



मोतीलाल नेहरू राष्ट्रीय प्रौद्योगिकी संस्थान इलाहाबाद
इलाहाबाद-२११००४ [भारत]
Motilal Nehru National Institute of Technology Allahabad
Allahabad-211004 [India]

Binayaka Nahak

Assistant Professor

Mechanical Engineering Department

MNNIT Allahabad, Prayagaraj (U.P)

1. [a] Externally Sponsored R&D Project[s] as PI/Co-PI

| Sl. No. | Title of Project | Period | Sponsoring Organisation | Amount [in lakhs] | Co-Investigator[s], if any | Role |
|---------|---|--------------------------------------|---|---|----------------------------|--|
| 1 | Optimal parameter setting and experimental characterization of tubular component using warm hydro-forming | 1 Year (18.06.2019 to 30.09.2020) | National Project Implementation Unit (NPIU), A unit of MHRD, Govt. of India for implementation of World bank assisted Projects in technical education (TEQIP Collaborative Research Scheme) | Rs.13,83000/- (Thirteen Lakh Eighty Three Thousand Only) | Co-Principal Investigators | Co-Principal Investigators (as Mentor) |

2. Details of Ph.D. Thesis (thesis submitted/Pursuing) as Sole Supervisor / 1stSupervisor / Co-supervisor

| Sl. No. | Broad Area | Role | Institute | Name of student[s] | Co-Supervisor[s], if any | Year | Status [Awarded/ Submitted] |
|---------|--|------------|-----------------|---|--------------------------|------|-----------------------------|
| 1 | Non-Destructive Testing of various ferromagnetic material via hybrid manufacturing Process | Supervisor | MNNIT Allahabad | Mr. Anurag Chaudhary (Reg. No.2019RME02), | NIL | 2019 | Pursuing |
| 2 | Micro-nano Surface analysis of different Automobile Components | Supervisor | MNNIT Allahabad | Mr. Govind Murari (2020RME03) | Dr. Tej Pratap | 2020 | Pursuing |

3. Journal Papers since last promotion [paid journals not allowed]

[a] Papers published/accepted/under review/submitted in SCI/SCIE Journals

| Sl. No. | Author (s) | Role (First author / Main Supervisor / Co-author) | Title of the paper | Name of Journal | Vol. No. | ISBN/ISSN No. | Page No. From to | Year |
|---------|--|---|---|---|----------|---------------|------------------|------|
| 1 | Binayaka Nahak, Ashish Srivastava, M. Z. Khan Yusufzai | First author | Surface Integrity Assessment Upon Electric Discharge Machining of Die Steel Using | The Indian Institute of Metals (SCIE, Springer) TIIMS | 73 | 967–974(2020) | 967 to 974 | 2020 |

| | | | | | | | | |
|--|---------------------|--|---|--|--|--|--|--|
| | ,Meghanshu Vashista | | Non-Destructive Magnetic Barkhausen Noise Technique | | | | | |
|--|---------------------|--|---|--|--|--|--|--|

[b] Papers published/accepted in Scopus Indexed Journals

| Sl. No. | Author (s) | Role (First author / Main Supervisor or / Co-author) | Title of the paper | Name of Journal | Vol. No. | ISBN/ISSN No. | Page No. From to | Year |
|---------|---|--|---|---|---|---------------|------------------|------|
| 1 | Binayaka Nahak and Ankur Gupta | First Author | A review on optimization of machining performances and recent developments in electro discharge machining | Manufacturing Review | Vol.6, Issue 2 Accepted: 17 December 2018/ doi.org/10.1051/mfreview/2018015 | 22654224 | 1-22 | 2019 |
| 2 | Binayaka Nahak, Mohd. Zaheer Khan Yusufzai and Meghanshu Vashista | First author | Monitoring of EDMed surface using Barkhausen Noise Technique | International Journal of Applied Engineering Research | Vol. 12, Issue 17 | 0973-4562 | 6641-6646 | 2017 |

