

CV of Arnab Das

Address: **Arnab Das**
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Current Position:

Senior Research Fellow at Indian Institute of Technology (ISM) Dhanbad under the guidance of Prof. Vivek Bajpai (Date of joining: 30/07/2018)

Education:

Ph.D. (Pursuing) Mechanical Engineering
Indian Institute of Technology (ISM) Dhanbad
Supervisor: Prof. Vivek Bajpai

M.Tech Mechanical Engineering (Spl. Manufacturing Engineering)
Indian Institute of Technology (ISM) Dhanbad
Supervisor: Prof. Vivek Bajpai
Thesis title: Development of vibration-free machine structure for high-speed micro milling center.
Result: First class with distinction
Year of passing: 2018

B.Tech Mechanical Engineering
Govt. college of Engineering & Textile Technology, Berhampore, West Bengal
Result: First class
Year of passing: 2016

Current Research areas:

1. Micro turning
2. Ultraprecision diamond turning
3. Metal cutting

Other Research Interests:

1. High speed micro machining
2. Unconventional machining
3. Vibration analysis of machine tools
4. 3D-printing

Research Experience

1. Design and development of semi high speed micro-milling center and ultra high speed micro-milling center
2. Improvement of surface quality on miniaturized samples in micro turning
3. Cutting force reduction by MQL in turning operation

Teaching Experience

1. **Teaching assistantship during M.Tech in IIT (ISM) Dhanbad**
Subject: Mechanical workshop (Lab)
2. **Teaching assistantship during Ph.D. in IIT (ISM) Dhanbad**
Subject: Mechanical workshop (Lab),
Theory of Metal Forming (MCC 52108),
Micro manufacturing (MED558),
Advances in Machining (MEC514)

Article Publications:

1. **Arnab Das**, Shashank Shukla, Mohan Kumar, Chitransh Singh, Madan Lal Chandravanshi, Vivek Bajpai, Development of a vibration free machine structure for high-speed micro-milling center, **The International Journal of Advanced Manufacturing Technology**, vol 116, 2021, pp 3489-3506. <https://doi.org/10.1007/s00170-021-07533-1>

Patent Publications:

1. Vivek Bajpai, **Arnab Das**, Shashank Shukla, Chitransh Singh, Mohan Kumar, Madan Lal Chandravanshi, A machine structure to reduce vibration of micro-milling machine, **Indian Patent**, Application no **201931049978 A**, The Patent Office Journal No. 30/2020 Dated 24/07/2020, pp 27773.

International Conferences:

1. **Arnab Das**, Vivek Bajpai, Development of an ultra-high speed micro-milling center: An FEM approach, in the Proceedings of **2nd International Conference on Industry 4.0 and Advanced Manufacturing (I-4AM 2022)**, Indian Institute of Science (IISc), Bengaluru, India, 10-11 January 2022.
2. **Arnab Das**, Shri Narayan Agnihotri, Vivek Bajpai, Compensation for Merchant's Circle Diagram to predict cutting force in orthogonal micro turning, in the Proceedings of **World Congress On Micro & Nano Manufacturing 2021 (WCMNM 2021)**, IIT Bombay, Mumbai, India, 20-23 September 2021.
3. **Arnab Das**, Vivek Bajpai, Analysis and prediction of surface roughness on lead free brass in high speed micro turning, in the Proceedings of **World Congress On Micro & Nano Manufacturing 2021 (WCMNM 2021)**, IIT Bombay, Mumbai, India, 20-23 September 2021.
4. **Arnab Das**, Deepak Kumar, Mohan Kumar, Vivek Bajpai, Experimental Investigation of Electrochemical Micro Turning of Ti6Al4V With NaOH Solution, in the Proceedings of the **ASME 2020 15th International Manufacturing Science and Engineering Conference**. Volume 2: Manufacturing Processes; Manufacturing Systems; Nano/Micro/Meso Manufacturing; Quality and Reliability. Virtual, Online. September 3, 2020. V002T08A007. ASME. <https://doi.org/10.1115/MSEC2020-8275>
5. **Arnab Das**, Vivek Bajpai, Fabrication of super-finished surfaces in high-speed turning and micro turning: A review, in the Proceedings of **International Conference on Precision, Meso, Micro and Nano Engineering (COPEN 2019)**, IIT Indore, India, 12-14 December 2019.

Awards & Recognitions:

1. **'One of the Most Distinguished Papers'** at the 2nd International Conference on Industry 4.0 and Advanced Manufacturing (I-4AM 2022) for the paper entitled “Development of an ultra-high speed micro-milling center: An FEM approach”
2. **'Student award'** at the World Congress On Micro & Nano Manufacturing 2021 (WCMNM 2021)
3. **ASME student membership** for the year 2022
4. **MHRD Scholarship** during Ph.D at IIT (ISM) Dhanbad
5. **GATE Fellowship** during M.Tech at IIT (ISM) Dhanbad
6. **Central Sector Scheme of Scholarship** during B.Tech for 651 rank in state level at 12th standard

Skills and Expertise

Technical skills	Experimental skill Technical writing FE modeling Characterization of Machined surface and Microstructure
Machines operated	Workshop machine tools CNC machines High speed micro milling center Electro chemical machine (ECM) Optical profilometer (Zygo make, Model Newview 9000) Optical microscope (Olympus make, Model BX51M) Portable surface roughness tester 3D printer (FDM)
Software Proficiency	Technical writing: MS Office, Latex CAD/CAM: AutoCAD Finite element modeling: ANSYS, ABAQUS Statistical application: Minitab, Design Expert, Origin Other applications: ME'ScopeVES