Dr. NAVEEN KUMAR

Assistant Professor
Department of Mechanical Engineering
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Google Scholar
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Scopus ID: **59725405400**

Research Interests:

- Advanced Welding Technologies
- Metal Additive Manufacturing
- Robotic Welding and Process Monitoring
- Material Characterization Techniques
- Smart Manufacturing
- Industry 4.0 and Automation
- Surface Engineering, Erosive Wear

Academic Qualifications:

Degree	Stream	Institution/Board
Ph.D.	Mechanical Engg. (Production)	Indian Institute of Technology Roorkee
M. Tech.	Mechanical Engg.	Indian Institute of Technology Roorkee
B. Tech.	Mechanical Engg.	Gautam Buddha Technical University, Lucknow (Now AKTU)
Class XII	Science (PCM)	Government Inter College Bijnor (U.P. State Board)
Class X	Science	Government Inter College Bijnor (U.P. State Board)

Professional Experience:

- Assistant Professor, Mechanical Engineering Department, I.E.T. Lucknow, July 2026 – Till date
- Assistant Professor, Mechanical Engineering Department, UPES, Dehradun, June 2024– July 2026
- Assistant Professor, Bajaj Engineering Skills Training Center, UPES, Dehradun, Mar 2025-July 26
- Institute Post-Doctoral Fellow, Department of Mechanical Engineering, Indian Institute of Technology Delhi, May 2022- May 2024
- Assistant Professor (On Contract), Mechanical Engineering Department, I.E.T. Lucknow, Sept 2021-May 2022

Students Guided: **M. Tech: 04** **B. Tech: 08**

Research Publications: **Total: 21** **SCI Journals: 12** **Int. Conf: 08** **National Conf: 01**

Book Chapters: **Total: 04**

International Journals:

1. **Naveen Kumar**, Abhishek Das, Navneet Arora, and Sachin Sirohi 'Role of Nitrogen in Shielding Gas on Slurry Erosion Performance of Duplex Steel Weld Beads Deposited on Nitrogen-Alloyed Austenitic Steel' **Journal of Materials Engineering and Performance,** December 2025, Vil. 35, pp. 12156–12166 (**SCIE**, **Q4, IF 2**). DOI: https://doi.org/10.1007/s11665-025-12934-4

2. Rukaiya Azami, Aviral Rastogi1, Shewtank Srivastav, **Naveen Kumar,** Abhishek Das, 'Enhancing Cold Metal Transfer Welded Aluminium Joints with Post-Weld Heat Treatment for Electric Vehicle Battery Tray Applications' **Journal of Materials Engineering and Performance,** September 2025 (**SCIE**, **Q4, IF 2**). DOI: https://doi.org/10.1007/s11665-025-12198-y

3. A. K. Maurya, **Naveen Kumar**, Chandan Pandey and Rahul Chhibber, 'Structure-property relationship assessment of dissimilar gas tungsten arc welded joint of pipeline steel and super duplex stainless steel for marine applications,' **Archives of Civil and Mechanical Engineering**, Vol. 24, May 2024, (**SCIE, Q1, IF 4.4**) DOI: https://doi.org/10.1007/s43452-024-00977-8

4. **Naveen Kumar,** Abhishek Das, Sagar Sarkar, and Navneet Arora, 'Improving erosion resistance through solution treatment of nitronic and martensitic steels for slurry erosive applications', in **Wear Journal,** Vol. 531, July 2023. (**SCI, Q1, IF 5.3**) DOI: https://doi.org/10.1016/j.wear.2023.205060

5. A. K. Maurya, **Naveen Kumar**, Rahul Chhibber & Chandan Pandey, 'Study on microstructure–mechanical integrity of the dissimilar gas tungsten arc weld joint of sDSS 2507/X-70 steels for marine applications', **Journal of Materials Science**, Vol 58, 11392–11423, July 2023. (**SCI, Q2, IF 3.9**) DOI: https://doi.org/10.1007/s10853-023-08723-w

