

## Dr. SATADRU KASHYAP

Assistant Professor (Senior Scale) and Departmental Placement Coordinator  
Department of Mechanical Engineering,  
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### Work Experience:

Duration	Organization	Designation
Sept 2017 – Present	Tezpur University	Assistant Professor (Senior Scale) – Mechanical Engineering
Sept 2012 – Sept 2017	Tezpur University	Assistant Professor – Mechanical Engineering
Sept 2011 – Aug 2012	Essar Oil Limited	Manager - Inspection and Corrosion
Jun 2006 – Jul 2008	Essar Oil Limited	Asst. Manager – Inspection and Corrosion
Jun 2005 – Jun 2006	Essar Oil Limited	Graduate Engineer Trainee

### Educational Qualification:

- Ph.D (Mechanical Engineering), Tezpur University, India (2014-2019)  
Topic: *Development of Industrial Lime Sludge Waste filled Polymeric Composites*
- Master of Science (Materials Engineering) University of Alberta, Canada (2008-2010)
- Bachelor of Engineering National Institute of Technology, Karnataka (NIT), Surathkal (India) (2001-2005)

### Academic Career Highlights:

- **Assistant Professor Senior Scale**, Mechanical Engineering Department, Tezpur University.
- **Faculty Placement Coordinator**, Mechanical Engineering Department, Tezpur University.
- **Research Interests:** Manufacturing, Materials Science, Polymeric Composites, Waste Management
- **Subjects Taught:** Manufacturing Technology (Casting, Forging, Welding), Manufacturing - Metal Cutting and Machining, Composite Materials, Tribology, Mechanical Measurements and Instrumentation, Engineering Mechanics, Industrial Systems and Operations Research, Project Management, Engineering Graphics, Advanced Workshop Practice.
- **Supervised 5 nos. of Master's thesis and 10 nos. of Bachelor's projects.**

### Sponsored Projects (Grants received):

- **DST-SERB** (Government of India) sponsored **IMPRINT Research Grant** (2020-2023) – **INR 1,43,00,000. (Co-Principal Investigator)**  
**Title:** *Multi-Crop Residue Processing Technology Package for Production of Fuel and Fertilizer.*
- **DST-SERB** (Government of India) sponsored **Start-Up Research Grant for Young Scientists** (2013-2016) – **INR 24,30,000. – (Principal Investigator)**  
**Title:** *Utilization of the Calcium Carbonate obtained from Lime Sludge waste of Indian Paper Industry in the fabrication and study of mechanical properties of calcium carbonate based 'Lime Sludge filled Polyethylene' composites.*

### Industrial Career Highlights:

4 years hands on experience on Inspection, Maintenance and Corrosion Control in 20 MMTPA Oil refinery (Essar Oil Limited) encompassing corrosion monitoring, material selection, inspection of process plants and their static equipment (columns, vessels, heat exchangers, fired heaters, piping, cooling towers, desalination plant packages, storage tanks and spheres), fabrication and welding (piping, vessels and tankages), equipment in-

service and shutdown inspection and Non Destructive Testing (Testing) of materials. Handled and coordinated QA/QC & Inspection related activities of static equipment and piping and was actively involved in inspection/maintenance related activities in the construction, pre commissioning, commissioning, operation and shutdown phase of 20 MMTPA Essar Oil Refinery (specifically in Crude distillation unit, Vacuum distillation unit, Vis breaker unit, Merichem units and Utilities area).

### **Graduate Research and Teaching:**

a) **Research Assistant** (2008 – 2010), Chemical and Materials Engineering Department, University of Alberta, Canada.

