



Polash Pratim Dutta

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Education

- *Ph.D. (pursuing), IIT Guwahati, (Mechanical Engineering with specialization Laser micro forming)*
- *M.E., Birla Institute of Technology Mesra, (Mechanical Engineering with specialization Computer Aided Design)*
- *B.E., Jorhat Engineering College (Dibrugarh University), (Mechanical Engineering)*

Area of interests

Finite element method, Laser micro manufacturing, Mechatronics, Computer Aided Design.

Scholarships

- 1. Merit Scholarship during 2005-2007 under the scholarship scheme of government of Assam, Director Of Technical Education*
- 2. Merit Scholarship during 2005-2007 under the scholarship scheme of North East Council*

Teaching experience

From February 2008- February 2013: Assistant Professor, Department of Mechanical Engineering, Tezpur University

From February 2013- Till date: Assistant Professor (Senior Scale), Department of Mechanical Engineering, Tezpur University

Publications

International Journals

1. **Dutta P. P., Baruah V., Baruah S. and Goswami R.** "Computer based automatic security gate operation system" *International Journal of Engineering Sciences*, volume 3, issue 1, 2013 pp.33-38.

2. **Nath, M.K., Chowdhury, A., Dutta, P.P.,** "Finite Element Simulation For Thermal Analysis In Laser Forming Of D36 Ship Building Steel" *ADBU Journal of Engineering Technology*, volume 4, issue 1, pp. 1-6.

3. **Dutta P. P., Dixit, U.S., Kalita, K.,** "A strategy for achieving accurate bending by multi-pass laser line heating" *International Journal of Mechatronics and Manufacturing systems*" (Accepted)

International Conferences

1. **Dutta P. P., Baruah V., Baruah S. and Goswami R.** "Computer based automatic security gate operation system" *International Conference on Advances in Engineering and Technology Lonavala, Pune, 2013, India.*

2. **Dutta P. P., Baruah D., Ali B.,** "Optimal design of a multi-stage impact hammer" *International Symposium on Aspects of Mechanical Engineering and Technology for Industry*, at *NERIST, Itanagar, Arunachal Pradesh during 6th – 8th December 2014. (AMETI 2014).*

National Conferences

1. **Dutta P. P., Sarma R., Baruah D., Kalita D.** "Finite element modelling and simulation on laser bending of D36 shipbuilding steel sheet" *National Conference on Theoretical Physics (NCTP 2013) Tezpur University, Assam, India*

2. **Dutta P. P., Kalita K., Dixit U. S.** "Experimental investigation on laser bending of mild steel coated with black enamel paint" *National Conference on Manufacturing: Vision for Future, MVF2013 IIT Guwahati, Assam, India*

3. **Dutta P. P.,** *Experimental and numerical investigation on laser bending of mild steel sheet* *National Conference on recent advances in Mechanical Engineering, Nerist, Arunachal Pradesh, India (NCRME-2013)*

4. **Nath M. K., Dutta P. P., Chowdhury A., Das A.,** *Finite element analysis of laser bending of D36 shipbuilding steel sheet. Proceedings of Advances in Civil and Infrastructure Engineering (ACIE). May 8-9, 2015, Tezpur University, Tezpur, India.*

5. Nath, M.K., Chowdhury, A., **Dutta, P.P.**, "Thermal Analysis Of Laser Forming Process For D36 Ship Building Steel By Using Finite Element Method" **National Conference on Emerging Global Trends in Engineering & Technology (EGTET)**, (26-27 February, 2016), Don Bosco College of Engineering and Technology, Assam Don Bosco University. Guwahati, Assam.

6. Rajowar, S., **Dutta P. P.**, "**FEM simulation for laser bending of D36 shipbuilding steel sheet**" National Conference on Sustainable Mechanical Engineering: Today and Beyond, at Tezpur University, Tezpur, Assam, India, during 25th – 26^h March, 2017. (SMETB, 2017).

7. Talukdar, S., Kirtania, S., **Dutta P. P.**, "**Fabrication and vibration analysis of shaft of a pedal powered washing machine**" National Conference on Sustainable Mechanical Engineering: Today and Beyond, at Tezpur University, Tezpur, Assam, India, during 25th – 26^h March, 2017. (SMETB, 2017).

8. Besufekad N. Fetene¹, **Polash P. Dutta**, Karuna Kalitai and Uday S. Dixit "**Magnetic force assisted laser straightening of mild steel strip**" National Conference on emerging technologies, contribution in promoting defense and industry capabilities, at College of Engineering Campus, Bishofthu (Debre Zeit), Ethiopia during 21th – 22^h July, 2017.