6. S. Sirohi, **Naveen Kumar,** Amit Kumar, S. Pandey, B. Adhithan, D. Fydrych, C. Pandey,'Metallurgical characterization and high-temperature tensile failure of Inconel 617 alloy welded by GTAW and SMAW- A comparative study' Proc IMechE Part L: **Journal of Materials: Design and Applications**, 1-22, 2023. (**SCI, Q3, IF 2.67**)DOI: https://doi.org/10.1177/14644207231171266

7. C. Pandey, **Naveen Kumar**, S. Sirohi, T. Rajasekaran, S. Kumar, P. Kumar, 'Study on the effect of the grain refinement of the P92 base metal on mechanical properties of the welded joint', **Journal of Materials Engineering and Performance,** Jan. 2022 (**SCIE**, **Q4, IF 2.2**).
DOI: https://doi.org/10.1007/s11665-021-06536-z

8. **Naveen Kumar**, and Navneet Arora, 'Effect of solution treatment on slurry erosive wear performance of martensitic and nitrogen strengthened austenitic stainless steel', **Materials Letters,** Vol 284, Part-1, 128932, Feb. 2021. (**SCI, Q2, IF 2.7**). DOI: https://doi.org/10.1016/j.matlet.2020.128932

9. **Naveen Kumar**, Navneet Arora and S. K. Goel, 'Slurry Erosion Study on Nitrogen Alloyed Austenitic Stainless Steel and Weld Beads, **Tribology Letters,** Vol. 68, Issue 3, 1-16, August 2020. (**SCI, Q2, IF 2.9**) DOI: https://doi.org/10.1007/s11249-020-01332-7

10. **Naveen Kumar**, Navneet Arora and S. K. Goel, 'Weld joint properties of nitrogen-alloyed austenitic stainless steel using multi-pass GMA welding, **Archives of Civil and Mechanical Engineering**, Vol. 20, Issue 3, 1-13, June 2020. (**SCIE, Q1, IF 4.4**). DOI: https://doi.org/10.1007/s43452-020-00087-1

11. **Naveen Kumar**, Navneet Arora and S. K. Goel, 'Study on Metallurgical and Mechanical Aspects of GMA Welded Nitronic Steel Under the Influence of Weld Quenching', **Journal of Manufacturing Processes**, 56, 116-130, August 2020. (**SCIE, Q2, IF 6.1**).
DOI: https://doi.org/10.1016/j.jmapro.2020.04.050

12. **Naveen Kumar**, Navneet Arora, S.K. Goel, 'Effect of base metal solution annealing on mechanical and metallurgical properties of GMA welded Nitronic steel' in **Materials Science & Engineering A**, 771, Jan 2020. (**SCIE, Q1, IF 6.1**). DOI: https://doi.org/10.1016/j.msea.2019.138542

Submitted/Under review:

13. **Naveen Kumar**, Navneet Arora, A. K. Sharma, 'Study the effect of nitrogen content in filler wire and shielding gas on weld joint properties of nitrogen-containing steel, Materials Today Communications. (Submitted)

Conference Publications/Presentations:

14. **Naveen Kumar**, Navneet Arora, A. K. Sharma, 'Study the effect of nitrogen content in filler wire and shielding gas on weld joint properties of nitrogen-containing steel' at **Young Professionals International Conference (YPIC-2025) by IIW India,** held on 5-6 Sept. 2025 at NSUT, Delhi.

15. Vijay Sharma, Bag Suman, **Naveen Kumar,** Abhishek Das, 'Quantifying energy vs time mode variations obtained from ultrasonic metal welded busbar-to-busbar joints' **9th International and 30th All India Manufacturing Technology, Design, and Research Conference** (AIMTDR2023) from 08 to 10 December 2023, **IIT (BHU) Varanasi**. DOI: https://link.springer.com/chapter/10.1007/978-981-95-3754-9_18

16. **Rukaiya** Azami, Aviral Rastogi1, Shwetank Srivastav, **Naveen Kumar,** Abhishek Das, 'Feasibility Analysis of welding aluminium alloy using Cold metal transfer (CMT) process for EV battery tray fabrication' **9th International and 30th All India Manufacturing Technology, Design, and Research Conference** (AIMTDR2023) from 08 to 10 December 2023, **IIT (BHU) Varanasi**.

