

DR. ZAFAR ALAM

Assistant Professor

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ACADEMIC QUALIFICATION

Doctor of Philosophy

[2019]

Department of Mechanical Engineering, Indian Institute of Technology Delhi, India

Master of Technology

[2014]

Department of Mechanical Engineering, Indian Institute of Technology Delhi, India

Bachelor of Technology

[2012]

Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi, India

Senior Secondary Examinations

[2008]

Senior Secondary School, Jamia Millia Islamia, New Delhi, India

Higher Secondary Examinations

[2006]

St. Anthony's School, Darjeeling, West Bengal, India

TEACHING AND RESEARCH INTEREST

Teaching Interest

- Manufacturing technology/science
- Computer-aided manufacturing
- Industrial automation
- Digital manufacturing

Research Interest

- Magnetic field-assisted finishing/polishing
- Magnetorheological finishing/polishing
- Additive Manufacturing
- Post-processing of additively manufactured parts
- Automation in manufacturing
- Customized CNC controller development
- Cyber-physical systems

AWARDS AND ACHIEVEMENTS

1. "Best Paper Award" at the 3rd International Conference on Advances in Manufacturing, Thermal and Design Engineering (MATHED) held at NIT Hamirpur, India. [26th - 28th December, 2025]

2. “Gandhian Young Technological Innovation (GYTI) Award - 2023” at the India International Centre, New Delhi, India. [05th November, 2024]
3. “Best Paper Award” at the International Conference on Industrial and Manufacturing Systems (CIMS) held at NIT Jalandhar, India. [09th - 11th October, 2020]
4. “Best Paper/poster Award” at the 7th International and 28th All India Machine Tool Design and Research (AIMTDR) Conference held at Anna University, India. [13th - 15th December, 2018]
5. “Gandhian Young Technological Innovation (GYTI) Award - 2017” at the Festival of Innovation held at Rashtrapati Bhawan, New Delhi, India. [05th March, 2017]
6. Winner of the “Best Project in Mechanical Engineering at National Level” at the ISSRD Engineering Students Innovation Challenge. [27th & 28th January, 2017]
7. Winner of the “National Technical Institutes Competition” at the Manufacturing Today Conference & Awards sponsored by Aditya Birla Group and hosted by ITP Publishing Company in Pune, India. [02nd September, 2016]

SPONSORED PROJECTS

1. “Design and Development of 6 DoF Parallel Simulation Platform for Desktop Applications” sponsored by **Axial Aero Private Limited** for INR 36.52 lacs. [Role: PI; Status: Completed]
2. “Development of Algorithms for Collaborative Dual Arm Manipulation and Control” sponsored by **DRDO R & DE (Engineers)** for INR 285.00 lacs. [Role: Co-PI; Status: Completed]
3. “Design and Development of Quadruped Robot for Mining Application” sponsored by **TexMin TIH** for INR 45.00 lacs. [Role: Co-PI; Status: Completed]
4. “Design and Development of Hardware for Controls using Ball Screw/Belt Type Linear Actuators” sponsored by **Janatics India Private Limited** for INR 38.44 lacs. [Role: Co-PI; Status: Completed]

CONFERENCES/SEMINARS/WORKSHOPS ORGANIZED

1. Three-day Hands-on Workshop on “Industrial Automation and Robotics” organized by the Department of Mechanical Engineering, IIT (ISM) Dhanbad, India. [14th - 16th April, 2025]
2. Two-day Executive Development Program on “Integrated Low-Cost Sensors and Automation Technologies for Air Quality Monitoring and Control in Mining Industry” jointly organized by the Department of Environmental Science and Engineering and the Department of Mechanical Engineering, IIT (ISM) Dhanbad, India. [20th & 21st February, 2025]
3. Two-day International conference on “Industrial Problems on Machines and Mechanisms (IPRoMM)” organized by the Department of Mechanical Engineering, IIT (ISM) Dhanbad, India. [22nd & 23rd December, 2022]
4. Two-day lecture series on “Advances and Engineering Challenges in Medical Robotics” organized by the Department of Mechanical Engineering, IIT (ISM) Dhanbad, India. [23rd & 28th September, 2021]
5. Two-day webinar on “Robotics and Automation” organized by the Department of Mechanical Engineering, IIT (ISM) Dhanbad, India. [06th & 07th February, 2021]

