



**DR. SUSHOVAN CHATTERJEE**, Associate Professor and Head, 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:** +91-9432527572/+91-9707545561. **e-mail:** sushovan.chatterjee@gmail.com

BME (Hons.) (Jadavpur University), MME (Jadavpur University), PhD (IIT Guwahati), Chartered Engineer (India), MIE (India)

**Biographical sketch:** Dr. Chatterjee was born in south Kolkata in 1975, and completed his schooling from Ramkrishna Mission Vidyalaya, Narendrapur. He has Completed his graduation [Bachelor of Mechanical Engineering (with Honors)] 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 involved in active interdisciplinary researches in various versatile domains. Currently, four research scholars are perusing their PhD under his supervision. So far, he has supervised 14 M.Tech. scholars of different specialized and also guided various B.Tech projects. Scholars under his guidance are motivated to teaching or peruse their higher studies.

Dr. Chatterjee, is currently working as Associate Professor and Head, Department of Mechanical Engineering, Cooch Behar Government Engineering College, under Department of Higher Education Government of west Bengal from December 2016. He is contributing significantly in academic, research, and administrative accomplishment. He has the potentiality to monitor/access his students exceedingly well.

### Accolades:

- Honoured for the best presentation in International conference on 'Biofuel Vision 2015' at Engineering College Bikaner on October 15, 2006.
- Awarded National prize under national scholarship scheme for securing high marks both during matriculation and higher secondary examinations.
- Chartered Engineer (India), Corporate Member of The Institute of Engineers (India), Membership no. M-1570638.

### Chairing Technical session at International Conference:

- Chaired a technical session at International Conference on Advanced Research in Mechanical Engineering (ICRME) held in Bangkok, Thailand during March 23-26, 2013.
- Chaired two technical sessions at "International Conference on Recent Trends in Engineering and Material Sciences" held during 17-19 March 2016 at Jaipur National University (JNU), Jaipur, India.

**Invited talk delivered:** Delivered an invited lecture on "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 Department of Chemistry NIT Silchar.

### Journal paper Reviewed:

Renewable & Sustainable Energy Reviews, Elsevier  
Heat and Mass Transfer, Springer  
International Journal of Applied Research in Mechanical Engineering

**Project Reviewed:** Central Power Research Institute (CPRI)

### Sponsored Research Project completed:

**Title of the Project:** Development of an enzymatic process for production of microalgaecal 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/-

### Administrative responsibilities executed:

- **At NIT Silchar:** Associate warden, PG Hostel (February 2015 to November 2016), Member Secretary DPPC (Departmental Post Graduate Program Committee) (September 2012 to December 2016). Faculty advisor, B.Tech. Time-table coordinator of Mechanical Engineering Department (2008 to 2015). Founder-faculty coordinator SAE BAJA student's project since 2011-2016. Member of DUPC and DPMC of Mechanical Engineering Department, NIT Silchar up to 2016.

- **At Cooch Behar Government Engineering College:** Head, Department of Mechanical Engineering.

**Teaching Interest:** Dr. Chatterjee is very much passionate about teaching to undergraduate and post graduate subjects like, Solid Mechanics, Fracture Mechanics, Principles of Combustion, Renewable Energy, etc.

**Research Interest:**

- Design and thermal optimization of chemical process, Stress analysis structural elements/ machine, Processing and characterization of alternative fuels for I.C. engines.
- Worked as Associate Editor of International Journal of Applied Research in Mechanical Engineering, (IJARME) ISSN: 2231 –5950. <http://interscience.in/ijarme.html>

**Workshops Organized/coordinated:**

Course	Conducted by	Role	Duration
Five days “Workshop on Basic Statistics Using Software”	Applied Statistics Unit, Indian Statistical Institute Kolkata	Local Organizer	August 14-18, 2014
Two weeks ISTE workshop on “Engineering Mechanics”	IIT Bombay, under the Project “National Mission on Education through ICT”	Workshop Coordinator	November 26, 2013 to December 06, 2013
Three days “Workshop on Reliability Theory and its Applications to Real Life Problems”	Central SQC Unit, Indian Statistical Institute, Kolkata	Organizing Co-coordinator	January 16-18, 2015