| | | | | | | | | |
|---|---|--------------|--|---|---|--|-----------|------|
| 3 | Binayaka Nahak, Mohd. Zaheer Khan Yusufzai and Meghanshu Vashista | First author | Correlation between surface integrity of EDMed high carbon high chromium die steel with Barkhausen Noise | International Journal of Applied Engineering Research | Vol. 12, Issue 16 | 0973-4562 | 5709-5714 | 2017 |
| 4 | Nadeem akhtar, Satyendra kumar pate, Sunil Kumar Gupta, Binayaka Nahak & Anil Kumar | Co-author | Durability Analysis of Lap joint Bonded with Polymer nanocomposite adhesive | International Journal of Mechanical and Production Engineering Research and Development (IJMPERD) | Vol. 10, Special Issue, Aug 2020, 181–188 | ISSN(P): 2249–6890; ISSN(E): 2249–8001 | 181–188 | 2020 |

4. Papers published/accepted in Conference Proceedings indexed in SCI/Scopus/ Web of Science/ or any internationally renowned conference.

| Sl. No. | Author(s) | Title of the paper | Role (First author / Main Supervisor / Co-author) | Name of Conference and dates | Vol. No. Of the Proceedings | ISBN/ISSN No. | Indexed in |
|---------|---------------------|------------------------------|---|--|-----------------------------|---------------|------------|
| 1 | Farry bozz, Santosh | Development of Hydro-forming | Co-author | 4 th International & 25 th All India Manufacturing Technology, | - | - | - |

| | | | | | | | |
|----------|---|--|----------------|--|---|---|---|
| | kumar, S.N.Ojha, Binayaka Nahak | setup and product characterization | | Design and Research Conference AIMTDR, December 14-16 2012, Jadavpur University Kolkata | | | |
| 2 | Binayaka Nahak, Pragya Gupta | Effect of pulse current on material removal rate (MRR) of Mild steel | Main Author | International Conference on Agile Manufacturing (ICAM) 2012. December 16-19 IIT-BHU | - | - | - |
| 3 | Binayaka Nahak, Vijay kumar Manjhi,Nites h Tiwari ,Puneet Sonker,M.K Gupta | Experimental Investigation of Noise of Steels using Barkhausen Noise Analyzer | Main Author | International conference on advanced and agile manufacturing systems – December 28-29 2015, KNIT Sultanpur | - | ISBN: 978-93- 85777-03- 5 | - |
| 4 | Tarun Bhardwaj, Binayaka Nahak, Mukul Shukula | Hemispherical Deep drawing Sheet hydroforming Experimental studies and finite element Simulation. | Co- author | ICMMSA-2014, CIR.MNNIT- Allahabad | - | ISBN:978- 93-392- 20198 ISBN(10): 93-392- 2019-6 | - |
| 5 | Manoj Gupta, Binayaka Nahak | Tensile and Flexural Properties of Short Banana Fibre Reinforced | Co- author | National Conference On Futuristic in Mechanical Engineering, March 8-9 MMMUT Gorakhpur, 2014 | - | 978938384 2209 | - |