6. Four-day webinar on “*Mechanical Engineering Solution to Biomedical Problems*” organized by the Department of Mechanical Engineering, IIT (ISM) Dhanbad, India. [24th - 27th September, 2020]

EXPERT/GUEST LECTURES DELIVERED

1. “*Automation in Manufacturing: A Case Study on the Automated MR Finishing Process*” at the IQAC initiative seminar held at Shree Venkateshwara Hi-Tech Engineering College, Erode, Tamil Nadu, India. [25th February, 2026]
2. “*Automation of CNC and Robot-Assisted MR Finishing Processes*” at the Faculty Development Programme on **Industry 4.0, Sustainable and Green Manufacturing Approaches** held at PDPM IITDM Jabalpur, India. [18th November, 2025]
3. “*Post-processing of Additively Manufactured Parts*” at the DRDO-sponsored **Executive Development Program on Additive Manufacturing** held at IIT (ISM) Dhanbad, India. [22nd September, 2025]
4. “*Automation of Finishing Processes*” at the MMTTP Refresher Course on **Current Trends in Metal Additive Manufacturing** held at IIT (ISM) Dhanbad, India. [13th July, 2025]
5. “*Post-processing of Additively Manufactured Parts*” at the MMTTP Refresher Course on **Current Trends in Metal Additive Manufacturing** held at IIT (ISM) Dhanbad, India. [10th July, 2025]
6. “*Nanofinishing of Surfaces using Magnetorheological Fluid*” at the UGC-MMTTP Faculty Development Programme on **Surface Engineering: Principles, Techniques, and Characterization** held at IIT (ISM) Dhanbad, India. [25th June, 2025]
7. “*Robotics and Automation*” at the **Technical Talk Event** held at Katihar Engineering College & Purnea College of Engineering, India. [07th October, 2024]
8. “*Pneumatic & Electro-pneumatic Automation*” at the e-STC on **Advanced Manufacturing and Industrial Automation** held at NIT Hamirpur, India. [30th January, 2024]
9. “*Automated Finishing of Femoral Knee Implant Component by Ball End Magnetorheological Finishing Process*” at the e-Workshop titled **Materials and Manufacturing: Insights to Modern Technologies** held at Birla Institute of Technology Sindri, India. [03rd August, 2022]
10. “*Manufacturing Automation*” at the webinar titled **Low-Cost Automation** held at Zakir Hussain College of Engineering and Technology, Aligarh Muslim University, India. [25th July, 2022]
11. “*Low-Cost Automation*” at the faculty development program titled **Application of Robotics in Enhancing Learning Contents** held at NIT Agartala, India. [07th July, 2021]
12. “*Circuit Design for Pneumatic & Electro-pneumatic Systems*” at the e-workshop titled **Condition Monitoring and Industrial Automation** held at NIT Hamirpur, India. [26th March, 2021]
13. “*Low-Cost Automation (Pneumatic/Hydraulic Systems)*” at the e-workshop titled **Condition Monitoring and Industrial Automation** held at NIT Hamirpur, India. [25th March, 2021]
14. “*Automated Finishing of Femoral Knee Implant Component by Ball End Magnetorheological Finishing Process*” at the webinar titled **Mechanical Engineering Solution to Biomedical Problems** held at IIT (ISM) Dhanbad, India. [26th September, 2020]

15. “Ball End Magnetorheological Finishing” at the short-term course titled **Advanced Manufacturing Processes** held at Katiyar Engineering College, India. [12th September, 2020]

