DR. MANIDIPTO MUKHERJEE

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PROFESSIONAL PREFACE:

In-charge	*Institute*	CSIR- CMERI Durgapur, West Bengal, India
	Vertical	CMERI-DSIR Common Research and Technology Development Hub
	Department	Manufacturing
	Subjects	Research and Development, Support to MSME and start-up
	Duration	May 24, 2022 – April 5, 2023
Vertical Head	*Institute*	CSIR- CMERI Durgapur, West Bengal, India
	Vertical	Wire Arc Additive Manufacturing & 3D Printing (WAAM3DP)
	Department	Centre for Advanced Manufacturing and Metrology
	Subjects	Research and Development
	Duration	July 1, 2020 – April 5, 2023
Senior Scientist	*Institute*	CSIR- CMERI Durgapur, West Bengal, India
	Vertical	Wire Arc Additive Manufacturing & 3D Printing (WAAM3DP)
	Department	Additive Manufacturing Research Group
	Subjects	Research and Development
	Duration	May 15, 2019 – Till date
Assistant Professor	*Institute*	AcSIR, CSIR- CMERI Durgapur, West Bengal, India
	Department	Centre for Advanced Manufacturing and Metrology
	Subjects	Near net shape manufacturing, Prototyping and assembly
	Duration	June 15, 2019 – Till date
Assistant Professor (Research)	*Institute*	SRM Institute of Science and Technology, SRM University, Kattankulathur, Chennai, Tamil Nadu, India
	Department	Mechanical Engineering
	Subjects	Basic Manufacturing Processes, Material Science, Welding Technology, Basic Mechanical Engineering, Non-Conventional Energy Sources
	Duration	August 01, 2017 – May 08, 2019
Assistant Professor	*Institute*	C.V. Raman College of Engineering, Bhubaneswar, Odisha, India
	Department	Mechanical Engineering
	Subjects	Basic Manufacturing Processes, Material Science, Welding Technology, Mechanical Measurement and Control, Engineering Mechanics, Non-Conventional Energy Sources
	Duration	July 15, 2016 – July 25, 2017.

PROFESSIONAL QUALIFICATION:

Doctor of Philosophy (Engineering)	**Specialization in Welding Metallurgy and Joining Technology** Jadavpur University Kolkata, India June 11, 2012 – November 11, 2016
Master of Technology	**Specialization in Material Engineering** Jadavpur University Kolkata, India CGPA-7.5 August 24, 2009 – July 20, 2011
Bachelor of Technology	**Mechanical Engineering** West Bengal University of Technology, Haldia Institute of Technology Haldia, India CGPA-7.1 July 14, 2005 – June 20, 2009

DISSERTATIONS:

Ph.D. (Engineering)	*Title*	Development of Suitable Gas Metal Arc Welding Procedure for High-Performance Weld Joints of Modified Ferritic and Low Nickel Austenitic Stainless Steel.
M. Tech.	*Title*	Effect of Mode of Metal Transfer on Microstructure and Mechanical Properties of Gas Metal Arc Welded Modified Ferritic Stainless Steel.

AWARDS & ACHIEVEMENTS:

Young Engineers Award - 2022	Awarded by the Institution of Engineers (India) in Production Engineering.
ESAB India Award -2021	Awarded by IIW-India for the best-presented paper across all categories at the National Welding Seminar (*NWS 2021*) held at Baroda on 8-10th April 2021.
Venus Wire Award -2021	Awarded by IIW-India for the best technical paper on Stainless Steel Application presented at the National Welding Seminar-2021 held at Baroda on 8-10th April 2021.
Honorary Secretary - 2020	The Institute of Indian Foundrymen, Activity Centre, Durgapur from 18.11.2020 to 05.04.2023.
Early Carrier Research Award - 2019	Awarded by the Department of Science & Technology-SERB for the project on dissimilar wire and arc-based additive manufacturing.
SRMIST Research Day-2019 Gold Medal (PG-student)	Awarded by SRM Institute of Science and Technology, India, for the best-presented paper on the Research Day held at SRMIST, Tamil Nadu, on 28th February 2019.
ESAB India Award -2016	Awarded by IIW-India for the best-presented paper across all categories at the National Welding Seminar (*NWS 2015*) held at Navi Mumbai on 9-11th December 2015.
D & H Secheron Award -2015	Awarded by IIW-India for the best presented paper at the National Welding Seminar (*NWS 2014-15*) held at Jamshedpur on 22-24 January 2015.
I.T. Mirchandani Memorial Research Award -2014	Awarded by IIW-India for the best research paper on Welding Metallurgy, Modelling, and Extensive Testing presented at the International Congress-IIW-IC-2014 held in New Delhi on 10-12th April 2014.
Venus Wire Award -2013	Awarded by IIW-India for the best technical paper on Stainless Steel Application presented at the National Welding Seminar-2013 held in Bangalore.
Senior Research Fellowship -2012	Awarded for four years by the Council of Scientific and Industrial Research (CSIR), Pusa, New Delhi, in 2012.