17. **Naveen Kumar,** Abhishek Das, Sagar Sarkar, and Navneet Arora, 'Slurry erosion behavior of bead-on-plate welds made on nitrogen containing steel using GTA welding process' **9th International and 30th All India Manufacturing Technology, Design, and Research Conference** (AIMTDR2023) from 08 to 10 December 2023, **IIT (BHU) Varanasi**.

18. **Naveen Kumar,** Abhishek Das, Sagar Sarkar, and Navneet Arora, 'Effect of Cooling Rate on Weld Joint Properties of Nitrogen–Alloyed Steels' **International Conference** on Welding and Joining from 16 to 21 July 2023, **Singapore**.

19. **Naveen Kumar,** Tinku Kumar, Navneet Arora and D. B. Goel, 'Slurry erosion study on nitrogen alloyed austenitic stainless steel base and weld metals', **International Conference** on Advanced Materials and Mechanical Characterization (ICAMMC 2021) 02 – 04 December 2021, SRM Institute of Science and Technology (SRM-IST) **Chennai**.

20. **Naveen Kumar** and Navneet Arora, 'Welding of Nitrogen Containing Austenitic Stainless Steel Using GMAW Process', 11th **International Conference** on Materials Processing and Characterization (ICMPC 2020), **IIT Indore**, 15 – 17 December, 2020. (**Materials Today: Proc.**, Vol 44 (1), pp. 1964-1968, 2021). DOI: https://doi.org/10.1016/j.matpr.2020.12.102

21. **Naveen Kumar**, Navneet Arora and S. K. Goel, 'Erosive wear study of nitrogen-containing 23-8-N austenitic stainless steel and bead on plate weld using ER2209 stainless steel filler wire', **National Conference** on Advances in Mechanical Engineering, **NIT Delhi**, March 16, 2019. (Lecture Notes in Mechanical Engineering, Springer, Singapore, pp.575-585, 2019).
DOI: https://doi.org/10.1007/978-981-15-1071-7_47

22. **Naveen Kumar**, Navneet Arora, S. K. Goel, D. B. Goel, 'A comparative study of microstructure and mechanical properties of 21-4-N steel weld joints using different filler materials', **International Conference** on Advances in Materials & Processing: Challenges & Opportunities (AMPCO 2017), **IIT Roorkee**, 30 November - 2 December, 2017. (**Materials Today: Proc.**, Vol. 5, Issue 9 (1), pp. 17089-17096, 2018). DOI: https://doi.org/10.1016/j.matpr.2018.04.116

Conference Chair/Invited Talks:

- **Invited talk** in a Short-Term Training Program on 'Additive Manufacturing for Defence Application (AMDA-2025)', organized by MNIT Jaipur and DRDO. **03-07 Mar 2025**

- **Invited talk** in a Faculty Development Program on 'Multi-Disciplinary Education & Research with Emphasis on Indian Knowledge System', Organized by Motherhood University, Roorkee. **21-27 Jan 2025**
- **Invited talk** on 'Tools and techniques for metallurgical characterizations of Additively Manufactured parts' in the one-week high-end workshop on Metal Additive Manufacturing: Fundamentals and Applications (Under KARYASHALA Scheme - A SERB initiative) organized at **Indian Institute of Technology Delhi.** **01 – 07 May 2024**
- **Invited talk** in a workshop on 'Emerging Technologies in Welding Automation &Gas Cutting/Brazing' Organized by Indian Welding Society (IWS) at **Indian Institute of Technology Delhi.** **17 Feb 2024**
- **Invited Talk** on "Erosion behaviour of Nitrogen Containing Steels and bead-on-plate Welds" in International and All India Manufacturing Technology, Design, and Research Conference (**AIMTDR-2023**) at **IIT (BHU) Varanasi**. **08 – 10 Dec 2023**
- **Session Chair** for 'Trends in Materials Processing' in 9th International and 30th All India Manufacturing Technology, Design, and Research Conference (**AIMTDR-2023**) at **IIT (BHU) Varanasi**. **08 – 10 Dec 2023**
- **Session Chair** for Technical Session 'Manufacturing' in 2nd International conference on "Recent Advances in Materials, Manufacturing and Machine Learning (**RAMMML-2023**) held on 2–4 Feb 2023 at Department of Mechanical Engineering, Yeshwantrao Chavan College of Engg. Nagpur, India and technically sponsored by NTPC Group of Colleges, United Kingdom. **2 – 4 Feb 2023**
- **Invited talk** on 'Weldability and erosive wear of nitrogen containing steels' in the one-week high-end workshop on Joining of Advanced Materials (Under KARYASHALA Scheme - A SERB initiative) organized at **Indian Institute of Technology Delhi.** **16 – 22 Jan 2023**
- **Invited talk** on 'Principles and Practices in GMAW Process' in a webinar organized by **The Indian Institute of Welding** (IIW), Chennai Branch. **26 Sept 2021**