PATENTS

1. “A robotic magnetorheological finishing system involving fixed-tool and movable multi-axis workpiece configuration” **Indian Patent Application No. 202631039796** [Filed: 30th March, 2026]
2. “A unique process of wire arc additive manufacturing to enhance mechanical properties of additively manufactured structures” **Indian Patent Application No. 202631031860** [Filed: 27th March 2026]
3. “Method for robot-assisted submerged magnetorheological finishing of axi-symmetric complex surfaces” **Indian Patent Application No. 202631032812** [Filed: 18th March, 2026]
4. “Adjustable attachment for controlled surface processing using abrasive blasting” **Indian Patent Application No. 202631033783** [Filed: 18th March 2026]
5. “A system and method to control a pneumatic medical bed through electroencephalography signals” **Indian Patent No. 582374** [Granted on 04th March, 2026]
6. “A cyber physical system retrofit for MR finishing of internal hollow cylindrical surfaces with real-time monitoring and control” **Indian Patent Application No. 202531124787** [Filed: 10th December 2025; Published: 02nd January, 2026]
7. “Multi-magnet tool for improved magnetorheological finishing” **Indian Patent No. 549836** [Granted on 09th September, 2024]
8. “A battery-free solar iron press and the heating system thereof” **Indian Patent No. 516587** [Granted on 28th February, 2024]
9. “Magnetorheological finishing tool with electromagnet cooling” **Indian Patent No. 490546** [Granted on 28th December, 2023]
10. “System for supplying polishing fluid” **Indian Patent No. 468576** [Granted on 13th November, 2023]
11. “System and method for flexible honing of internal surface of elongated cylindrical workpiece longitudinally” **Indian Patent Application No. 202231011033** [Filed: 01st March, 2022; Published: 01st September, 2023]

PUBLICATIONS

JOURNAL PAPERS

1. M. Kumar, M. Chandra, R. Kesharwani, R. Pant, A. Kumar, **Z. Alam** and J. Singh, “Enhancing the weld quality of robotics-controlled gas metal arc welding by process parameter optimisation for aluminium alloy” **International Journal on Interactive Design and Manufacturing**, pp.1-15. [2026]
2. R. Kesharwani, K.K. Jha, R. Mishra, M. Imam, C. Sarkar and **Z. Alam**, “A multiphysics modeling and experimental framework for investigating dissimilar AA6061-copper friction stir welds” **Archives of Civil and Mechanical Engineering**, 26, pp: 139. [2026]
3. D.A. Khan, **Z. Alam**, F. Iqbal and S. Jha, “Design of tool-electromagnet for finishing of aluminum using ball end MR processing technique” **Journal of Magnetism and Magnetic Materials**, 634, pp: 173591. [2025]