Advisor: Dr. John A. Nychka

b) **Teaching Assistant** (09/2009-12/2009), **Materials Science Laboratory**, Chemical and Materials Engineering Department, University of Alberta, Edmonton, Canada

Course: Introduction to Materials Science

- Demonstrated laboratory experiments to multiple sections of undergraduate students.
- Teaching experimental concepts, calculations and grading assignments.

c) **Mentor** (09/2009-04/2010), **Dean's Research Award Undergraduate Student Program**, Chemical and Materials Engineering Department, University of Alberta, Edmonton, Canada

### **List of Publications**

#### **Journal Publications:**

- **Satadru Kashyap**, Tanmoy Banik, Tippana Sahachar Reddy “Comparative study and modelling of machinability characteristics of single and double tempered AISI H13 steel during hard part finish turning using brazed tungsten carbide tip” *Materials Today: Proceedings (Elsevier)*, 26(2) (2020) 1430-1438. DOI: <https://doi.org/10.1016/j.matpr.2020.02.296>
- **Satadru Kashyap**, Dipmoni Nath, Debanil Das. “Characterization, weathering and modeling of natural fibre based composites” *Materials Today: Proceedings (Elsevier)*, 26(2) (2020) 963-971. DOI: <https://doi.org/10.1016/j.matpr.2020.01.155>
- Tippana S Reddy\*, Tanmoy Banik, Ramya Velagala, **Satadru Kashyap**, “A study and modeling of cutting forces in dry turning of heat treated AISI H13 tool steel with brazed tungsten carbide tip” *Materials today: Proceedings (Elsevier)*, 24(2), 704-713. DOI: <https://doi.org/10.1016/j.matpr.2020.04.326>.
- **Satadru Kashyap**, Jahidul Islam “Study of flexural properties of lime sludge filled coir fibre reinforced epoxy composites” *International Journal of Engineering Science and Technology*, 10(2) (2018) 210-216. DOI: 10.21817/ijest/2018/v10i2S/181002S039.
- **Satadru Kashyap**, Jahidul Islam, Dilip Datta “A study of Industrial Lime Sludge Waste as filler in hybrid polymeric composites” *IOP Conference Series: Materials Science and Engineering*, 377, 012019, (2018). doi: 10.1088/1757-899X/377/1/012019.
- **Satadru Kashyap**, Dilip Datta, “Lime sludge waste – HDPE composites – a study of their mechanical, thermal and morphological properties” *Journal of Thermoplastic Composite Materials*, 31(10) (2018) 1323-1340. doi: <https://doi.org/10.1177/0892705717738289>.
- **Satadru Kashyap**, Dilip Datta, “Evaluation of Stearic Acid modified Industrial Lime Sludge Waste as filler in High Density Polyethylene composites” *Journal of Polymer Engineering*, 38(4) (2018) 333-341. DOI:<https://doi.org/10.1515/polyeng-2017-0138>
- **Satadru Kashyap**, Dilip Datta, “Reusing industrial lime sludge waste as a filler in polymeric composites” *Materials today: Proceedings*, 4(2) Part A : 2946-2955 (Elsevier). DOI:<https://doi.org/10.1016/j.matpr.2017.02.176>.
- **Satadru Kashyap**, Dilip Datta, “Process parameter optimization in plastic injection molding” *International Journal of Plastics Technology*, 19(1) (2015) 1-18. (Springer). DOI:<https://doi.org/10.1007/s12588-015-9115-2>.

- SanghamitraDas, Hrishikesh Pathak, Rakesh Doley, **Satadru Kashyap**, “Cutting process optimisation and modelling in dry turning of AISI H13 tool steel with brazed carbide tip” *International Journal of Precision Technology*, 6(1) (2015) 42-60. (*Inderscience*)
- Hrishikesh Pathak, SanghamitraDas, Rakesh Doley, **Satadru Kashyap**, “Optimization of cutting parameters for AISI H13 Tool steel by Taguchi method and Artificial Neural Network” *International Journal of Materials Forming and Machining Processes*, 2(2) (2015) 47-65.
- **Satadru Kashyap**, "Fracture behaviour of bioactive glass ceramic: an effort to increase its mechanical properties" *International Journal of Engineering Sciences*, 2(2) (2013) 34-40.
- **Satadru Kashyap**, “Formation of Inter-linked voids in Bioactive glass 45S5 upon crystallization” *Materials Science Research India*, 10(1) (2013) 29-36.
- **Satadru Kashyap**, Kyle Griep, John A. Nychka, “Crystallization kinetics, Mineralization and Crack Propagation in Partially Crystallized Bioactive glass 45S5” *Materials Science and Engineering: C*, 31 (2011) 762-769. (*Elsevier*).
- John A. Nychka, Sherri L.R. Mazur, **Satadru Kashyap**, Ding Li, and Fuqian Yang, “Dissolution of Bioactive Glasses: Effects of crystallinity coupled with stress” *JOM*, 61(9) (2009) 45-51. (*Springer*)