**Professional Experiences: (In reverse chronological Order)**

Designation	Employer	Period of service
Associate Professor, and Head, Deptt. of Mechanical Engg., Cooch Behar Govt. Engg. College	Department of Higher Education, Government of West Bengal	December 2016 to till date
Assistant Professor, Department of Mechanical Engineering, NIT Silchar	National Institute of Technology Silchar, Assam	July 2008 to December 2016
Lecturer in Mechanical Engineering, Sree Ramkrishna Shilpa Vidyapith Suri	Department of Technical Education and Training, Govt. of West Bengal	December 2007 to July 2008
Technical Assistant, Department of Applied Mechanics	Bengal Engineering and Science University, Shibpur, Howrah	February 2004 to July 2005
Lecturer, Department of Mechanical Engineering	B.P. Poddar Institute of Management and Technology, Kolkata	July 2003 to November 2003
Drawing Instructor	RCC Institute of Information Technology, Kolkata	September 1999 to July 2003
Apprenticeship Trainee (Quality Inspector), Incoming Inspection.	Siemens Limited, Joka Works, Calcutta	October 1997 to December 1998

**Some other experiences:**

- During June 2000 to July 2005, worked as honorary part-time faculty at Ramakrishna Mission Junior Technical School, Narendrapur. 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, worked as a trainee at Mechanical Technology Control Cell, Development Consultant Limited, Park Street, Kolkata. During this period, gained practical exposures on preparation and rectification of piping layout, P&I diagram, G.A. Drawing, etc.

### PhD thesis supervision: (4 On-going)

Name of Scholar	Working domain	Year of Joining	Status
Ikbal Bahar Laskar	Biofuel	2014	Ongoing
Manoja Kumar Sahu	Heat Transfer	2015	Ongoing
Sumit Das Lala	Composite Material	2015	Ongoing
Emon Barua	Biomechanics	2015	Ongoing

### M. Tech. Project supervised: (14 completed)

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

### B. Tech. Project supervised: (8 completed)

Name of Scholars in project group	Title of the project	Year
Bidyot Doley, Bhriku Thakuria, Ashok Kumar, T. Mangliandinga, S. Paominlian Simte	Crack Propagation and Fracture Analysis in Engineering Structure by Generative Part Structural Analysis	2012
Janardan Das, Rakesh Kalita, Rupam Das, Souvik Roy, Zorema Chawngthu	CFD analysis of exhaust gas flow through muffler	2013
Abhijit Gogoi, Purnyajit Bezbaruah, Deepjyoti Rabha, Rajib Sutradhar, Rakesh Shah	Viability Study of Extraction of Biodiesel from waste Biomass (Cashew nut Shell)	2014
Ankush Ganguly, Sayan Paul, Soumya Chakraborty, Amitava Roy, Sushanta Das	Acoustic performance and modal analysis for the muffler of a 4-stroke 3-cylinder inline engine	2014
Mrinmoy Rajkhowa, Sushil Toshniwal, Anupam Dutta, Bhanita Das, Suman Pathak	Development of an experimental investigation facility for the characterization and production of biofuels using indigenous biomass	2015
Arijeet Roy, Nabarun Dey, Samrat Roy, Bikram Das, Joydeep Biswas	Estimation of instantaneous efficiency/transient response for solar flat plate collector for Silchar locality	2016
Abhik Deb, Himangshu Kalita, Saidul Islam	Feasibility study of a portable manual Compression refrigeration system	2017