4. M. Kumar, S. Maheshwari and **Z. Alam**, "Optimization of process parameters for predicting surface roughness in the magnetorheological finishing of hollow cylindrical surfaces using a machine learning algorithm" *Journal of Magnetism and Magnetic Materials*, 630, pp: 173407. [2025]
5. R. Kesharwani, K.K. Jha, M. Imam, C. Sarkar and **Z. Alam**, "Computational modeling of polygon pin profile effects on friction stir welding of dissimilar materials AA6061-T6 and pure copper" *Research in Materials Science*, 1/1, pp: 2549245. [2025]
6. K. Chatterjee, A. Singh, S. Maheshwari, **Z. Alam** and Sarthak S. Singh, "Heat treatment of cross-infill- patterned 3D-printed polylactic acid scaffold for enhanced strength and bone cell proliferation" *Journal of Polymer Science*, 63/23, pp: 5047-5061. [2025]
7. S. Kumar, S. Maheshwari, A. Sinha, **Z. Alam** and Sarthak S. Singh, "Enhancing the creep resistance of 3D-printed polylactic acid at varied operating temperatures by heat treatment: An experimental and numerical analysis" *European Journal of Mechanics-A/Solids*, 115, pp: 105813. [2025]
8. M. Raza, **Z. Alam** and A.D. Udai, "ISO standardized form removal and filtering of surface texture for areal surface roughness measurement using Zygo Mx" *MAPAN - Journal of Metrology Society of India*, 40, pp: 937-942. [2025]
9. H. Varshney, A.D. Udai, S.V. Shah and **Z. Alam**, "Framework for implementing and investigating sensorless force control for collaborative manipulation using parallel robots" *Multibody System Dynamics*, 66, pp: 521-545. [2025]
10. S. Maheshwari, A. Singh, K. Chatterjee, **Z. Alam** and Sarthak S. Singh, "Enhancing the biomechanical response of 3D-printed polylactic acid scaffolds with heat treatment" *Emergent Materials*, 8, pp: 7267-7278. [2025]
11. M. Raza, R. Mondal, **Z. Alam** and A.D. Udai, "Modeling and experimental validation of transient surface roughness in magnetorheological finishing using 3-D magnetic flux density" *Journal of Magnetism and Magnetic Materials*, 624, pp: 173004. [2025]
12. M. Raza, **Z. Alam** and A.D. Udai, "Robot-assisted magnetorheological finishing of freeform surfaces using industrial 3-D camera" *Materials and Manufacturing Processes*, 40/8, pp: 1094-1103. [2025]
13. M. Kumar and **Z. Alam**, "Design and development of a novel MR finishing method for hollow cylindrical surfaces" *Materials and Manufacturing Processes*, 39/16, pp: 2279-2290. [2024]
14. S. Maheshwari, A. Kumar, P.S. Chaurasia, T. Niranjana, **Z. Alam** and Sarthak S. Singh, "Temperature and strain rate-dependent compression properties of 3D-printed PLA: an experimental and modeling analysis" *Rapid Prototyping Journal*, 30/7, pp: 1462-1475. [2024]
15. S. Maheshwari, **Z. Alam** and Sarthak S. Singh, "Investigating the large strain compression properties of PLA parts manufactured by FDM using experiments and constitutive modeling" *Rapid Prototyping Journal*, 30/3, pp: 555-570. [2024]
16. S. Maheshwari, A. Kar, **Z. Alam** and L. Kumar, "Deep neural network-based approach for modeling, predicting, and validating weld quality and mechanical properties of friction stir welded dissimilar materials" *JOM - Journal of The Minerals, Metals and Materials Society*, 75/11, pp: 4562-4578. [2023]
17. F. Iqbal, **Z. Alam**, D.A. Khan and S. Jha, "Automated insular surface finishing by ball end magnetorheological finishing process" *Materials and Manufacturing Processes*, 37/4, pp: 437-447. [2021]
18. F. Iqbal, **Z. Alam** and S. Jha, "Modelling of transient behaviour of roughness reduction in ball end magnetorheological finishing process" *International Journal of Abrasive Technology*, 10/3, pp: 170-192. [2020]

19. **Z. Alam**, D.A. Khan and S. Jha, "MR fluid-based novel finishing process for nonplanar copper mirrors" *International Journal of Advanced Manufacturing Technology*, 101/1-4, pp: 995-1006. [2019]
20. **Z. Alam**, F. Iqbal, S. Ganesan and S. Jha, "Nanofinishing of 3D surfaces by automated five axis CNC ball end magnetorheological finishing machine using customized controller" *International Journal of Advanced Manufacturing Technology*, 100/5-8, pp: 1031-1042. [2019]
21. A. Kumar, **Z. Alam**, D.A. Khan and S. Jha, "Nanofinishing of FDM-fabricated components using ball end magnetorheological finishing process" *Materials and Manufacturing Processes*, 34/2, pp: 232-242. [2019]
22. F. Iqbal, **Z. Alam**, D.A. Khan and S. Jha, "Constant work gap perpetuation in ball end magnetorheological finishing process" *International Journal of Precision Technology*, 8/2-4, pp: 397-410. [2019]
23. D.A. Khan, **Z. Alam**, F. Iqbal and S. Jha, "Experimental investigations on the effect of relative particle sizes of abrasive and iron powder in polishing fluid composition for ball end MR finishing of copper" *International Journal of Precision Technology*, 8/2-4, pp: 354-364. [2019]
24. **Z. Alam**, D.A. Khan, F. Iqbal and S. Jha, "Effect of polishing fluid composition on forces in ball end magnetorheological finishing process" *International Journal of Precision Technology*, 8/2-4, pp: 365-378. [2019]
25. **Z. Alam**, D.A. Khan and S. Jha, "A study on the effect of polishing fluid volume in ball end magnetorheological finishing process" *Materials and Manufacturing Processes*, 33/11, pp: 1197-1204. [2018]
26. **Z. Alam** and S. Jha, "Modeling of surface roughness in ball end magnetorheological finishing (BEMRF) process" *Wear*, 374-375C, pp: 54-62. [2017]
27. **Z. Alam**, F. Iqbal and S. Jha, "Automated control of three axis CNC ball end magneto-rheological finishing machine using PLC" *International Journal of Automation and Control*, 9/3, pp: 201-210. [2015]