### **Book Chapter:**

- Hhrishikesh Pathak, Sanghmitra Das, Rakesh Doley, Satadru kashyap “ Optimization of Cutting Parameters for AISI H13 Tool Steel by Taguchi Method and Artificial Neural Network” In. *Deep Learning and Neural Networks: Concepts, Methodologies, Tools and Applications*, Pg. 531-551 (2020), IGI Global, USA. DOI: 10.4018/978-1-7998-0414-7.ch030
- Satadru Kashyap, Dipyaman Gogoi, “Study of industrial lime sludge waste filled coir-jute reinforced polyester hybrid composites” In. *Spectrum Vol. 1*, Pg.22-37 (2020), Eudoxia Research Centre, India.
- Satadru Kashyap, Dilip Datta, “Development of various industrial lime sludge waste filled hybrid polymeric composites for environmental sustainability”, In. *Futuristic Composites* (Springer), Ed. S S Sidhu, P S Bains, R Zitoune, M Yazdani, Pg. 197-221 (2018), Springer. DOI: <https://www.springer.com/us/book/9789811324161>

### **Conference Presentations/Proceedings (\* presenting author):**

- Tippana S Reddy\*, Tanmoy Banik, Ramya Velagala, **Satadru Kashyap**, “A study and modeling of cutting forces in dry turning of heat treated AISI H13 tool steel with brazed tungsten carbide tip” 3<sup>rd</sup> International Conference on Advances in Materials and Manufacturing Applications (IconAMMA-2018), 16-18 August, 2018, Amrita Vishwa Vidyapeetham, Bangalore (India).
- **Satadru Kashyap\***, Dilip Datta, “Mechanical Properties of Industrial Lime Sludge waste filled HDPE composites with Maleic Anhydride grafted Polyethylene as a compatibilizing agent”, Advances in Civil and Infrastructure Engineering (ACIE-2018), 16-17 February, 2018, Department of Civil Engineering, Tezpur University, Napaam, Assam (India).
- Tippana Sahachar Reddy\*, Tanmoy Banik, Ramya Velagala, **Satadru Kashyap**, “A Study of Machinability Characteristics of Heat Treated AISI H13 Steel”, Advances in Civil and Infrastructure Engineering (ACIE-2018), 16-17 February, 2018, Department of Civil Engineering, Tezpur University, Napaam, Assam (India).
- **Satadru Kashyap\***, Jahidul Islam, Dilip Datta “A study of Industrial Lime Sludge Waste as filler in hybrid polymeric composites”, 1st International Conference on Mechanical Materials and Renewable Energy (ICMMRE), 8-10 December, 2017, Sikkim Manipal Institute of Technology (SMIT), Majitar, Sikkim (India).
- **Satadru Kashyap\***, Jahidul Islam, “Study on flexural properties of lime sludge filled coir fibre reinforced epoxy composites”, National Conference on Advances in Science Engineering and Technology (ASET) 2017, 10-11 November, 2017, Girijananda Institute of Management and Technology (GIMT), Tezpur (India).

