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Dr. Manivannan R., received his M.E. degree in manufacturing systems and management and Ph.D. degree in Mechanical engineering from the Anna University, Chennai, India, in 2013 and 2016 respectively. After he served as a faculty in NIT, Tiruchirappalli and worked as a research engineer in rapid manufacturing lab, IIT Bombay. Since, April 2019, he has been associated with CSIR-Central Mechanical Engineering Research Institute, Durgapur where he is a Scientist in additive manufacturing research group. His primary area of research is Additive Manufacturing, particularly metallic components. For achieving the same, various deposition rates, in situ residual stress management or post processing methods were addressed. He has published papers in various international and national journals, book chapters, etc.

LIST OF PUBLICATIONS

International Journals

1) **Manivannan R**, Y. Tiwari, M. Mukherjee, B. Maji, and A. Chatterjee. Effect of bidirectional and switchback deposition strategies on microstructure and mechanical properties of wire arc additive manufactured Inconel 625. Int. J. Adv. Manuf. Technol., 2022,. (doi: 10.1007/s00170-022-08687-2).
2) Y. Tiwari, M. Mukherjee, D. Chatterjee and **R. Manivannan**, “Influence of inter-layer rotation in parallel deposition strategies on the microstructure, texture, and mechanical behaviour of Inconel-625 during directed energy deposition”, Materials Characterization, 2023, 197, 112711. (doi: 10.1016/j.matchar.2023.112711)
3) A.R. Paul, M. Mukherjee, D. Singh, **R. Manivannan** and M.K. Mondal, “Influence of Deposition Mode on Microstructural and Mechanical Properties of Wire Arc Additive Manufactured 308L Stainless Steel Structures”, Journal of Materials Engineering and Performance, 2023. (doi: 10.1007/s11665-023-08453-9

4) Y. Tiwari, S. Nandi, **R. Manivannan**, D. Chatterjee, M. Mukherjee, and V. Rajinikanth, "Investigating the Influence of Various Tool Path Trajectories on the Anisotropic Behaviour of Bulk NiCrMo-3 alloy Fabrication by WADED Process", Materials Characterization, 2024, 209, 113742. (doi: 10.1016/j.matchar.2024.113742)
5) A.R. Paul, M. Mukherjee, **R. Manivannan**, S. Kundu, and A. Chatterjee, "Development of near homogeneous properties in wire arc additive manufacturing process for near-net shaped structural component of low-carbon steel", Proc. IMechE. Part C: Journal of Mechanical Engineering Science, October 2021. (doi: 10.1177/09544062211045489).
6) A.R. Paul, M. Mukherjee, and **R. Manivannan**: "Enhancement of UTS by the development of high strain hardening property in 308L stainless steel through wire and arc additive manufacturing", National Welding Seminar 2020-21 organized by IIW-India, Baroda, April 8-10, 2021.
7) Y. Tiwari, **R. Manivannan**, M. Mukherjee and B. Maji: "Wire + arc additive manufacturing of Inconel 625: Effect of bidirectional and switchback strategies on microstructure and mechanical properties", National Welding Seminar 2020-21 organized by IIW-India, Baroda, April 8-10, 2021.
8) A.R. Paul, **R. Manivannan**, M. Mukherjee, S. Kundu, A. Chatterjee: "Development of Y-shape hybrid frame model using wire and arc additive manufacturing process". Materials Today: Proceedings. 2021, 44 (6), 4342-4348. DOI: 10.1016/j.matpr.2020.10.555.
9) Negi Seema, Sajan Kapil, **R. Manivannan** and K.P.Karunakaran. 2019. "Review on Electron Beam based Additive Manufacturing." Rapid Prototyping Journal .
10) **Manivannan, R**. and Pradeep Kumar, M., 2016. Multi-response optimization of Micro-EDM process parameters on AISI304 steel using TOPSIS. Journal of Mechanical Science and Technology, 30 (1), 137–144.
11) **Manivannan, R**. and Pradeep Kumar, M., 2016. Multi-attribute decision making of cryogenically cooled Micro-EDM drilling process parameters using TOPSIS method. Materials and Manufacturing process, 32(2), 209-215.
12) **Manivannan, R**. and Pradeep Kumar, M., 2017. Improving the Machining Performance Characteristics of the μEDM Drilling Process by Online Cryogenic Cooling Approach. Materials and Manufacturing process, 33(4), 1-7.
13) Parthiban, K., Muthukannan Duraiselvam, and **R. Manivannan**. 2018. "TOPSIS Based Parametric Optimization of Laser Micro-Drilling of TBC Coated Nickel Based Superalloy." Optics & Laser Technology (102)32–39.
14) **Manivannan, R**. Vinoth Kumar, S & Pradeep Kumar, M., 2013. 'Multi Response optimisation of process parameters in Electrical Discharge machining in AISI D2 Tool steel

using grey relational analysis', Journal of Manufacturing Engineering, March, vol.8, no.1, pp.022-027.