CONFERENCE PAPERS

1. M.S. Alam, M. Amaan, R. Kesharwani, and **Z. Alam**, "Automation in waste management: An electro-pneumatic approach", *Innovations in Fluid Power: Shaping the Future of Mobile and Industrial Machinery*, IIT (ISM) Dhanbad, India. [23rd & 24th January, 2026]
2. M. Amaan, M. Raza, H. Varshney, **Z. Alam**, A.D. Udai, "Real-time dynamic Z-trajectory generation for robot-assisted magnetorheological finishing process of sloped ferromagnetic surface" *3rd International Conference on Advances in Manufacturing, Thermal and Design Engineering (MATHED)*, NIT Hamirpur, India. [26th - 28th December, 2025]
3. M.S. Alam, R. Kesharwani, P.K. Yadav, **Z. Alam**, and M. Chandra, "Enhancement of mechanical and microstructural properties of aluminium alloy wire arc additive-manufactured beads using solid-state processing methods" *3rd International Conference on Advances in Manufacturing, Thermal and Design Engineering (MATHED)*, NIT Hamirpur, India. [26th - 28th December 2025]
4. M. Kumar, H. Varshney, M. Raza and **Z. Alam**, "A cyber-physical MR finishing framework for internal cylindrical components in advanced manufacturing paradigms" *10th International and 31st All India Manufacturing Technology, Design and Research (AIMTDR) Conference*, IIT Indore, India. [11th - 13th December, 2025]
5. P.K. Yadav, R. Kesharwani, M.S. Alam, **Z. Alam**, and M. Chandra, "Hybrid manufacturing approach for microstructural refinement and mechanical strengthening of direct energy deposited aluminium alloy processed

through the friction stir processing method” 10th International and 31st All India Manufacturing Technology, Design and Research (AIMTDR) Conference, IIT Indore, India. [11th - 13th December, 2025]