Internship/Training:

- **Bharat Heavy Electricals Limited (BHEL) Haridwar:** Turbine manufacturing. **June- July 2010**
- **CADD training Centre Ghaziabad:** Diploma in mechanical CADD **Aug – Oct 2010**

Tools and Technical Skills:

- PLC programming (basic) using TIA (Siemens) software, Integration of PLC and HMI, Hydraulics, and MPS (by Festo), Pneumatic (by Janatics), MES.
- Microsoft Visio, Xpert Highscore Plus, Auto-CAD, Pro-E, Origin, MS-Office, COMSOL etc.
- Welding: GTAW, GMAW, MRSW, CMT, STT, USW, etc. joining processes.
- Characterization: Stereoscopy, Metallography (OM, FESEM, EBSD etc.), Mechanical testing

Honors, Achievements and Fellowships:

- Institute Post Doctorate Fellowship at Indian Institute of Technology Delhi. May 2022 – May 2024
- National Doctoral Research Fellowship by Ministry of Education, Govt. of India. 2015 – 2020
- National Post graduate scholarship by Ministry of Education, Government of India 2013 – 2015

Co-Curricular Activities and Responsibilities:

- Player of runner-up Volleyball team-2019 at Azad Bhawan IIT Roorkee.
- Sports Coordinator at Azad Bhawan, IIT Roorkee in the year 2017-18.
- Member of organizing committee of RS Day 2018 and 2019 held at MIED, IIT Roorkee.

- Member of organizing committee at Annual Function 2010 program organized by The Institution of Engineers (India) at DDPS Ghaziabad.

Workshop and Short-Term Training Program Attended:

- Refresher Course (12 Days) on Subtractive, Additive, and Digital Manufacturing organized by the MMTTC at IIITDM, Kancheepuram, Chennai. 7 – 19 July 2025
- Hands-on training program on 'CNC Integrated Hybrid Metal 3D Printer (Laser Metal Deposition Technique process)' organized by SATHI Foundation, IIT Delhi. 10 Apr 2024
- Workshop on 'Grant Writing & Management in a Nutshell', organized by the India offices of Max-Planck-Gesellschaft and the University of Cologne. 24 – 25 Dec 2022
- FDP on 'Additive Manufacturing: Lab Scale to Field Scale, by IIT Palakkad. 13 – 17 Dec 2021
- FDP on 'Product and Process Innovation: Concepts, Protection and Commercialization' by Design Innovation Center (DIC), IIT Roorkee. 21 – 25 June 2021
- Participated in a course on Introduction to Machine Learning organized by C-DAC and the NSM Nodal Centers for Training in HPC and AI at IIT Goa. Feb – Mar 2021
- Training of Trainers on Policy Based IP Creation & Management, MHRD-IPR Chair, Department of Management Studies, IIT Roorkee. 22 – 26 Feb 2016

Editorial Board Member:

- Scientific Reports

Reviewer to Journals:

- Proceedings of the iMeche, Part E: Journal of Process Mechanical Engineering
- Welding International
- Frontier Robotics and AI
- Journal of Manufacturing Processes
- Advanced Engineering Materials
- International Journal of Advanced Manufacturing Technology
- Journal of Materials Engineering and Performance
- Archives of Civil and Mechanical Engineering

Date: 20 September 2026

Place: Lucknow (Naveen Kumar)