## Research Publications:

### Book Chapter:

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

### International Journals:

- “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.
- “Computational fluid dynamic analysis of the exhaust gas flow through absorptive and reactive mufflers: some case studies” accepted for publication in Proc IMechE Part D: J Automobile Engineering 1–21\_ IMechE 2016. DOI: 10.1177/0954407016676230.
- “CFD analysis on hydrodynamic conditions of a designed spiral column photobioreactor for cultivation of microalgae” Accepted for publication, World Journal of Engineering.
- “Crack Propagation and Fracture analysis in engineering structure by generative part structural analysis”, International Journal of Current Research, (2014), 6(06): 7032-7037.
- “Simulation of Hydrodynamic Conditions of a Photo-bioreactor for Microalgae Cultivation”, Journal of Applied Mechanics and Materials (2014), Vols. 592-594: 2427-2431.
- “Silk-cocoon matrix immobilized lipase catalyzed transesterification of sunflower oil for production of biodiesel”, Journal of Catalysts, Volume 2014 (2014), Article ID 868535.
- “Breathing crack in beam and cantilever using contact model dynamic analysis-a study”, International Journal of Wisdom Based Computing (2011), 1(3): 39-42.
- “Silk-fiber immobilized lipase-catalyzed hydrolysis of emulsified sunflower oil”, Journal of Applied Biochemistry & Biotechnology, (2009), 157(3): 593-600.
- “Recent Inventions in Biodiesel Production and Processing- A Review”, Journal of Recent Patent on Engineering. (2008), 2: 47-58.
- “Effect of Pressure Angle of Spur Gears on Bending and Contact Stresses: A Comparative Study Using Finite Element Software” International Journal of Advance Research in Science and Engineering, (2015), 4(01):517-526.
- “Optimization of the Solvent Extraction Rate and Extraction Efficiency Considering Flow Rate, Heating Rate, and Solvent Concentration”, International Journal of Advance Research in Science and Engineering, (2015), 4(01):527-533.
- “Structural Analysis of The Exhaust Gas silencer for The Flow through perforated and non-perforated silencer”, International Journal of Advance Research in Science and Engineering, (2015), 4(01): 534-540.
- “Finite Element Based Computational Study for Assessment of Elastic Follow-Up in Autoclave Pressure Vessel”, International Journal of Advance Research in Science and Engineering, (2015), 4(01):541-546.
- “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.

### Conference: International

- Honoured for the best presentation in International conference on ‘Biofuel Vision 2015’ for presenting paper entitled ‘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).
- Paper entitled “Application of optimization techniques in bio-diesel processing” was published in the proceedings of International Conference on Sustainable Manufacturing and Operations Management (ISOM 2013) held during June 26-28, 2013 at University of Mauritius, Reduit, Mauritius, pp. 212-215. [http://issuu.com/giapindia/docs/isom\\_2013\\_proceedings\\_\\_giap\\_journal](http://issuu.com/giapindia/docs/isom_2013_proceedings__giap_journal)
- Presented paper entitled ‘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.
- Presented paper entitled ‘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.
- Presented paper entitled ‘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.
- Presented paper entitled ‘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.
- Paper entitled “Viability study of some potential natural resources as alternative fuel for I.C. engine” had accepted for invited talk in“ the Third International Conference on Recycling and Reuse of Materials (ICRM 2014)” held during 11-13 April 2014, at Kottayam, Kerala, India.