6. M. Raza, S. Bouri, M. Kumar, S.S. Singh, **Z. Alam**, “Investigation of surface texture in chemo-mechanical magnetorheological finishing of biocompatible ultra-high molecular weight polyethylene” 10th International and 31st All India Manufacturing Technology, Design and Research (AIMTDR) Conference, IIT Indore, India. [11th - 13th December, 2025]
7. M. Raza, M. Amaan, **Z. Alam**, A.D. Udai, “Closed-form inverse kinematics solution for the Yaskawa GP12 industrial robot with elbow-link geometry” 10th International and 31st All India Manufacturing Technology, Design and Research (AIMTDR) Conference, IIT Indore, India. [11th - 13th December, 2025]
8. R. Kesharwani, K.K. Jha, M. Imam, C. Sarkar and **Z. Alam**, “Computational modelling of polygon pin profile effects on friction stir welding of dissimilar materials AA6061-T6 and pure copper” International Sustainable Air and Space Technologies (ICSAST), Karunya Institute of Technology and Science, India. [25th & 26th April, 2025]
9. D.A. Khan, **Z. Alam**, F. Iqbal and S. Jha, “Experimental investigations into nanofinishing of aluminium using ball end magnetorheological finishing process” 20th International Conference on Manufacturing Research (ICMR), Aberystwyth University, U.K. [6th - 8th September, 2023]
10. S. Maheshwari, A. Siddharth and **Z. Alam**, “Control of pneumatically actuated hospital bed using EEG signal” 2nd International and 14th National Conference on Industrial Problems on Machines and Mechanisms (IPRoMM), Indian Institute of Technology (Indian School of Mines) Dhanbad, India. [22nd & 23rd December, 2022]
11. **Z. Alam**, D.A. Khan, F. Iqbal and S. Jha, “A theoretical and experimental study on forces in ball end magnetorheological finishing process” 8th International and 29th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, PSG College of Technology, India. [9th - 11th December, 2021]
12. M. Osama, F. Iqbal, D.A. Khan and **Z. Alam**, “Design and development of novel multipoint epicyclic superfinishing tool” International Conference on Industrial and Manufacturing Systems (CIMS), NIT Jalandhar, India. [9th - 11th October, 2020]
13. M.O. Qidwai, F. Iqbal and **Z. Alam**, “Thermal analyses of ball end magnetorheological finishing tool” International Conference on Industrial and Manufacturing Systems (CIMS), NIT Jalandhar, India. [9th - 11th October, 2020]
14. **Z. Alam**, D.A. Khan, F. Iqbal, A. Kumar and S. Jha, “Design and development of cartridge-based automated fluid delivery system for ball end magnetorheological finishing process” 7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, Anna University, India. [13th - 15th December, 2018]
15. D.A. Khan, **Z. Alam**, F. Iqbal and S. Jha, “Design and development of improved ball end MR finishing tool with efficacious cooling system” 7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, Anna University, India. [13th - 15th December, 2018]
16. F. Iqbal, **Z. Alam**, D.A. Khan and S. Jha, “Part program-based process control of ball-end magnetorheological finishing” 7th International and 28th All India Manufacturing Technology, Design and Research (AIMTDR) Conference, Anna University, India. [13th - 15th December, 2018]
17. **Z. Alam**, D.A. Khan, F. Iqbal and S. Jha, “Effect of polishing fluid composition on forces in ball end magnetorheological finishing process” 10th International Conference on Precision, Meso, Micro and Nano Engineering (COPEN), IIT Madras, India. [7th - 9th December, 2017]

18. D.A. Khan, **Z. Alam**, F. Iqbal and S. Jha, “Experimental investigations on the effect of relative particle sizes of abrasive and iron powder in polishing fluid composition for ball end MR finishing of copper” **10th International Conference on Precision, Meso, Micro and Nano Engineering (COPEN)**, IIT Madras, India. [7th - 9th December, 2017]
19. F. Iqbal, **Z. Alam**, D.A. Khan and S. Jha, “Constant work gap perpetuation in ball end magnetorheological finishing process” **10th International Conference on Precision, Meso, Micro and Nano Engineering (COPEN)**, IIT Madras, India. [7th - 9th December, 2017]
20. **Z. Alam**, D.A. Khan, F. Iqbal and S. Jha, “Analysis of forces in ball end magnetorheological finishing process” **39th International MATADOR Conference on Advanced Manufacturing**, University of Manchester, U.K. [5th - 7th July, 2017]
21. D.A. Khan, **Z. Alam**, F. Iqbal and S. Jha, “A study on the effect of polishing fluid composition in ball end magnetorheological finishing of aluminum” **39th International MATADOR Conference on Advanced Manufacturing**, University of Manchester, U.K. [5th - 7th July, 2017]
22. F. Iqbal, **Z. Alam**, D.A. Khan and S. Jha, “Localized finishing by ball end magnetorheological finishing process using integrated confocal sensor for in-situ surface roughness measurement” **39th International MATADOR Conference on Advanced Manufacturing**, University of Manchester, U.K. [5th - 7th July, 2017]
23. D.A. Khan, **Z. Alam** and S. Jha, “Nanofinishing of copper using ball end magnetorheological finishing (BEMRF) process” **ASME International Mechanical Engineering Congress and Exposition (IMECE)**, Phoenix, Arizona, U.S.A. [11th - 17th November, 2016]

