Ankita Mohanty

Address: Indian Institute of Technology, Gandhinagar, Gujarat, 382355, India
Phone: 91-8249327685
Email: ankitam@iitgn.ac.in

Research Interests

.

My research interests lie in the fields of thermo mechanical processing of steel and other superalloys, additive manufacturing, and microstructure and mechanical characterization techniques.

Education

Master in Technology (2020-Continuing)
Materials Science and Engineering,
Indian Institute of Technology Gandhinagar, Gujarat, India.
CPGA-8.3 (up to 3rd semester).

Bachelors in Technology (2016-2020)
Production Engineering,
Indira Gandhi Institute of Technology Sarang, Odisha, India.
CPGA - 8.25.

12th Standard (2014-2016)
Delhi Public School Rourkela, Odisha, India.
Percentage of marks secured-85%.

10th Standard (2012-2014)
Delhi Public School Rourkela, Odisha, India.
Percentage of marks secured -94.3%.

Internships

1. Internship on ‘Friction Stir Welding’ at the Indian Institute of Technology Guwahati, Department of Mechanical Engineering (11th June-12th July 2019)
2. Internship on ‘Non-traditional Machining Processes’ at the National Institute of Technology Rourkela, Department of Mechanical Engineering (27th June- 25th July 2018).
3. Internship on ‘WEBOTS’ at the Indian Institute of Technology Bhubaneswar, School of Mechanical Sciences (24th May-25th June 2018).

Responsibilities undertaken

1. Teaching Assistant in ‘Foundation Program-III’ for undergraduate students (13th December- 3st December 2021).
2. Teaching Assistant in ‘Metallography Laboratory’ (4th August-Continuing).
3. Teaching Assistant in ‘Mechanical Behaviour of Materials’ course for undergraduate students (4th August-31st November 2021).
4. Teaching Assistant in ‘Engineering Graphics’ course for undergraduate students (3rd January-22nd April 2021).

Publication

Mohanty A, Mohapatra R, Das S.P, Optimization of Wire EDM Process Parameters for Machining of INVAR 36 Alloy, Advances in Materials Processing and Manufacturing Applications. ICADMA 2020. Lecture Notes in Mechanical Engineering. Springer, Singapore,2021, https://doi.org/10.1007/978-981-16-0909-1_1

Conference Papers

1. **Mohanty A,** Das H, Effect of Friction stir Processing on Mechanical Properties of A7075-T6 Aluminium Alloy, 2nd International Conference on Industrial and Manufacturing Systems, 11th-13th November 2021 at NIT Jalandhar, India.

2. **Mohanty A**, Mohapatra R, Das S P, Optimization of Wire EDM Process Parameters for Machining of INVAR 36 Alloy, International Conference on Advances in Materials Processing and Manufacturing Application, 5th-6th November 2020 at MNIT Jaipur, India.

3. **Mohanty A**, Narayanan R G, Weld Quality Assessment of Friction Stir Spot Welded 5052-H32 Aluminum Alloy by Microstructure Analysis,64th Congress of the Indian Society of Theoretical and Applied Mechanics (An International Conference) 9th-12th December 2019 at IIT Bhubaneswar, India.

Seminars Attended

1. Webinar on Light Alloys: Etching and microstructure analysis by Buehler, 27th October 2021.
2. Aluminum-From Mine to Metal-Online lecture by scientists from JNARDDC, Maharashtra, India, 17th September 2021.
3. Webinar on Composite Materials Preparation and Analysis by Buehler, 26th August 2021.
4. Materials Engineering seminar series-Corrosion control by coatings by Mr. Urvesh Vala, Dy. General Manager Engineering Technology, Plant Integrity Engineering Division, L$T Chiyoda Ltd, India ,25th February 2021.
5. Advances in Production Engineering (APE-2020)-One-week National webinar sponsored by TEQIP-III, organized by Department of Production Engineering, IGIT Sarang, Odisha, India,14th-19th September 2020.

Training Programs Attended

1. MATLAB at Central Tool Room & Training Centre, Bhubaneswar, Odisha, India (15th December-31st December 2019).
2. CATIA at Central Tool Room & Training Centre, Bhubaneswar, Odisha, India (2nd January- 16th January 2019).
3. AutoCAD 2D Drafting & Solid Modeling at Odisha Computer Application Centre, Bhubaneswar, Odisha, India (13th June-21st July 2017).

B.Tech Project

Title-Optimisation of process parameters for machining of Invar 36 alloy in Wire EDM.

Objective-The project work aimed to optimize various wire EDM input parameters for machining of INVAR 36. The Taguchi technique was used to carry out the optimization and 9 (L9 orthogonal array) experiments were performed. The control parameters like pulse-on-time (Ton), pulse-off-time (Toff), servo voltage (SV) and wire feed rate (Wf) were chosen to analyze

the effect of various parameters on material removal rate (MRR) and surface roughness (SR) of INVAR 36 alloy. The Taguchi method was applied by using MINITAB 17 software to maximize MRR and minimize SR.
Outcome-The optimum level of process parameters for MRR was found to be 25 μs pulse-on-time, 46 μs pulse-off-time, 5 mm/min wire feed rate, 30 V servo voltage and for surface roughness (SR) 25 μs pulse-on-time, 19 μs pulse-off-time, 3 mm/min wire feed rate, 20 V servo voltage.

MTech Project(ongoing)

Title-Preparation of aluminium surface composite using Friction Stir Processing and its characterization.
Objective-The project thesis focuses on the preparation of Al metal/polymer composites materials. Experiments are being performed on the matrix metal Al 1050 with reinforcements- glass powder and polymer (PET). Grooves of suitable dimensions are drilled in the center of the Al matrix using the CNC machine. Grooves are filled with reinforcements and are subjected to friction stir processing under different processing parameters such as rotational speed and traverse speed. The processed area is sectioned using a band saw/abrasive cutting machine, and the samples are subjected to various characterization. The characterization techniques include- optical microscope, stereomicroscope, SEM, EBSD, XRD, hardness test, and corrosion behavior.

Subjects (MTech)

1. Characterization of Materials
2. Thermodynamics of Materials
3. Science and Technology of Welding and Joining
4. Light Metal Alloys for Automotive Industry
5. Process Plant Design-How to setup up a Process Industry
6. Corrosion and Degradation of Materials
7. Advance Metal Forming Technology
8. Structure and Defects

Software Knowledge Catia, Autocad, Matlab, MS office, Solid Works, Minitab, Originlab.

Language Expertise English, Hindi, Odia.

Other Achievements

1. Secretary of Production Engineering Society at IGIT Sarang (2016-2020).
2. Participated in Model United Nations 3.0 held at NIT Rourkela (2017).
3. Passed 5th Year Visarad in Hindustani Classical (2016).
4. Passed 2nd Year Exam in Odissi dance (2016).
5. Academic Excellence Award for outstanding performance in 10th standard (2014).

Extracurricular Activities Dancing.

Declaration
I declare that the above particulars are accurate to the best of my knowledge and belief .
(Ms. Ankita Mohanty)
Date: 29/01/2022
Place -IIT Gandhinagar, India.