PROJECTS:

A. Sponsored (Grant-in-aid and Institute)

Sl. No.	Title	Funding Agency	Sanctioned amount (in Rs.)	Year	PI/CO-PI	Status
1.	Development of Aluminium-Stainless Steel transition pipe joints for cryogenic and vacuum application (Sanction letter no. 39/14/03/2018-BRNS/39003 dated 02.04.2018)	BRNS-PFRC	16,89,750	2018-2021	Co-PI	Completed
2.	Analysis of interface characteristics to develop dissimilar wire and arc-based additive manufacturing components for industrial applications. (Approval letter no. ECR/2018/001250 dated 26.02.2019) (GAP226812)	DST-ECR (SERB)	42,36,900	2019-2022	PI	Completed
3.	Facility Development for Welding and Heat Treatment (OLP228712)	CSIR-CMERI (OLP)	41,00,000	2019-2020	PI	Completed
4.	Feasibility study of Dieless Hydroforming Process for Variable Cross-sections Tubular Structures to explore its Capability and Limitations (OLP227412)	CSIR-CMERI (OLP)	6,65,000	2019-2020	Co-PI	Completed
5.	Towards the Development of Multi-Robotic Wire Arc Additive Manufacturing Platform (OLP231912)	CSIR-CMERI (OLP)	49,00,000	2020-2023	PI	Completed
6.	Ultra-high efficiency heat pipe wick for high temperature and electronic application (Approval letter no. 6(19)/Release GOI of His/2021 dated 22.02.2021) (GAP235412)	MSME	15,00,000	2021-2022	PI	Completed
7.	Development of Novel Induction Heating Based Metal to Polymer Joining Process and Device for Automotive Application (OLP237812)	CSIR-CMERI (OLP)	35,00,000	2022-2023	Co-PI	Completed
8.	Design and Development of SMART Actuation-based Lower Limb Rehabilitation Robotic System (GAP238412)	DST-TIDE	33,13,950	2021-2024	Co-PI	Ongoing
9.	Design and development of SS-Ni functionally graded transition metals-based efficient electrode by wire arc additive manufacturing (WAAM) for green hydrogen generation. (GAP241212)	DST-CRG (SERB)	28,87,920	2023-2026	PI	Ongoing

B. Technical Services (Industry and Academia)

Sl. No.	Title	Funding Agency	Sanctioned amount (in Rs.)	Year	PI/CO-PI	Status
1.	Melting of Fe-Cr dust and its characterization (03 heats) (Work order no. JBI/U-IV/FA/ST-90019/19-20 dated 01.08.2019) (TSP-1198)	M/s. Jai Balaji Industries Limited, Durgapur	1,26,800	2019-2020	PI	Completed
2.	FSW experiment, machining and testing of reinforced surface composite (TSP-1287 dated 23.02.2021)	Birbhum Institute of Engineering & Technology	19,470	2020-2021	PI	Completed
3.	Deposition and characterization of WAAM walls of SS (TSP-1327, ERP No. CMERI/TSP/2021/02095 dated 24.06.2021)	Aditya Engineering College, Andhra Pradesh 533437	33,231	2021-2022	PI	Completed
4.	Development of Bearing plates (05 nos.) using wire arc additive manufacturing (TSP – 1407, ERP No. CMERI/TSP/2022/37132 dated 31.01.2022)	CSIR-CIMFR	96,288	2022-2023	PI	Completed
5.	Development of IN718 wall structures (05 nos.) in WAAM (TSP – 1401, ERP No. CMERI/TSP/ 2021/37223 dated 07.05.2022)	IIT Roorkee	97,084	2022-2023	PI	Completed
6.	Deposition and characterization of WAAM walls of SS (TSP-1455, ERP No. CMERI/TSP/2022/38900 dated 28.09.2022)	Aditya Engineering College, Andhra Pradesh 533437	37,170	2022-2023	PI	Completed
7.	3D printing and machining of rock bolt coupler (5 nos.) (TSP-1486, ERP No. CMERI/TSP/2023/39852 dated 02.03.2023)	CSIR-CIMFR	97,173	2023-2024	PI	Completed
8.	3D printing of test coupon as per DNV-ST-B203 (TSP – 1519, dated 07/02/2024)	TATA steel Jamshedpur	1,59,772	2024-2025	PI	Ongoing