- Presented paper entitled ‘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, Tamilnadu on 29 September, 2014.
- Paper entitled “Evaluation of Bend Curvature of Superheater Tube using CFD Analysis” accepted for oral presentation in ASME 2015 Power and Energy conversion Conference to be held at San Diego Convention Center, San Diego, USA during 28th June to 2nd July, 2015.
- Presented four papers in International Conference on Recent Trends in Engineering, Science & Management (ICRTESSM-2015) on 15 March 2015 at Jawaharlal Nehru University (JNU, Convention Center), New Delhi.
- Presented paper in “International Conference on Recent Trends in Engineering and Material Sciences” held during 17-19 March 2016 at Jaipur National University (JNU), Jaipur, Rajasthan.
- Presented paper entitled “Facile synthesis and characterization of silver support zinc oxide nano particles” 24th Annual International Conference on Composites and Nano Engineering, Haikou, Hainan Island, China, 17-23 July 2016.
- Presented paper entitled “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 PMME-2016” held during 29—30 July, at PACE Institute of Technology and Sciences, Ongole, Andhra Pradesh, India.
- M. Tech. scholar under my supervision, Mr Sanjoy Paul had honored with best paper award in International Conference on “Contemporary Challenges in Management, Technology & Social Sciences”, held on April 05-06, 2014 at MGIMT, Lucknow, by presenting our paper entitled “CFD analysis of hydrodynamic condition of designed spiral column photobioreactors for cultivation of microalgae”. The full paper of this conference had been published in “Handbook of Management, Technology and Social Sciences” (ISBN) - 978-81-928926-3-4, pp. 166-174. <http://semsindia.org/publication/conference-book>
- “A Review on Vibration Analysis and Identification of Crack in Cantilever Beam”, International Conference On Innovative Research in “Mechanical, Electrical, Electronics, Civil, Computer Science and Information Technology” (MECIT-2017), Jawaharlal Nehru University, New Delhi, 29th April 2017

### Conference: National

- 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 entitled ‘Overview of some occasional loads on industrial pipelines-some studies’ (March 2009).
- Presented paper entitled ‘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).
- Presented paper entitled ‘Occasional Loads on Pipes’ in 12th National Conference on Machines and Mechanism (NaCoMM) held at IIT Guwahati (December 2005). <http://www.nacomm2005.ammindia.org/145%20Occasional%20loads%20on%20pipes.pdf>
- Presented paper entitled ‘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).
- Presented paper entitled ‘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).
- Presented paper entitled ‘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).
- 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).
- Presented paper entitled “Seismic Analysis on Industrial Piping” in 12th West Bengal Science and Technology Congress, February 2005. (Held at West Bengal University of Technology, Saltlake, Kolkata).
- Presented 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).

### Some other important training courses/conferences/ workshop attended:

Title of the Course	Duration	Host /Organizing Institute
Two and half day workshop on Promise and Challenges of Biodiesel as Sustainable fuel for Future Use	February 19- 21, 2015	IIT Madras
One week National Faculty Development Program on Pedagogy: A Framework for Effective Teaching and Learning Strategies	May 7-11, 2014	NIT Silchar
One week ISTE Workshop on Engineering Mechanics	September 16-20, 2013	IIT Bombay
One week short term course on Failure Analysis of Engineering Materials	September 23- 27, 2013	NIT Silchar
One week short term training program on CFD and its Application	July 2-6, 2013	MNIT Allahabad
One-week short term training program on Recents in evolutionary optimization techniques and applications	June 1-7, 2012	NIT Silchar
Two weeks Refresher Course on Computer Aided Design	December 2002- January 2003	Jadavpur University
18th National and 7th ISHMT-ASME Heat & Mass Transfer Conference	January 4-6, 2006	IIT Guwahati
Two week Summer course on Fluid Dynamics & Its Applications	July 7-19, 2008	NIT Silchar
One-week short term course on Hydrogen Fuel and its Applications	September 15-19, 2008	IIT Guwahati
One-week short term course on Fuel Cell and Hydrogen Technology	September 14-18, 2009	IIT Guwahati
One-week short term course on Mechanical Engineering Education	December 7-11, 2009	IIT Guwahati
Faculty Induction Programme for Engg. College Teachers of N-E Region	April 26-May 8, 2010	NITTR Kolkata
One-week short term course on Recent trends in fuels and combustion	August 29- September 2, 2011	IIT Guwahati
One-week short term course on Applications of Statistics in Engineering, Management and Applied Sciences	October 11-15, 2012	NIT Silchar
One week workshop cum training course on cryogenic Engineering and cryo-instrumentation	November 13-18, 2000	Jadavpur University
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