| | | | | | | | |
|----------|--|---|----------------------|---|-----------|--|--------------------------|
| | | Epoxy composite | | | | | |
| 6 | Binayaka Nahak | Experimental study of Titanium and Nickel coated sheet in sheet hydro-forming set up. | Main author | International conference on Agile Manufacturing System-2015 December 28-29, 2015 | - | - | - |
| 7 | Binayaka Nahak, M. K. Gupta, Anil Kumar | Mechanical and Water Absorption Properties of Sisal Composites: Effect of Charcoal Particles Loading | First Author | 9 th International Conference of Materials Processing and Characterization, ICMPC-2019, Materials Today: Proceeding GRIET college , Hyderabad, India 08-10 March, 2019 | 18 | https://doi.org/10.1016/j.matpr.2019.07.314 (Accepted) | Scopus (Elsevier) |
| 8 | M. K. Gupta, Ajaya Bharti , Binayaka Nahak , Niraj Choudhary, Anil Kumar | Thermal Characteristics of Sisal Composites Containing Charcoal Particles | Co-author | 9 th International Conference of Materials Processing and Characterization, ICMPC-2019, Materials Today: Proceeding Hyderabad, India 08-10 March, 2019 | 18 | https://doi.org/10.1016/j.matpr.2019.07.193 (Accepted) | Scopus (Elsevier) |
| 9 | Shiv Sunder Singh, Akash Subhash Awale, Anurag Chaudhari, Binayaka Nahak | Monitoring the microstructural changes of heat treated medium carbon steel by Barkhausen noise and hysteresis loop techniques | Corresponding author | 10 th International Conference of Materials Processing and Characterization, ICMPC-2020, Materials Today: Proceeding, GLA, Mathura, India March | 26 | https://doi.org/10.1016/j.matpr.2020.02.241 (Accepted) | Scopus (Elsevier) |

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|----|--|--|-----------|---|--|-------------------------|----------------------------------|
| 10 | Sunil Kumar Gupta, Mrityunjay Kumar Sinha, Binayaka Nahaka | A CFD analysis of vertical plate with square pin fin heat sink in natural convection | Co-author | International Conference on Energy and Environmental Technologies for Sustainable Development February, 14-16, 2020, MNNI Allahabad | | ISBN: 978-93-86238-86-3 | - |
| 11 | Satyendra Kumar Patel, Ashwani Pratap, Priyabrata Sahoo, Binayaka Nahak and Tej Pratap | Cutting force analysis in micromilling of Al6061-SiCp composite | Co-author | National Conference on Research and Developments in Material Processing, Modelling and Characterization 2020 (RDMPMC20) | | Accepted | Scopus (Springer Chapter) |
| 12 | Satyajeet Kumar, Anshul Yadav, Virendra Patel, Binayaka Nahak, Anil Kumar | Mechanical Behaviour of SiC Particulate Reinforced Cu Alloy based Metal Matrix Composite | Co-author | Materials Today: Proceedings, September 11, 2020, IIT-Hyderabad | | Accepted | Scopus (Elsevier) |

5. Departmental activities identified by HODs like lab in charge, or department level committee for a min period of 1 yr.

| Sl. No. | Activity | No. of Years | Period | |
|---------|--|--------------|------------|-------------|
| | | | From | To |
| 1 | O.C, Foundry, Forming and Plastic Lab. | 2 Years | 21.09.2017 | 29.09.2019 |
| 2 | Dy. O. C, Drawing Lab | 1 year | 24.07.2013 | 23.07.2014 |
| 3 | D.U.G.C member | 1 year | 26.07.2018 | 26.07. 2019 |

6. Length of service over and above the relevant minimum teaching experience required for a given cadre.

| Sl. No. | Current cadre | Experience in Current Cadre | Over and above teaching experience |
|---------|--|-----------------------------|------------------------------------|
| 1 | Assistant Professor (Regular) Pay band 3, AGP 6000/- | 7 Years 9 months | 12 days |

7. Subject Teaching for both PG& UG students.

| Sl. No. | Name of the Course | Total teaching hours per week |
|---------|------------------------------------|-------------------------------|
| 1 | Product Design and Development and | 4 |
| 2 | Industrial Engineering | 4 |
| 3 | Advance Welding Technology | 4 |
| 4 | Metal Forming & Analysis | 4 |
| 5 | Basic Manufacturing | 1 |

