Exploring Engineering* (2019), 8(6S4): 146-150.
17. "Experimental and FEA Analysis of Dynamic Characteristics of Cantilever Beam Influenced by Crack", *Journal of Material Science and Mechanical Engineering* (2017), 4(2): 88-92.
18. "A Review on Vibration analysis and Identification of Crack in Cantilever Beam", *Journal of Material Science and Mechanical Engineering* (2017), 4(2): 93-97.
19. "A Review on Aerodynamics of Flight in Adverse Condition", *Journal of Aeronautical and Automotive Engineering* (2016), 3(1): 38-42.
20. Presented following four papers at 'International Conference on Recent Trends in Engineering, Science & Management' on 15th March 2015 at Jawaharlal Nehru University (JNU Convention Center), New Delhi.
    - ✓ 'Effect of pressure angle of spur gears on bending and contact stresses: a comparative study using finite element software'
    - ✓ 'Optimization of the solvent extraction rate and extraction efficiency considering flow rate, heating rate, and solvent concentration'
    - ✓ 'Structural analysis of the exhaust gas silencer for the flow through perforated and non-perforated silencer'
    - ✓ 'Finite element based computational study for assessment of elastic follow-up in autoclave pressure vessel'

    All these above four papers were further published in a special issue of '**International Journal of Advance Research in Science and Engineering' [2015: 4(01), pp. 517-546]**.

At National/State/regional level:

1. Presented paper 'Occasional Loads on Pipes' in 12th National Conference on Machines and Mechanism (NaCoMM) held at IIT Guwahati (December 2005).
2. **Honored for the best presentation** in Design Section of Technical Session in National conference on Emerging Trends in Mechanical Engineering (ETME 2009) at Maharashtra Institute of Technology (MIT) Aurangabad for presenting paper 'Overview of some occasional loads on industrial pipelines-some studies' (March 2009).
3. Presented paper 'Viability study of microbial lipid as an alternative fuel in Diesel engine' in 1st Students Chemical Engineering Congress (SCHEMCON) held at IIT Guwahati (December 2005).
4. Presented paper 'Some aspects of biodiesel production from Jatropha oil by lipase catalysed transesterification' in 22nd National Convention of Mechanical Engineers held at Assam State Centre of The Institute of Engineers (India), Guwahati (September 2006).
5. Presented paper 'Effect of Seismic and Other Occasional Loads on Industrial Pipelines' in National Seminar on Earthquake Hazard and Disaster Management of North-Eastern States of India held at NIT Silchar (October 2008).
6. Presented paper 'Two different roles of lipase in multi-step biodiesel processing: Newer challenges in immobilization methodologies' in National conference on Emerging Trends in Mechanical Engineering at, MIT Aurangabad (March 2009).
7. Presented paper entitled 'Design of a bench-scale Bio-catalytic Transesterification set-up- a preview' in National Conference on Emerging Trends in Mechanical Engineering held at G.H. Patel College of Engineering and Technology, Vallabh Vidyanagar, Gujarat (March 2009).
8. Presented four papers in 12th West Bengal Science and Technology Congress, February 2005. (Held at West Bengal University of Technology, Saltlake, Kolkata).
9. Presented a paper entitled "Viability of Microbial Lipid as an alternative fuel for C.I. engine" in 13th West Bengal Science and Technology Congress, March 2006. (Held at Ballygaunge Science College, Kolkata).
10. On 19th March 2021 presented a paper entitled "The Influence of Ancient Educational System on India's Educational Strategy" in technical session of AISTEM 2021 (conducted by National Institute of Technical Teachers' Training and Research Kolkata).

Patents filed:

- Development of composite material from biodegradable Cashew nut shell (Anacardium occidentale). Patent Application Number: 201731007338. Current Status: Examination awaited.
- Development of composite bone scaffold using hydroxyapatite derived from Caprine bone bio-waste and Polylactic-co-glycolic acid (PLGA). Patent Application Number: 201931010903. Current Status: Examination awaited.
- Development of composite material from oil extracted and alkali treated Cashewnut shells (Anacardium occidentale). Patent Application Number: 201731007337. Current Status: Examination awaited.

Honorary editorial assignments:

- Editorial board member of Fluid Dynamics & Materials Processing, Tech Science Press.
- Editorial board member of International Journal of Automobiles and Automobile Technologies.
- Associate Editor of International Journal of Applied Research in Mechanical Engineering.

Journal paper reviewed: Renewable & Sustainable Energy Reviews (Elsevier), Heat and Mass Transfer (Springer), etc.

Project reviewed: Central Power Research Institute (CPRI)

Chairing technical session at international conference:

— Chaired a technical session at 1st International Conference on Thermal Engineering and Management Advances (ICTEMA2020) organised by Jalpaiguri Govt. Engineering College during December19-20, 2020.