- Jahidul Islam\*, **Satadru Kashyap**, "Study on the tensile properties of Lime Sludge Filled Coir Fibre Reinforced Epoxy Composites", National Conference on "Sustainable Mechanical Engineering and Beyond (SMETB-17), 24-25 March, 2017, Tezpur University, Tezpur (India).
- Prasun Mazumdar, Y. H. K. Reddy, Manash P. Borsaikia, **Satadru Kashyap\***, "Drilling of Bamboo Fiber Reinforced Polymeric Composites", Conference on Recent Trends in Mechanical Engineering, Institute of Engineers (Assam), 21<sup>th</sup> – 22<sup>nd</sup> October, 2016, Institute of Engineers, Guwahati, Assam.
- Prasun Mazumdar, Y. H. K. Reddy\*, Manash P. Borsaikia, **Satadru Kashyap**, "Effect of Process Parameters on Circularity and Surface Roughness during Drilling of Bamboo Fiber Reinforced Polymeric Composites", International Conference on Emerging Trends in Mechanical Engineering (ICETiME-2016), September 23-24, 2016, ICFAI Foundation of Higher Education, Hyderabad, Telangana, India.
- Prasun Mazumdar, Y. H. K. Reddy, Manash P. Borsaikia, **Satadru Kashyap\***, "Optimization of Process Parameters in Drilling of Bamboo Fibre Reinforced Polymeric Composites", International Conference on "Recent Research Development in Science, Engineering and Management (ICRRDSEM-16), 29 May, 2016, Pune (India).
- **Satadru Kashyap\***, Dilip Datta, "Reusing industrial lime sludge waste as a filler in polymeric composites", 5th International Conference of Materials Processing and Characterization (ICMPC 2016), 12-13 March, 2016, Hyderabad (India).
- Anubhav Joshi\*, Deepak Chhetri, Rahul Singh, **Satadru Kashyap**, "Bicycle powered mobile battery charger", 30th National Convention of Production Engineers (Sustainable Manufacturing), 18-19 July, 2015, NIT Agartala (India), p. 22.
- **Satadru Kashyap\***, "Comparative Studies on the Crystallization Kinetics of Bioactive Glass 45S5 at Different Heating Rates." Aspects of Mechanical Engineering Technology for Industry (AMETI),NERIST Arunachal Pradesh (India), 6-8 December, 2014, p. 46-54
- **Satadru Kashyap\***, "Manufacturing crystalline bioactive glass 45S5 to formulate its crystallization kinetics" Manufacturing: Vision for future, IIT Guwahati (India), 12-13 October, 2013, p. 311-320.
- **Satadru Kashyap\***, "Fracture behaviour of Bioactive Glass Ceramic: An effort to increase its Mechanical Properties" International Conference in Advances in Science and Technology, Lonavala, Pune (India), 15-17 May, 2013, p.44.
- John A. Nychka\*, **Satadru Kashyap**, "Can mechanical properties of Bioactive Glass- Ceramics be improved without sacrificing their bioactivity?" TMS Annual Meeting & Exhibition, San Diego, CA (USA), Feb 27-March 3, 2011.
- **Satadru Kashyap\***, Hamidreza Pirayesh\*, John Nychka, Ding Li, Fuqian Yang, "Factors affecting the Dissolution of resorbable Bioactive Glasses," TMS Annual Meeting & Exhibition, Seattle, WA (USA), Feb 14-18, 2010.

#### **Poster Presentations (\* presenting author):**

- **Satadru Kashyap**, John A. Nychka, "Partially Devitrified Bioactive Glass" Ceramographic Competition (Optical Microscopy) held by The American Ceramic Society, MS&T, Houston, Texas, Oct 17-21, 2010
- **Satadru Kashyap \***, John A. Nychka, "Bioglass ceramics: Effect of crystallinity on fracture toughness and dissolution rate," TMS Annual Meeting & Exhibition, Seattle, WA (USA), Feb 14-18, 2010.

#### **Seminars/Workshops attended:**

- 2 week equivalent AICTE approved Faculty Development Programme on "Foundation Program in ICT for Education" organized by Indian Institute of Technology Bombay from 3rd August - 7th September, 2017.
- 1 week Faculty Development Programme on "Recent Trends in Computational and Experimental Mechanics" organized by the Department of Mechanical Engineering, Tezpur University from 11-15 December, 2017.
- 1 week short term course on "Assessment Tools for Outcome based education" at NITTTR, Kolkata from February 27 – March 3, 2017