15) Ranjeet Kumar Bhagchandani, Rohan Ghodke, **Manivannan. R**, Seema Negi, Sajan Kapil, K.P. Karunakaran, 2020. 'Characterization of Rapid Foam Castings Produced by Different Mold Making Processes', Advances in Additive Manufacturing and Joining. DOI: 10.1007/978-981-32-9433-2_14.

16) **Manivannan, R**. and Pradeep Kumar, M., 2016. Investigation on cryogenic cooling of micro EDM drilling process on AISI 304 stainless steel, ASME 2016, Phoenix, AZ, USA.

National Journals

1. **Manivannan, R.** Vinoth Kumar, S & Pradeep Kumar, M., 2013. 'Multi Response optimisation of process parameters in Electrical Discharge machining in AISI D2 Tool steel using grey relational analysis', Journal of Manufacturing Engineering, March, vol.8, no.1, pp.022-027.

Book Chapter

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International Conferences

1. **Manivannan, R.** and Pradeep Kumar, M., 2016. Investigation on cryogenic cooling of micro EDM drilling process on AISI 304 stainless steel, ASME 2016, Phoenix, AZ, USA.
2. **Manivannan, R.** and Pradeep Kumar, M., 2015. Experimental optimization of Micro EDM drilling process parameters on AISI304 stainless steel using TOPSIS approach. Copen9, IIT Bombay, INDIA.
3. **Manivannan, R.** and Pradeep Kumar, M., 2016. Effect of feed rate on the performance of micro electrical discharge drilling process. ICMDM 2016, Anna University, Chennai.
4. **Manivannan, R.** and Pradeep Kumar, M., 2016. Reducing taper angle through low conducting coating on electrodes in µEDM drilling process. ICMDM 2016, Anna University, Chennai.
5. **Manivannan, R.** and Pradeep Kumar, M., 2015. Optimization of Various Attributes of Geometrical Performances in µEDM Drilling Process Using Grey Relational Analysis, ICAME 2015, University departments of Anna University, Villupuram.

6. Karthik, B. **Manivannan, R**. and Pradeep Kumar, M., 2016. Study of Overcut and Taper Angle in Micro EDM Drilling Process with Electrode Feed rate, ICFIMEMM 2016, M. Kumarasamy College of Engineering, Karur.
7. Karthik, K. **Manivannan, R.** Azad, A. and Pradeep Kumar, M., 2016. Reducing Circularity Variation Of Through Micro Holes By Varying Electrode Feed Rate In Micro Electrical Discharge Machining Process, ICMED 2016, SSN, Chennai.
8. **Manivannan, R.** Vinoth Kumar, S and Pradeep Kumar, M 2013, 'Multi Response optimization of process parameters in Electrical Discharge machining in AISI D2 Tool steel using grey relational analysis', RAMPT, Kovilpatti, National Engineering College, India.
9. Vinoth Kumar, S. Pradeep Kumar, M. and **Manivannan, R**., 2013. 'Performance evaluation on cryogenic cooling of electrode in Electrical Discharge Machining Al-10%SiCp Metal Matrix Composite', ICRACM, Goa, India.
10. **Manivannan, R** and Pradeep kumar, M., 2012. Chitosan – Nano Titania thin film coatings on glass surface, ICFTME – 12, Thiruvalluvar College of engineering and technology, Vandavasi, India.
11. **Manivannan, R.** and Pradeep Kumar, M., 2016. Low electrically conductive coating of electrodes in micro EDM to improve the geometrical accuracy, AIMTDR 2016, College of Engineering Pune, INDIA.

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12. **Manivannan, R.** Vinoth Kumar, S and Pradeep Kumar, M 2013. Multi Response optimization of process parameters in Electrical Discharge machining in Ti-6Al-4V using grey relational analysis, "RTMT – 13", College of Engineering, Guindy, Anna University, India.
13. **Manivannan, R** and Agilan, CV., 2011. Reduction of pollution in two stroke gasoline engine by fuel injection, ETDM-11, Saveetha Engineering College, Chennai.

IPR:

Title	Semi Rigid Inert Gas Chamber for Titanium Alloy Components Manufacturing Using Wire Arc Additive Manufacturing Process.
Application no.	CSIR-CMERI/IPMG/Patent/2021-22/196; 0079NF2022
Inventors	D. Singh, M. Mukherjee, **Manivannan R**, A. Chatterjee and S. Kundu
Date of Filing	31-03-2022
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