— Chaired two technical sessions at "International Conference on Recent Trends in Engineering and Material Sciences" held during 17th -19th March 2016 at Jaipur National University (JNU), Jaipur, India.

— Chaired a technical session at International Conference on Advanced Research in Mechanical Engineering (ICRME) held at Bangkok, Thailand held during March 23-26, 2013.

Invited talks/lectures delivered:

- On 2**8th July 2021**, delivered an invited speech on "Geometrical modelling for virtual simulation on automotive silencers" in a webinar organized by Modern Institute of Engineering & Technology, Hoogly, West Bengal.
- On **8th March 2021**, delivered an invited speech in an international webinar on "Recent Advancements in Mechanical Engineering" organized by Department of Mechanical Engineering of Swami Vivekananda University (SVU), Kolkata,West Bengal.
- On **4th March 2021**, delivered an online invited speech on "Etiquettes of some biofuels" in a webinar organized by Abacus Institute of Engineering and Management, Hoogly, West Bengal.
- On **9th August 2020**, delivered an invited talk in an international webinar on "Effect of global pandemic in our professional life and possible steps to overcome them" conducted by Siliguri Institute of Technology, West Bengal.
- On **29th February 2020**, delivered an invited lecture entitled "Renewable Technology used for rural infrastructure development" in a 4-days refresher training for Nirman Sahayaks, organized by Civil Engineering Department of Cooch Behar Government Engineering College.
- On **8th February 2020**, delivered two invited lectures in UGC sponsored workshop on 'MOOCS, e-content development and open educational resources' conducted by the UGC Human Resource Development Centre, University of North Bengal.
- On **26th March 2016**, delivered an invited lecture entitled "Prospective novel green means for synthesis and application potentialities of future generation biofuels: technological and environmental challenges" in a short term course 'Recent Advances in Chemical Science and Technology' organized by Chemistry Department of NIT Silchar.

Short Term Course/Workshop/Webinar Organized/Coordinated:

Duration	Program	Sponsored by	Role/Functionality
19-23 June 2021	Five-days national Webinar on "Rheological behaviour of fluid flow and energy transfer"	Self	Convenor
16 June 2021	One-day workshop on "Spark Erosion Machining and its experimental demonstration"		
November 1-13, 2020*	Two-week National Webinar on "Recent Advancements on Mechanical Engineering"	Self	Convenor cum Coordinator
March 15-17, 2018*	Three days' workshop on "Technological Advancement on Joining of Materials"	Cooch Behar Govt. Engineering College	
March 18-22, 2019	ICT based STC on "Computer Aided Design & Manufacturing"	NITTTR Chandigarh	Local Coordinator at Cooch Behar Government Engineering College
March 11-15, 2019	ICT based short term course on "CAD using SOLIDWORKS"		
February 11-15, 2019	ICT based short term course on "Green Manufacturing"		
March 12-16, 2018	In-house training on "Advancement on Joining of Materials: Welding and Allied Technologies"	NITTTR Kolkata	
August 6-10, 2018	ICT mode STTP on "Arc Welding Processes & Physics of Welding"		
August 13-18, 2018	In-house training on "Principles & Practices of Management"		
January 16-18, 2015	Workshop on "Reliability Theory and its Applications to Real Life Problems"	Central SQC Unit, ISI Kolkata	Organizing Co-Coordinator
August 14-18, 2014	Workshop on "Basic Statistics Using Software"	Applied Statistics Unit, ISI Kolkata	Local Organizer at NIT Silchar
November 26-December 6, 2013	ISTE workshop on "Engineering Mechanics" under the project "National Mission on Education through ICT"	Indian Institute of Technology Bombay	Workshop-Coordinator at NIT Silchar RC

- *These programs were highlighted in regional newspapers 'Uttarbanga Sambad' and 'Ajjkaal'

Some additional involvements/exposures/training:

- During June 2000 to July 2005, worked as honorary part-time faculty at Ramakrishna Mission Junior Technical School, Narendrapur, Kolkata. During this period, conducted class lectures of Basic Trade Theory, Workshop Calculation and Science and Special Trade Theory classes of Higher Secondary Vocational Stream and Technical Trade Courses.
- During January 1999 to August 1999, trained at Mechanical Technology Control Cell, Development Consultant Limited, Park Street, Kolkata. During this period, gained some practical exposures on preparation and rectification of piping layout, P&I diagram, G.A. Drawing, etc.