- 2 week ISTE workshop on “Environmental Studies” held (under National Mission on Education through ICT) conducted by Indian Institute of Technology Bombay from 2-12 June, 2015.
- 2 week Faculty Development Programme on “Current Approaches in Teaching and Research in Science and Technology” organized by the School of Engineering, Tezpur University from 15-27 December, 2014.
- 1 week Short term course on “Introduction to Numerical, Computational and Experimental Mechanics” organized by Mechanical Engineering Department, Assam Engineering College, Guwahati, 9-13 December, 2014.
- 2 week ISTE workshop on “Fluid Mechanics” held (under National Mission on Education through ICT) conducted by Indian Institute of Technology Kharagpur, 20-30 May, 2014.
- 2 week ISTE workshop on “Engineering Mechanics” held (under National Mission on Education through ICT) conducted by Indian Institute of Technology Bombay, 26 November – 6 December, 2013.
- 1 week Short term course on “Application of lasers in manufacturing” held at IIT Guwahati, 24-28 June, 2013.
- 1 week Faculty Development Programme on “Recent Advances in Tribology and Materials for Tribological Applications” held at North Eastern Regional Institute of Technology (NERIST), Arunachal Pradesh, 10- 14 April, 2013.
- 5th seminar on Hydrocarbon Industry Growth: Prospects and Challenges in North East conducted by Indian Oil (Guwahati Refinery) and Petrotech at Guwahati, Assam, 21-22 January, 2013.
- 2 day ISTE workshop on Akash for Education (under National Mission on Education through ICT) conducted by Indian Institute of Technology Bombay on 10th and 11th November, 2012.

#### **List of Professional recognition, Awards received:**

- **Best paper Award - Satadru Kashyap\***, Jahidul Islam, Dilip Datta “A study of Industrial Lime Sludge Waste as filler in hybrid polymeric composites”, 1st International Conference on Mechanical Materials and Renewable Energy (ICMMRE), 8-10 December, 2017, Sikkim Manipal Institute of Technology (SMIT), Majitar, Sikkim (India).
- **Best paper Award** - Mathematical Modelling and Bioengineering Section, “Fracture behaviour of Bioactive Glass Ceramic: An effort to increase its Mechanical Properties” International Conference in Advances in Science and Technology, Lonavala, Pune (India) 2013.
- **Start Up Research Grant for Young Scientists** – DST- SERB (Govt. Of India).
- **Best paper Award** - Mathematical Modelling and Bioengineering Section, “Fracture behaviour of Bioactive Glass Ceramic: An effort to increase its Mechanical Properties” International Conference in Advances in Science and Technology, Lonavala, Pune (India).
- **2nd Prize, Ceramographic Competition**, Optical Microscopy Category held by ACERS at MS&T, Houston, Texas, U.S.A, Oct 17-21, 2010.
- **Mary Louise Imrie Graduate Student Award** by Faculty of Graduate Studies and Research, University of Alberta.
- **Postgraduate Scholarship** covering tuition fees and living expenses in order to pursue Master’s degree, University of Alberta, Canada.
- **Teaching Assistantship**, University of Alberta, Canada for teaching undergraduate first year engineering students an introductory course on Materials Engineering.
- **ASNT Level II Certified Inspector** in Non destructive testing techniques -Liquid Penetrant Testing, Radiographic Interpretation and Ultrasonic Testing.
- Received letters of appreciation and financial incentives for timely completing all the Inspection activities and installation of Corrosion Control programs during construction and commissioning of the 1st phase of 10.5 MMTPA Essar Oil Refinery project (2007) and 18 MMTPA Essar Oil Refinery Expansion project (2012).
- Successfully participated in 5th Seminar on “Hydrocarbon Industry Growth: Prospects and Challenges in North East India” organized by IOCL – Guwahati Refinery and Petrotech on 21st and 22nd January, 2013.

#### **Extra Curricular Activities:**

- Schizophrenia Society of Alberta: Volunteer at the Open Minds Walk & Run Event (2009).
- General Secretary: Indian Students Association, University of Alberta Chapter (2009-2010) .

- BAPS Charities: Volunteer at Walkathon 09 for Sick kids Foundation (2009).
- Campus Chaos University of Alberta' 09: Volunteered at the University of Alberta (2009)
- Rotaract Club: Regular blood donor and conducted blood donation camps for District Hospital, Udupi Karnataka. Received certificate of appreciation from District Hospital (2002-2003).