

Curriculum Vitae

Dr. ABHIJIT BANIK

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Education

2020 **Ph.D.** in Welding Technology from Mechanical Engineering Department, National Institute of Technology Agartala, India.

Thesis Title: “Effect of Tool Geometry and Process Parameters on Microstructure and Mechanical Properties of Friction Stir Welded AA 6061-T6”.

Supervisors Prof. Subhash Chandra Saha and Prof. John Deb Barma.

2012 **M.Tech** in Manufacturing Technology from National Institute of Technology Agartala, India with 1st Class.

Thesis Title: “Modeling and Parametric Optimization of Submerged Arc Welding Process Using the Mixture of Fresh and Fused Flux”.

Supervisor Prof. John Deb Barma.

2010 **B.E** in Production Engineering from National Institute of Technology Agartala, India with 1st Class.

Areas of Interest and Specialization

- ✓ **Interest:** Welding Technology, Metal Cutting and Machine Tool, Additive manufacturing, CAD/CAM, Mechanics of Material, Materials Science.
 - ✓ **Instruments and process familiar with:** Optical microscopy, Scanning electron microscopy, XRD, Vickers microhardness, Surface profilometer, Thermocouple incorporated DAQ system, Different welding processes (FSW, SAW, MMAW), Basic workshop machine tools, Muffle furnace, Wavelet analysis.
 - ✓ **Specialization:** Manufacturing Technology.
 - ✓ **Software Proficiency:** Python, MATLAB, COMSOL Multiphysics, Minitab, ImageJ.
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Relevant Experience

- ✓ Visiting faculty in **Guru Nanak Institute of Technology** (Kolkata). (2013)
- ✓ Temporary faculty in **NIT Mizoram** (Aizawl) (11/8/2021-15/12/2023)
- ✓ Asst. Professor in Modern Institute of Engineering & Technology (Kolkata) (17/01/2024-Till now)
- ✓ **Subjects taught:** Manufacturing Science and Technology-I & II, Computer Aided Design and Manufacturing, Advanced Manufacturing Processes, Engineering Drawing, Machine Drawing.

Publication

Journal

1. **Abhijit Banik**, Barnik Saha Roy, John Deb Barma, Subhash C. Saha., An experimental investigation of torque and force generation for varying tool tilt angles and their effects on microstructure and mechanical properties: Friction stir welding of AA 6061- T6, *Journal of Manufacturing Processes*, Elsevier, Volume 31, 2018, Pages 395- 404. **(SCI)**
2. **Abhijit Banik**, John Deb Barma, Subhash C. Saha, Effect of Threaded Pin Tool for Friction Stir Welding of AA6061-T6 at Varying Traverse Speeds: Torque and Force Analysis, *Iranian Journal of Science and Technology, Transactions of Mechanical Engineering*, Springer, Volume 44, pages 749–764, 2020. **(SCI)**
3. **Abhijit Banik**, Abhijit Saha, John Deb Barma, Uttam Acharya, Subhash C. Saha, Determination of best tool geometry for friction stir welding of AA 6061-T6 using hybrid PCA-TOPSIS optimization method, *Measurement*, Elsevier, Volume 173, 2021, 108573. **(SCI)**
4. **Banik, Abhijit**, Tapas Debnath, John Deb Barma, and Subhash Chandra Saha. "Effect of Square Pin Tool on Friction Stir Welded AA 6061-T6 from the Perspective of Revolution Pitch." *Soldagem & Inspeção* 27 (2022): e2706. **(SCI)**
5. Acharya, Uttam, Manasij Kumar Yadava, **Abhijit Banik**, Subhash Chandra Saha, and Barnik Saha Roy. "Effect of heat input on microstructure and mechanical properties of friction stir welded AA6092/17.5 SiCp-T6." *Journal of Materials Engineering and Performance* 30, no. 12 (2021). **(SCI)**
6. Acharya, Uttam, Tanmoy Medhi, Durjyodhan Sethi, Smrity Choudhury, **Abhijit Banik**, Subhash Chandra Saha, and Barnik Saha Roy. "A Study on the Implication of Modified Joint Configuration in Friction Stir Welding." *Soldagem & Inspeção* 26 (2021). **(SCI)**
7. Mandal, Abhishek, **Abhijit Banik**, John Deb Barma, and Gautam Majumdar. "Friction Stir Welding of Two Dissimilar Metals: Weld Quality Characterization Using the Wavelet Transform Approach." *Iranian Journal of Science and Technology, Transactions of Mechanical Engineering* (2023): 1-19. **(SCI)**
8. Uttam Acharya, **Abhijit Banik**, Fredrick Mwema, Stephen Akinlabi, Barnik Saha Roy, Esther Akinlabi "Effect of Tool Traverse Speed on high strength structural AA6092/17.5 SiCp-T6 AMC Friction Stir Welding." *Materials Today Communications*, 38, 2024, 108040. **(SCI)**
9. Chowdhury, Sagnik; Mandal, Abhishek; **Banik, Abhijit**. "Process parameter optimization and characterization of FDM-PLA parts." *Plastics, Rubber and Composites*, Manuscript ID PRC-24-0036. **(Accepted-31-May-2024, SCI)**

Conference / Seminar Presentations

1. **Abhijit Banik**, John Deb Barma, Ram Singh, Subhash C. Saha. A Study on the Effect of Varying revolution Pitch for Different Tool Design: Friction Stir Welding of AA 6061- T6. *Advances in Industrial and Production Engineering, Lecture Notes in Mechanical Engineering (FLAME-2018)*, Amity University, Noida, 3rd-5th October, 2018, https://doi.org/10.1007/978-981-13-6412-9_49.
2. **A. Banik**, B.S Roy, J. Deb Barma, S.C. Saha., Study of The Effect of Cylindrical Threaded Pin Tool on Microstructure and Mechanical Properties of Friction Stir Welded AA 6061- T6, *Proceedings of The International Conference on Recent Innovations in Production Engineering (RIPE-2017)*, MIT, ANNA University, Chennai, 24-25 March 2017, ISBN:978-93- 86256-65-2.

Workshop / Training Session Attended

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|---|------------------------|------|
| ➤ Technical Training Centre, Chittaranjan
Locomotive Works, Chittaranjan. (Two weeks) | Vocational
Training | 2009 |
| ➤ Advanced Materials and Machining, NIT Agartala. | Workshop | 2014 |
| ➤ Comsol Multiphysics 2-Day Intensive
Training Course, Kolkata. | Workshop | 2015 |
| ➤ Product Design and Development, (Two days),
NIT Agartala. | Workshop | 2016 |
| ➤ Electron Microscopy and Microanalysis of
Materials, (EMMM-2016), IIT Kanpur, Kanpur, (6 days). | Short term
course | 2016 |

Personal Details

Father's Name: Sri. Chandan Lal Banik
Mother's Name: Smt. Anjali Banik
Permanent Address: 160660, Ward No- 19, Mashzid Road, Vill- Shibnagar, Agartala,
P.O.-Agartala College, East PS, District – West Tripura, PIN - 799004, State - Tripura,
India. Date of Birth: 1st February 1987
Nationality: Indian
Marital Status: Married

References

Dr. John Deb Barma, Associate Professor,
Department of Mechanical Engineering
National Institute of Technology Agartala, 799046, Tripura.
E-mail: debbarma_john@rediffmail.com

Dr. Pritam Das, Associate Professor, Department of
Mechanical Engineering
National Institute of Technology Agartala, 799046,
Tripura.
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