Administrative responsibilities executed:

At Cooch Behar Government Engineering College: Head of Department of Mechanical Engineering, Coordinator of Anti-ragging squad, Coordinator of Orientation/Induction Program 2019 and 2020, Member of Academic and Technical Committee.
At NIT Silchar: Associate warden, New PG Hostel (February 2015 to November 2016), Member Secretary DPPC (Departmental Post Graduate Program Committee) (September 2012 to December 2016). B.Tech. Faculty advisor. Time-table coordinator of Mechanical Engineering Department (2008 to 2015). Founder-faculty coordinator SAE BAJA student's project during 2011-2016. Member of DUPC and DPMC of Mechanical Engineering Department till November 2016.

Courses/trainings/workshops/conference/FDP/STTP attended only as participant:

Course/Program Detail	Duration	Organizer
AICTE and UGC endorsed Online FDP on "Digital Tools for Writing, Authoring and Reviewing Manuscripts"	July 12-23, 2021	EICT academies of some institutes
ATAL-AICTE Online FDP on 'Alternative Fuels'	February 8-12, 2021	A.D. Patel Institute of Technology, Gujarat
ATAL-AICTE Online FDP on 'Capacity Building: Research Methods and Effective Teaching Methodology'	December 14-18, 2020	NIT Patna
12 week online certification course (Conducted by IIT Kanpur) on 'Engineering Metrology' (**honoured with 'Elite Silver' certification** ranked within first 2% topper among 875 successful candidates)	July-October 2019 (equivalent to one and half week FDP in accordance with AICTE)	Ministry of H.R.D., Govt. of India under National Programme on Technology Enhanced Learning (NPTEL)
12 week online certification course (Conducted by IIT Guwahati) on 'IC Engines and Gas Turbine' (**honoured with 'Elite Silver' certification**, ranked within first 2% topper among 1557 successful candidates)	January-April 2019 (equivalent to one and half week FDP in accordance with AICTE)	
Two-Weeks AICTE sponsored Faculty Development Programme on 'Recent Development and Challenges in Materials and Manufacturing Process'	January 1-13, 2018	Bangalore Institute of Technology
Two weeks Refresher Course on 'Computer Aided Design' (Obtained Grade A)	December 2002-January 2003	Jadavpur University
One week workshop cum training course on 'Cryogenic Engineering and cryo-instrumentation' (conducted by Advanced Centre for Cryogenic Research)	November 13-18, 2000	
FDP for Engineering College Teachers of North-Eastern Region	April 26-May 8, 2010	National Institute of Technical Teachers' Training and Research (NITTTR) Kolkata
Two weeks short term training programme on 'Mechanical Workshop'	June 10-21, 2019	
STTP on 'Concept Teaching on Engineering Mechanics'	October 22-November 2, 2018	
Two weeks short term training programme on 'Mechanical Testing of Materials'	July 2-13, 2018	
STTP on 'Renewable Energy sources and emerging Technologies'	December 18-22, 2017	
ICT mode STTP on 'Modern Office Management'	October 19- 23, 2020	
ICT mode STTP on 'AutoCAD for Engineers'	December 28, 2020 to January 1, 2021	
ICT Mode STTP on 'Three dimensional modelling with AUTOCAD and SOLIWORKS'	January 4-8, 2021	
Workshop on 'Promise and Challenges of Biodiesel as Sustainable fuel for Future Use'	February 19- 21, 2015	IIT Madras
Two week Summer course on Fluid Dynamics & Its Applications	July7-19, 2008	NIT Silchar
FDP on 'Pedagogy: A Framework for Effective Teaching and Learning Strategies'	May 7-11, 2014	
One week short term course on Failure Analysis of Engineering Materials	September 23- 27, 2013	
STTP on 'Recents in evolutionary optimization techniques and applications'	June1-7, 2012	
STC on 'Applications of Statistics in Engineering, Management and Applied Sciences'	October 11-15, 2012	
One week ISTE Workshop on 'Engineering Mechanics'	September 16-20, 2013	IIT Bombay
One week short term training program on 'CFD and its application'	July 2-6, 2013	MNNIT Allahabad
18th National and 7th ISHMT-ASME Heat & Mass Transfer Conference	January 4-6, 2006	IIT Guwahati
One-week short term course on 'Hydrogen Fuel and its Applications'	September 15-19, 2008	
One-week short term course on 'Fuel Cell and Hydrogen Technology'	September 14-18, 2009	
One-week short term course on 'Mechanical Engineering Education'	December 7-11, 2009	
One-week short term course on 'Recent trends in fuels and combustion'	August 29- September 2, 2011	
Practical Training on different operations in lathe and lathe tool grinding	November 5- December 2, 1996	Don-Bosco Technical Training Institute, Calcutta
Computer Aided Design using Auto-CAD and Auto-LISP	September 25 1997- January 29, 1998	Regional Computer Centre, Calcutta

Student's guidance:

B.Tech. final year project supervision/joint-supervision/co-supervision: (19 completed)