Courses taught

Courses taught at postgraduate level

- *Advanced Solid Mechanics*
- *Finite Element Methods*

Courses taught at undergraduate level

- *Engineering Graphics*
- *Engineering Mechanics*
- *Theory of Mechanisms and Machines*
- *Manufacturing Technology-I*
- *Manufacturing Technology-II*
- *Mechanical Design*
- *Dynamics and Vibration of Machinery*
- *System and Control*
- *CAD-CAM*
- *Mechatronics*
- *Artificial Intelligence in Engineering*
- *Computer Graphics and Solid Modelling*
- *Finite Element Methods in Engineering*

Lab courses taught in undergraduate level

- *Vibration Lab*
- *Theory of Machines and Mechanisms Lab*

- CAD-CAM Lab

Training/Courses Attended:

1. AICTE-MHRD sponsored two week summer course on **fluid dynamics and its application** Organized by Mechanical Engineering, deptt. NIT, Silchar , assam from 07 .07 .2008 to 19. 07. 2008.
2. QIP one week Short Term Course on “**Mechanical Engineering Education**” at IIT, Guwahati Indian Institute of Technology, Guwahati, Assam from 7.12.2009 to 11.12.2009.
3. QIP one week Short Term Course on “**Application of Laser in Manufacturing**” Indian Institute of Technology, Guwahati, Assam form 24.06.2013 to 28.06.2013.
4. Industry-Academia Workshop on “**Technology Imperatives for Exploration and Production of Oil & Gas**”, organized by Oil and Natural Gas Corporation Limited, Petroleum Federation of India and Lovraj Kumar Memorial Trust from 17.03.2010 to 20.03.2010
5. One Week QIP Short Term Course on “**Mechanical Engineering Education**” at IIT, Guwahati from 07.12.2009 to 11.12.2009
6. Two Week ISTE workshop on "**Engineering Mechanics**" organized by IIT, Bombay from 26.11.2013 to 06.12.2013
7. Two Week ISTE workshop on "**Fluid Mechanics**" organized by IIT, Kharagpur from 11.03.2014 to 15.03.2014
8. Two Week ISTE workshop on "**Computer programming**" organized by IIT, Bombay.
9. One week AICTE-NEQIP short term course on "**Advances in Mechanical Engineering and Industrial Application**", Tezpur University.
10. Two Week ISTE workshop on "**Environmental Studies**" organized by IIT, Bombay from 02.06.2015 to 12.06.2015.
11. One week AICTE-TEQIP short term course on "**Practical aspects of Finite Element Analysis**", IIT, Guwahati.
12. Two Week Faculty Development Program (FDP) on ‘**Current Approaches in Teaching and Research in Science and Technology**’ from 15th Dec -27th Dec, 2014, organized by School of Engineering,Tezpur University.

Thesis supervised and ongoing

M.Tech. projects supervised

- 1. Modelling and simulation of laser micro manufacturing processes using finite element methods. (2014-2015)*
- 2. Thermal analysis of D36 shipbuilding steel during laser bending using Ansys. (2015-2016)*
- 3. A combined FEM-ANN approach to estimate deformation and peak temperature in Laser Bending process (2016-2017)*

B.Tech. projects supervised

- 1. FEM Modelling and simulation for stress analysis of a racing car body using I-section members (2016-2017)*
- 2. Design improvement and flow analysis of a non-humidifying low cost air cooler, (2016-2017)*
- 3. Design and development of a non-humidifying low cost air cooler, (2015-2016)*
- 4. Design modification and vibration control of a low cost pedal operated washing machine, (2015-2016)*
- 5. Design of a low cost pedal operated washing machine, (2014-15)*
- 6. Design of a wheel chair cum patient bed system, (2014-15)*
- 7. Design and development of an impact crusher, (2013-2014)*
- 8. Finite element modelling and analysis Laser micro manufacturing process. (2013-2014)*
- 9. Design and fabrication of a computer based automatic security gate system, (2012-2013)*
- 10. FEM simulation and Neural Network modelling of laser micro manufacturing process, (2012-2013),*
- 11. FEM analysis of laser bending process for D36 steel sheet, (2011-2012)*
- 12. Thermo mechanical analysis of laser bending process, (2010-2011)*
- 13. Design and Fabrication of an active suspension stretcher, (2009-2010)*