

Dr. Aruna Thakur

Assistant Professor
Department of Manufacturing Engineering NIFFT, Hatia, Ranchi
Phone: +91-8839495519, +91-9039877149
Email: aruna07thakur@gmail.com

Areas of Interest: Micromachining, Advanced machining processes, Non-traditional Manufacturing, surface texturing

Academic Profile:

| Degree/ Examination | University/Board | Year of Passing | Institute/Board |
|----------------------------------|----------------------|--------------------|----------------------------------------------|
| Ph.D Mechanical | NIT Rourkela | 2016 | National Institute of Technology Rourkela |
| M.Tech, Mechanical | GBPUA&T Pantnagar | 2009 | Pantnagar University |
| B.Tech Mechanical Engineering | IET Kanpur | 2006 | Kanpur University |
| 12 th | KVM Kanpur | 2001 | Uttar Pradesh Board |
| 10 th | KVM Kanpur | 1999 | Uttar Pradesh Board |

M.Tech thesis:

Experimental investigation and ANN prediction of crack growth rate and crack growth of a multiple cracks.

PhD thesis:

Influence of Advanced Coated Tools on Machinability Characteristics of Incoloy 825.

Teaching and research experience details

| Institute | Designation | Duration | | Nature of work |
|---------------------------------------------|--------------------------------------------------------------------|--------------|-----------------|----------------------------------------------------------------|
| | | From | To | |
| NIFFT,Hatia, Ranchi | Assistant Professor | 01/July/2019 | continue | Teaching and research |
| Indian Institute of Technology Bombay | Postdoctoral Fellow (PDF) | 05/06/2018 | 25 June 2019 | Research |
| CEC Bilaspur (C.G.) | Assistant Professor, Department of Mechanical Engineering | 22-12-2011 | 10-05- 2018 | Teaching and research (excluding 3 years study leave) |

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|-------------------------------|--------------------------------------------------------------------|------------|----------------|--------------------------|
| ITGGU Koni Bilaspur (C.G.) | Assistant Professor, Department of Mechanical Engineering | 10-07-2010 | 10-09- 2011 | Teaching and research |
|-------------------------------|--------------------------------------------------------------------|------------|----------------|--------------------------|

Award(s) / Honour(s) / Fellow details

| Type | Name of Award/Honour/Fellow | Organization Presenting Award/Honour/Fellowship | Year |
|-------|------------------------------------------------------------------------|-------------------------------------------------|------|
| Award | 16 th Chhattisgarh Young scientist award-2018 | Chhattisgarh Council of Science and Technology | 2018 |
| Award | Snigdhashri Patra Memorial Gold Medal for best Ph.D. thesis of 2015-16 | National Institute of Rourkela, | 2017 |
| Award | Ph.D. Fellowship | MHRD, Govt. of India | 2013 |
| Award | M.Tech Fellowship | MHRD, Govt. of India | 2007 |

Publications:

- International Journal : 17
- International Conference : 09

List of Journals

1. **Thakur, A.,** Gangopadhyay, S., State-of-the-art in surface integrity in machining of nickel-based super alloys, **International Journal of Machine Tools and Manufacture**, 100 (2016) 25–54.
2. **Thakur, A.,** Gangopadhyay, S., Influence of tribological properties on the performance of uncoated, CVD and PVD coated tools in machining of Incoloy 825, **Tribology International**, 102 (2016) 198–212.
3. **Thakur, A.,** Gangopadhyay, S., Dry machining of nickel-based super alloy as a sustainable alternative using TiN/TiAlN coated tool, **Journal of Cleaner Production**, 129, 2016, 256–268.
4. **Thakur, A.,** Mohanty, A., Gangopadhyay, S., Comparative study of surface integrity aspects of Incoloy 825 during machining with uncoated and CVD multilayer coated inserts, **Applied Surface Science**, 320 (2014) 829–837.
5. **Thakur, A.,** Gangopadhyay, S., Maity, K.P., Sahoo, S.K., Evaluation on Effectiveness of CVD and PVD Coated Tools during Dry Machining of Incoloy 825, **Tribology Transactions**, 2015, Vol. 59, Iss. 6, 2016, 1048-1058 DOI: 10.1080/10402004.2015.1131350.
6. **Thakur, A.,** Gangopadhyay, S., Maity, K.P., Effect of cutting speed and CVD multilayer coating on the machinability of Inconel 825, **Surface Engineering**, 30 (2014) 516-523.
7. **Thakur, A.,** Gangopadhyay, S., Mohanty, A., Investigation on Some Machinability Aspects of Inconel 825 during Dry Turning, **Materials and Manufacturing Processes**, 30 (2015) 1026–1034.