PATENTS:

Title	A Portable three-channel inert gas flow device for robotic arc-welding and wire-arc-directed energy deposition
Application no.	CSIR-CMERI/IPMU/2014PT/2024; 0058NF2024; 202411033736
Inventors	**M. Mukherjee**, E. Chandrasekar, M. Thangadurai, S. Kundu
Date of Filing	26-04-2024
Correspondence	CSIR-CMERI Durgapur 713209, India

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; 202211064106
Inventors	D. Singh, **M. Mukherjee**, Manivannan R., A. Chatterjee and S. Kundu
Date of Filing	09-11-2022
Correspondence	CSIR-CMERI Durgapur 713209, India

Title	Shape Memory Alloy-Based Contactless Rotary Actuator
Application no.	202131009671
Inventors	D. Singh, R. Choudhury, Y. Singh, **M. Mukherjee,** and S. Sharma
Date of Filing	08-03-2021
Correspondence	Ideas2IPR, B-115 Chander Nagar, Janak Puri, New Delhi-110058

Title	Planar Parallel Manipulator Using Shape Memory Alloy Actuator
Application no.	202031003989
Inventors	Deep Singh, Yogesh Singh and **Manidipto Mukherjee**
Date of Filing	29-01-2020
Correspondence	Ideas2IPR, B-115 Chander Nagar, Janak Puri, New Delhi-110058

Title	A Smart Suit with Inbuilt Pesticide Sprayer for Agricultural Applications
Application no.	201941011731
Inventors	S. Ramesh, A. Pattanaik, S.B. Mishra, B.R. Moharana, **M. Mukherjee**, H.G. Prashanthakumar, N. Karthik, N. Thangadurai, and K.M. Gayathri
Date of Filing	26-03-2019
Correspondence	School of Engineering and Technology, JAIN (Deemed-to-be-University), Bangalore, Karnataka, India

PUBLICATIONS:

A. International Journals:

1. D. Mukherjee, Y. Tiwari, E. Chandrasekar, N. Mandal, D. Qiu, **M. Mukherjee**, M. Easton, and H. Roy, Unravelling crack tip damage mechanisms: In-situ tensile assessment of Al-6Zn-2.1Mg-2Cu alloy strengthened by Ti, Zr, and Sc micro-alloying, ***Engineering Fracture Mechanics***, 2024, 312, 110663. (doi: 10.1016/j.engfracmech.2024.110663)
2. A. Banerjee, Y. Tiwari, S. Dutta, **M. Mukherjee**, and S. Das, Investigating the layer-wise arc and melt-pool characteristics of near-substrate wire arc-directed energy deposited NiCrMo-3 alloy using image processing, ***Proc. IMechE. Part E: Journal of Process Mechanical Engineering***, 2024, 1-14. (doi: 10.1177/09544089241301949)
3. A.R. Paul, J. Dumbre, D. Qiu, M. Easton, M. Mazur, and **M. Mukherjee,** Grain Refinement and Morphological Control of Intermetallic Compounds: A Comprehensive Review, ***Current Opinion in Solid State and Materials Science***, 2024, 33, 101200. (doi: 10.1016/j.cossms.2024.101200)
4. M. Maity, Y. Tiwari, R. Manivannan, and **M. Mukherjee**, Influence of in-situ hammering on microstructural, mechanical and residual stress behaviour of Inconel 718 during wire arc additive manufacturing. ***Progress in Additive Manufacturing***, 2024. (doi: 10.1007/s40964-024-00890-9)
5. S. Biswas, A.R. Paul, Y. Singh, and **M. Mukherjee**, Enhanced prediction and optimization of WEDM for titanium alloy (grade 5) with hybrid artificial neural network based meta-heuristics, ***International Journal on Interactive Design and Manufacturing***, 2024. (doi: 10.1007/s12008-024-02058-9)

6. A. Sil, Y. Tiwari, D. Mukherjee, S. Nandi, and **M. Mukherjee**, Investigating the influence of post-deposition heat treatment (PDHT) on the characteristic changes in wire arc additively manufactured 410 martensitic stainless steel thin-wall structure, ***Materials Today Communications***, 2024, 40, 110039. (doi: 10.1016/j.mtcomm.2024.110039)

7. A. Sil, Y. Tiwari, S. Mandal, **M. Mukherjee**, A. Samanta, and R. Porwal, Influence of heat input on bead geometry, microstructure and hardness characteristics of dissimilar 410 martensitic stainless steel weld deposits on 304L substrate, ***Advances in Materials and Processing Technologies***, 2024. (doi: 10.1080/2374068X.2024.2373581)