Year	Title of the completed project	Name of the students in the project group
2012	Crack Propagation and Fracture Analysis in Engineering Structure by Generative Part Structural Analysis	Bidyot Doley, Bhrigu Thakuria, Ashok Kumar, T. Mangliandinga, S. Paominlian Simte
2013	CFD analysis of exhaust gas flow through muffler	Janardan Das, Rakesh Kalita, Rupam Das, Souvik Roy, Zorema Chawngthu
2014	Viability Study of Extraction of Biodiesel from waste Biomass (Cashew nut Shell)	Abhijit Gogoi, Purnyajit Bezbaruah, Deepjyoti Rabha, Rajib Sutradhar, Rakesh Shah
	Acoustic performance and modal analysis for the muffler of a 4-stroke 3-cylinder inline engine	Ankush Ganguly, Sayan Paul, Soumya Chakraborty, Amitava Roy, Sushanta Das
2015	Development of an experimental investigation facility for the characterization and production of biofuels using indigenous biomass	Mrinmoy Rajkhowa, Sushil Toshniwal, Anupam Dutta, Bhanita Das, Suman Pathak
2016	Estimation of instantaneous efficiency/transient response for solar flat plate collector for Silchar locality	Arijeet Roy, Nabarun Dey, Samrat Roy, Bikram Das, Joydeep Biswas
2017	Feasibility study of a portable manual compression refrigeration system	Abhik Deb, Himangshu Kalita, Saidul Islam
2021	Analytical study on the kinematics of a 360 degree rotating vehicle	Pintu Gorai, Sumon Sardar
	A comparative analysis on material selection for a typical automotive connecting rod using finite element simulation	Subrata Mondal, Sagar Kumar Sah, Soumadeb Routh
	Analysis and parametric optimization on the effect of weldability material through GMAW using Newton's forward interpolation	Animesh Dey, Sourav Dalal Chowdhury, Sourav Kar
	Modelling the fluid flow displacement in a surface tension driven capillary tube	Partha Kumbhakar, Dhrubajyoti Das, Suman Dutta
	Reviews on some fundamental strategies for reduction of pollution and wastes from thermal power plant	Sabbiul Hasan, Soumen Badyakar, Ramesh Mahato, Dalim Shaikh
	A proposed strategy to utilize green-house gases from a heavy duty BS6 engine	Gourab Poddar, Pritam Ghosh, Sukalyan Roy

M. Tech. final year dissertation supervision/joint-supervision/co-supervision: (14 completed)

Year	Title of the completed dissertation	Scholar's name
2013	Optimization of Some Process Parameters of transesterification for Production of Biodiesel from Vegetable oil using soft computing technique	Anindita Sengupta
	Stress analysis of Typical Process Piping using ANSYS	Nasir Hasan Sk
	CFD analysis for Fluid Flow and Heat Transfer on Some Hollow Cylindrical Components in thermal Power Plant	Subhasish Das
2014	CFD Analysis on Hydrodynamic Conditions of Designed Spiral Column Photobioreactors for Cultivation of Microalgae	Sanjay Paul
	Isolation and Characterization of biodiesel from indigenous biomass	Alok Patra
2015	Finite Element based Computational study for assessment on Elastic follow-up in pressure vessel and pipeline	Phool Singh Dinakar
	Geometrical modelling and finite element based computational study on a suitable spur gear system for a single axis indigenous solar tracking application	Krishanu Gupta
	Experimental optimization of the process parameters during solvent extraction process from various non-edible biomasses	Rupjyoti Barali
	Computational analysis for flow induced stress and acoustic vibration in a silencer of a three cylinder in-line four-stroke S.I. engine	Rajesh Kumar Meena
2016	Analysis on gear tooth material for low speed and high torque transmission application	Pronita Saikia
	Acoustic behaviour and flow induced stress analysis on an elliptical chamber muffler for a C.I. engine	Sweta Baruah
	Numerical analysis of performance degradation of an airfoil under heavy rain	Jnanaranjan Acharya
2017	Experimental and FEA analysis of dynamic characteristics of cantilever beam influenced by crack	Dakshesh Kumar

PhD research supervision/joint-supervision/co-supervision: (4 completed)

Scholar's name (duration)	Research domain	Current status and thesis title
Dr. Sumit Das Lala (2015-2019)	Bio-composite	**Completed**: Thesis entitled "Development of bio-composite material from Cashewnut, Rubber and Walnut seed Shells" defended on 21st October 2019.
Dr. Manoja Kumar Sahu (2015-2020)	Heat-transfer	**Completed**: Thesis entitled "Numerical Investigation on thermo-hydraulic performance of channel with various shapes of rib roughness" defended on 26th August 2020.
Dr. Emon Barua (2015-2020)	Bio-mechanics	**Completed:** Thesis entitled "Development and characterization of hydroxyapatite based composite bone scaffold for bone tissue engineering" defended on 24th December 2020.