8. **Thakur, A.**, Gangopadhyay, S., Maity, K.P., Mohanty, A., Experimental assessment on performance of TiN/TiCN/Al₂O₃/ZrCN coated tool during dry machining of Nimonic C-263, **International Journal of Machining and Machinability of Materials**, Accepted, 2015.
9. Koyilada B., Gangopadhyay, S., **Thakur, A.**, Comparative evaluation of machinability characteristics of Nimonic C-263 using CVD and PVD coated tools, **Measurement**, 85 (2016) 152–163.
10. Mohanty, A., Gangopadhyay, S., **Thakur, A.**, On Applicability of Multilayer Coated Tool in Dry Machining of Aerospace Grade Stainless Steel, **Materials and Manufacturing Processes**, 2015, DOI: 10.1080/10426914.2015.1070413.
11. Sahoo, S., **Thakur, A.**, Gangopadhyay, S., Application of Analytical Simulation on Various Characteristics of Hole Quality during Micro-Drilling of Printed Circuit Board, **Materials and Manufacturing Processes**, 2015, DOI: 10.1080/10426914.2016.1140189.
12. **Thakur, A.**, Gangopadhyay, S., Evaluation of micro-features of chips of Inconel 825 during dry turning with uncoated and chemical vapour deposition multilayer coated tools, **Proc IMechE Part B: J Engineering Manufacture**, 2018, DOI: 10.1177/0954405416661584.
13. Deepayan Gope, Prakash Chandra Gope, **Aruna Thakur**, Abhishek Yadav, Application of artificial neural network for predicting crack growth direction in multiple cracks geometry, **Applied Soft Computing** 30 (2015) 514–528.
14. Gope, D., Gope, P.C., **Thakur, A.**, Influence of crack tip and crack offset distance on crack interaction and growth direction in multiple cracks, **International Journal of Structural Integrity** 4 (2013) 321–348.
15. Gope, P.C., **Thakur, A.**, Experimental investigation of crack growth direction in multiple cracks, **Fatigue & Fracture of Engineering Materials & Structures** (2011) 00, 1–12.
16. **ArunaThakur**, MukeshTak, Rakesh G.Mote, Electrochemical micromachining behavior on 17-4 PH stainless steel using different electrolytes. NAMRC 2019 at Erie, Pennsylvania, US, published in **Procedia Manufacturing, Volume 34, 2019, Pages 355-361.**
17. **Thakur, A.**, Gangopadhyay, S., Maity, K.P., Effect of cutting speed and tool coating on machined surface integrity of Ni-based super alloy, 6th CIRP Conference on High Performance Cutting, HPC 2014 at UC, Berkeley, US, Published in **Procedia CIRP**, 14(2014) 541-545.

International conference

1. **Thakur, A.**, Dewangan, S., Y. Patnaik, Gangopadhyay, S., Prediction of Work Hardening during Machining Inconel 825 using Fuzzy Logic Method, ICAMME-2014 at NIT Surathkal Published in **Procedia Materials Science**, 5 (2014) 2046–2053.
2. **Thakur, A.**, Mohanty, A, Gangopadhyay, S., Maity, K.P., Tool wear and chip characteristics during dry turning of Inconel 825, ICAMME-2014 at NIT Surathkal Published in **Procedia Materials Science**, 5 (2014) 2169–2177.
3. **Thakur, A.**, Gangopadhyay, S., Maity, K.P., Study on effect of cutting parameters on the machinability of Inconel 825, International Conference on Surface Finishing for

Research and Industrial Applications INTERFINISH- SERIA 2013, Rajalakshmi Engineering College, Chennai.pp.48-55.

4. **Thakur, A.**, Gangopadhyay, S., Maity, K.P. Experimental investigations on tool wear and chip characteristics of Inconel 825, International Conference on Smart Technologies for Mechanical Engineering (STME-2013), Delhi Technical University, Delhi, pp. 760-764.
5. **Thakur, A.**, Mohanty, A, Gangopadhyay, S., Maity, K.P., Performance Evaluation of CVD Multilayer Coating on Tool Wear Characteristics during Dry Machining of Nimonic C-263, AIMTDR-2014, IIT Guwahati from 12-14 December, 2014.
6. Azim, S., Gangopadhyay, S., **Thakur, A.**, Evaluation of chip characteristics of Inconel 825 during dry turning with uncoated and CVD multilayer coated tool, COPEN-2015, December 10-12, 2015, IIT Bombay.
7. M. Singh, **A. Thakur**, S. Gangopadhyay, Comparative evaluation on Machinability Aspects of Inconel 825 using TiN/TiAlN and Al₂O₃/TiCN coated tool, COPEN-2015, December 10-12, 2015, IIT Bombay.
8. **Thakur, A.**, Azim, S., Gangopadhyay, S., Micro Features Of Chips During Machining Of Incoloy 825 Using Pvd Coated And Uncoated Carbide Tools. 10th International Conference on Precision, Meso, Micro and Nano Engineering, 07-09 Dec 2017, IIT Chennai.
9. Azim, S., **Thakur, A.** Gangopadhyay, S., Evaluation of Chip Characteristics under Dry and Wet Environment using Coated and Uncoated Tool, COPEN-2019, 12-14 Dec 2019, IIT Indore.