8. PG Dissertation Guided

| Sl. No. | Title of Dissertation /Project | Department/ Institute | | Name of student[s] | Co-Supervisor[s], if any | Year |
|---------|--|-----------------------|-----------------|-------------------------|--------------------------|------|
| 1 | Product Characterization and counter pressure estimation in sheet hydro-forming setup | MED | MNNIT Allahabad | Pushpedra Singh Chauhan | NIL | 2014 |
| 2 | Experimental and Finite Element simulation of hemispherical cup deep drawing process using sheet hydroforming setup | MED | MNNIT Allahabad | Tarun Bhardwaj | Prof. Mukul Shukla | 2014 |
| 3 | Simulation analysis of modified single slope solar still | MED | MNNIT Allahabad | Shyam Bihari-Kaushal | NIL | 2014 |
| 4 | A comparative study of surface integrity of MRR and surface integrity of Die steel and Al- alloy using Electro Discharge Machining | MED | MNNIT Allahabad | Amit Kumar Srivastava | NIL | 2014 |
| 5 | Experimental Study of Titanium and Nickel coated sheet using Sheet hydro-forming setup | MED | MNNIT Allahabad | Vijay Kumar Ratre | NIL | 2015 |
| 6 | Barkhausen Noise Analysis setup fabrication and signal | MED | MNNIT Allahabad | Vijay Kumar Manjhi | NIL | 2015 |

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|----|---|-----|-----------------|-----------------------|-----------------------|------|
| | Analyser of Ferromagnetic Steel | | | | | |
| 7 | Experimental Assessment of surface integrity of Inconel -825 in wire-EDM. | MED | MNNIT Allahabad | Nitesh Tiwari | NIL | 2016 |
| 8 | Experimental analysis of corrosion test of Al alloy under salt spray method | MED | MNNIT Allahabad | Neetu Chaudhary | NIL | 2016 |
| 9 | Design of unit load package for logistic o Diaster management. | MED | MNNIT Allahabad | Dasraju Dilip Kumar | NIL | 2016 |
| 10 | Copper and graphite electrode performance in EDM of die steel | MED | MNNIT Allahabad | Puneet Kumar Sonekar | Dr. Manoj Kumar Gupta | 2016 |
| 11 | Effect of hot forging on mechanical properties of Mg alloy (AZ31) for the application of automotive | MED | MNNIT Allahabad | Suneel Kumar | NIL | 2017 |
| 12 | Effect of Minimum Quantity Lubrication using distilled Water | MED | MNNIT Allahabad | Ramapati Awasthi | NIL | 2017 |
| 13 | Solid particle erosion behavior of Inconel 825 on air jet erosion test rig | MED | MNNIT Allahabad | Shivprakash Tripathi | NIL | 2017 |
| 14 | Finite element simulation of tube hydro-forming. | MED | MNNIT Allahabad | Dharmendr Kumar Singh | NIL | 2018 |
| 15 | Experimental Investigation on EN10130 Component | MED | MNNIT Allahabad | Ashish Goel | NIL | 2019 |

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|----|---|-----|-----------------|-----------------------|----------------|----------|
| | Prepared by Sheet hydro-forming Process | | | | | |
| 16 | Characterization of Annealed, Normalized and Quenched medium carbon steel (En8) using Barkhausen Noise Analysis | MED | MNNIT Allahabad | Maneesh Mishra | NIL | 2019 |
| 17 | Investigation of microchip formation in aluminium based composite | MED | MNNIT Allahabad | Satyendra Kumar Patel | NIL | 2020 |
| 18 | Micromagnetic Analysis of Heat Treated Medium Carbon Steel (EN8) | MED | MNNIT Allahabad | Shiv Sunder Singh | NIL | 2020 |
| 19 | Study the effect of MQL machining on nimonic 90 alloy | MED | MNNIT Allahabad | Ali Hamza | NIL | Pursuing |
| 20 | Minimum quantity lubrication assisted milling of 316L austenitic steel | MED | MNNIT Allahabad | Gaurav Gupta | NIL | Pursuing |
| 21 | Investigation of Inconel Superalloy characteristics during Wire Electric Discharge Machining | MED | MNNIT Allahabad | Amitesh Kumar Sundram | NIL | Pursuing |
| 22 | Micro manufacturing of Al base MMC | MED | MNNIT Allahabad | Prashant Kumar Gupta | Dr. Tej Pratap | Pursuing |