8. S. Yadav, **M. Mukherjee** and D. Singh, Review of Current Challenges in the Implementation of WAAM for Ti-6Al-4V Alloys, ***Int. J. Adv. Manuf. Technol.***, 2024, 133, 2103–2130. (doi: 10.1007/s00170-024-13958-1)

9. **M. Mukherjee**, P. Sarkar, S. Barman, P.K. Mallisetty, V. Paleu, and S. Bhaumik, Investigating the Wear Resistance of AISI 410/AISI 2205 Hybrid Weld Cladding on Annealed EN 8 Medium Carbon Steel, ***Proc. IMechE. Part J: Journal of Engineering Tribology***, 2024, 238(11), 1373-1392. (doi: 10.1177/13506501241255989)

10. Y. Tiwari, A. Datta, E. Chandrasekar, **M. Mukherjee**, S. Das, and D. Chatterjee, Numerical Analysis of Stress and Distortion in Bulk Deposited Structures of Inconel 625 Alloy: Influence of Deposition Strategies, ***CIRP Journal of Manufacturing Science and Technology***, 2024, 51, 293–312. (doi: 10.1016/j.cirpj.2024.05.002)

11. A.R. Paul, S. Singh, J. Hirwani, S. Yadav, C. Dekiwadia, **M. Mukherjee**, and D. Kalyanasundaram, Effect of Heat Treatment on Material property and Cell Viability of Wire Arc Additively Manufactured Ti6Al4V, **ACS Applied Bio Materials**, 2024, 7(5), 3096–3109. (doi: 10.1021/acsabm.4c00130)

12. A.R. Paul, S.A. Babalola, A.K. Yadav, **M. Mukherjee** and D. Singh, Development of water recycling based mechanical drain cleaning system, ***Water Practice & Technology***, 2024, 20, 1-15. (doi: 10.2166/wpt.2024.101)

13. 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)

14. D. Mukherjee, H. Roy, B. Chandrakanth, N. Mandal, S.K. Samanta and **M. Mukherjee**, Enhancing properties of Al-Zn-Mg-Cu alloy through microalloying and heat treatment, ***Materials Chemistry and Physics***, 2024, 314, 128881. (doi: 10.1016/j.matchemphys.2024.128881)

15. S. Senkathir, S. Pramanik, and **M. Mukherjee**, Nanomechanical Analysis of Friction Welded Similar PEEK/Aluminium Nanocomposites: Effect of Metal Particle Reinforcement, ***Polymer Composites***, 2023, 45(4), 3839-3852. (doi: 10.1002/pc.28033)

16. S. Senkathir, S. Pramanik, and **M. Mukherjee**, Friction Welding Joint Analysis of Dissimilar Nanocomposites: PEEK/Aluminium to PEEK/Titanium, ***Journal of Applied Polymer Science***, 2023, 141(10), e55046. (doi: 10.1002/app.55046)

17. **M. Mukherjee**, R. Mukherjee, A. Rahul, D. Das, S. Datta, Evaluation of Ca-alloyed and HAp-reinforced magnesium matrix surface composite properties developed by friction stir processing, ***Materials and Manufacturing Processes***, 2023, 39(6), 778-786. (doi: 10.1080/10426914.2023.2289669)

18. S. Mohanty, **M. Mukherjee**, C. Mandal, S.M. Shariff, Md. Aqeel, A. Senapati, T. K. Pal, Understanding the Microstructural Evolution and Tensile Characteristics of Low Nickel Austenitic Stainless-Steel Welds Fabricated by Diode LASER, ***International Journal of Pressure Vessels and Piping***, 2023, 206, 105087. (doi: 10.1016/j.ijpvp.2023.105087)

19. S. Biswas, Y. Singh and **M. Mukherjee,** Unified supervised learning and optimization technique for wire electrical discharge machining of various grades of alloys: stochastic algorithm combined neural network approach, ***Proc. IMechE. Part C: Journal of Mechanical Engineering Science***, 2023, 238(9), 3818–383. (doi: 10.1177/09544062231208526)

20. A.R. Paul, **M. Mukherjee** and M.K. Sahu, Influence of copper interlayer on the interface characteristics of stainless steel–aluminium transitional structure in wire arc directed energy deposition, ***Rapid Prototyping Journal***, 2023, 30(1), 1-14. (doi: 10.1108/RPJ-03-2023-0089)

21. 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)

22. 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)

