

LIST OF PATENTS AND PUBLICATIONS

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]

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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]

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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]
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