9.UG Dissertation Guided

| Sl. No. | Title of Dissertation /Project | Department/ Institute | | Co-Supervisor[s], if any | Year |
|---------|---|--------------------------|-----------------|--------------------------|------|
| 1 | Development of Pneumatic vice setup | MED | MNNIT Allahabad | NIL | 2013 |
| 2 | Design and Optimization of Steering Knuckle for independent suspension. | MED | MNNIT Allahabad | NIL | 2015 |

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|---|--|-----|-----------------|-----|----------|
| 3 | Investigation on water taps and plumbing system of multi-storey building | MED | MNNIT Allahabad | NIL | 2016 |
| 4 | Design and fabrication of plane electrolytic magnetic abrasive machining setup | MED | MNNIT Allahabad | NIL | 2018 |
| 5 | Retrofitting of mechanical power hammer & investigation of advanced forging technologies | MED | MNNIT Allahabad | NIL | 2020 |
| 6 | Design and Development of Plunger Type Vertical Injection Moulding Machine | MED | MNNIT Allahabad | NIL | 2020 |
| 7 | Experimental investigation of process parameters and microstructural behavior of steel during cold rolling | MED | MNNIT Allahabad | NIL | Pursuing |
| 8 | Optimal parameter & experimental Characterization of steel using Seam Welding Process | MED | MNNIT Allahabad | NIL | Pursuing |

10. Significant Outreach Institute Activities.

| Sl. No. | Nature of Activity | Activity Title | Department / Institute | Period | | Sponsoring Agency (if any) |
|---------|--|--|--|-------------------------------|-------------------------------|---|
| | | | | From | To | |
| 1 | Expert Lecture deliver at Department of Mechanical Engineering, JS University, Shikohabad, Firozabad | Expert Lecture on topic " Recent Development in Electro discharge Machine" | MED, JS University, Shikohabad , Firozabad-283135 (U.P), India | 24/08/2019 Time: 3 to 5 PM | 24/08/2019 Time: 3 to 5 PM | MED, JS University, Shikohabad, Firozabad-283135 (U.P), India |
| 2 | Expert Lecture deliver at Department of | Expert Lecture on topic " Recent Development in | MED, JS University, Shikohabad | 28/09/2019 Time: 3 to 5 PM | 28/09/2019 Time: 3 to 5 PM | MED, JS University, Shikohabad, |

| | | | | | | |
|---|--|---|--|--|--|---|
| | Mechanical Engineering, JS University, Shikohabad, Firozabad | Hydro-forming Process" | , Firozabad-283135 (U.P), India | | | Firozabad-283135 (U.P), India |
| 3 | Ph. D. thesis evaluation | Ph. D. thesis evaluation Title: Supplier Selection for procurement: A quantitative Approach" | MED, JS University, Shikohabad , Firozabad-283135 (U.P), India | 5/9/2019 | 30/9/2019 | MED, JS University, Shikohabad, Firozabad-283135 (U.P), India |
| 4 | M. Tech thesis evaluation & examiner a | M. Tech Thesis evaluation and examiner Title: Casting & Characterization of Aluminium based metal Matrix composite | MED, KNIT Sultanpur, U.P (India) | 24/01/ 2018, Thesis Reference No.7887/6/PF/2018/818/3/17 | 24/01/ 2018, Thesis Reference No.7887/6/PF/2018/818/3/17 | KNIT, Sultanpur, U.P (India) |

11. Any other relevant information: With reference letter no. GAIL/NOIDA/R&D/PP-NIT/2019 dated 21.08.2019

regarding new research & development project proposals. I have submitted a project proposal title " **Enhanced oil recovery using CO₂ injection using computational approach** " to GAIL (India) with estimated budget **Rs 23,35,520/-** including overhead budget of **Rs 2,12,320/-**.

Declaration

I hereby declare that the information furnished above is true to the best of my knowledge and belief.