BOOK CHAPTERS

1. R. Kesharwani, M.S. Alam, P.K. Yadav, **Z. Alam** and M. Chandra, “Improving mechanical and microstructural properties of wire arc additive-manufactured parts using friction stir processing” In: J.D. Majumdar, S.K. Sharma, A.K. Shukla, K.H. Kazmi and M. Chandra (ed) **Metal Additive Manufacturing: Recent Progress on Processing and Advancement**, CRC press. [2026]
2. M. Kumar, S. Maheshwari and **Z. Alam**, “Advanced finishing processes for internal cylindrical surfaces: A review” In: F. Iqbal, D.A. Khan and Z. Alam (ed) **Nanofinishing of Materials for Advanced Industrial Applications**, CRC press. [2024]
3. S.S. Rathore, V. Sharma, F. Iqbal, D.A. Khan, **Z. Alam** and N. Arora, “Process automation for abrasive-based precision-finishing techniques” In: F. Iqbal, D.A. Khan and Z. Alam (ed) **Nanofinishing of Materials for Advanced Industrial Applications**, CRC press. [2024]
4. A. Bhatnagar, **Z. Alam**, D.A. Khan and F. Iqbal, “Nanofinishing in light of optimization and sustainability” In: F. Iqbal, D.A. Khan and Z. Alam (ed) **Nanofinishing of Materials for Advanced Industrial Applications**, CRC press. [2024]
5. S. Maheshwari, A. Siddharth, **Z. Alam**, F. Iqbal and D.A. Khan, “Laser-based post-processing technologies for additive manufactured parts” In: A. Kar and Z. Alam (ed) **Solid-State Additive Manufacturing**, CRC press. [2023]
6. F. Iqbal, **Z. Alam** and D.A. Khan, “Additive Manufacturing and Post-processing: An Introduction” In: Z. Alam, F. Iqbal and D.A. Khan (ed) **Post-processing Techniques for Additive Manufacturing**, CRC press. [2023]

7. **Z. Alam**, F. Iqbal and S. Jha, “*Modeling and analysis of forces and finishing spot size in ball end magnetorheological finishing (BEMRF) process.*” In: A. Pramanik (ed) **Machining and Tribology: Processes, Surfaces, Coolants, and Modeling**, Elsevier. [2022]
8. F. Iqbal, **Z. Alam**, M. Shukla, J. Malhotra and S. Jha, “*Transforming standalone machine tool to a cyber-physical system: A use case of BEMRF machine tool to tackle COVID-19 restrictions*” In: T. Semwal and F. Iqbal (ed) **Cyber-Physical Systems: Solutions to Pandemic Challenges**, CRC press. [2022]
9. S. Maheshwari, A. Siddharth and **Z. Alam**, “*Role of additive manufacturing cyber-physical system during COVID-19 pandemic*” In: T. Semwal and F. Iqbal (ed) **Cyber-Physical Systems: Solutions to Pandemic Challenges**, CRC press. [2022]

BOOKS

1. A.K. Sahu, D.A. Khan and **Z. Alam**, “*Advances in Laser Assisted Hybrid Manufacturing*” CRC press. [In press; To be published in October 2026]
2. F. Iqbal, D.A. Khan and **Z. Alam**, “*Nanofinishing of Materials for Advanced Industrial Applications*” CRC press. [2024]
3. A. Kar and **Z. Alam**, “*Solid State Additive Manufacturing*” CRC press. [2023]
4. **Z. Alam**, F. Iqbal and D.A. Khan, “*Post-processing Techniques for Additive Manufacturing*” CRC press. [2023]
5. D.A. Khan, **Z. Alam** and F. Iqbal, “*Magnetic Field Assisted Finishing: Methods, Applications and Process Automation*” CRC press. [2022]

[Updated: June, 2026]