23. D. Mukherjee, **M. Mukherjee**, N. Mandal, S.K. Samanta and A. Maiti, Effect of micro-alloying on the characteristics of as-cast Al-Zn-Cu-Mg-X alloy with varying Cu and Zn, ***Materials Today Communications***, 2023, 34, 105445. (doi: 10.1016/j.mtcomm.2023.105445)

24. A. Rahul, **M. Mukherjee**, D. Das and S. Datta, Impact of particle addition and aging on the friction stir processed magnesium matrix surface composite properties, ***JOM***, 2023, 75, 2974–2988. (doi: 10.1007/s11837-023-05714-9)

25. A. Mishra, A.R. Paul, **M. Mukherjee**, and R.K. Singh, Bimetallic structure of Ti6Al4V/IN718 with CuSi interlayer for wire-arc directed energy deposition process, ***Metals and Materials International***, 2023, 29, 2331–2344. (doi: 10.1007/s12540-022-01381-8)

26. S. Biswas, A.R. Paul, A.R. Dhar, Y. Singh and **M. Mukherjee,** Multi-material modelling for wire electro-discharge machining of Ni-based super alloys using hybrid neural network and stochastic optimization techniques, ***CIRP Journal of Manufacturing Science and Technology***, 2023, 41, 350-364. (doi: 10.1016/j.cirpj.2022.12.005)

27. T. Das, **M. Mukherjee**, D. Chatterjee, S.K. Samanta and A.K. Lohar, A comparative evaluation of the microstructural characteristics of L-DED and W-DED processed 316L stainless steel. ***CIRP Journal of Manufacturing Science and Technology***, 2023, 40, 114-128. (doi: 10.1016/j.cirpj.2022.11.010)

28. A.R. Paul, A. Mishra, **M. Mukherjee** and D. Singh, Stainless steel to aluminium joining by interfacial doping with Al_2O_3 powder in wire arc direct energy deposition process. ***Materials Letters***, 2023, 330, 133349. (doi: 10.1016/j.matlet.2022.133349)

29. A.R. Paul, **M. Mukherjee,** D. Singh and M.K. Mondal, Interfacial characterization of additively manufactured stainless steel to aluminium thin wall with nickel interlayer. ***Journal of Materials Research***, 2022, 37, 3629–3645. (doi: 10.1557/s43578-022-00732-w)

30. A.R. Paul, S. Bose, A.R. Dhar, S. Biswas, **M. Mukherjee** and R. Manivannan, Interface Optimisation of Dissimilar Wire Arc Additive Manufactured Wall Through ANN-TOPSIS Conjugate Algorithm, ***Trans. Indian Inst. Met.,*** 2022, 76, 545–563. (doi: 10.1007/s12666-022-02712-4)

31. A. Mishra, A.R. Paul, **M. Mukherjee**, R.K. Singh, and A.K. Sharma, Evaluation of Cu-Ti dissimilar interface characteristics for wire arc additive manufacturing process, ***Rapid Prototyping Journal***, 2022, 29(2), 366-377. (doi: 10.1108/RPJ-05-2022-0142)

32. S. Banerjee, A.R. Paul, **M. Mukherjee**, and S.R.K. Vadali, A new adaptive process control scheme for efficient wire arc additive manufacturing of thin-walled SS308L component, ***Int. J. Adv. Manuf. Technol.***, 2022, 121, 8099–8113. (doi: 10.1007/s00170-022-09912-8)

33. E. Chandrasekar, **M. Mukherjee**, D. Singh and S. Chidambaram, Evaluation of dieless hydroforming process for manufacturing of variable cross-section tubular structures, ***Proc. IMechE. Part C: Journal of Mechanical Engineering Science***, 2022, 236(19):10200-10213. (doi: 10.1177/09544062221101469)

34. S. Biswas, Y. Singh, **M. Mukherjee**, S. Datta, S. Barman and R. Manivannan, Design of multi-material model for wire electro-discharge machining of SS304 and SS316 using machine learning and MCDM techniques, ***Arab. J. Sci. Eng.***, 2022, 47, 15755–15778. (doi: 10.1007/s13369-022-06757-x)

35. D. Singh, R. Choudhury, **M. Mukherjee**, and Y. Singh, Development of non-linear models to evaluate the NiTi SMA spring actuator, ***J. Mech. Engg. Sci.***, 2022, 16(1), 8754–8769. (doi: 10.15282/jmes.16.1.2022.09.0692)

36. R. Manivannan, 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, 119, 4845–4861. (doi: 10.1007/s00170-022-08687-2).

37. A.R. Paul, **M. Mukherjee**, and D. Singh, A critical review on the properties of intermetallic compounds and their application in the modern manufacturing, ***Cryst. Res. Technol.***, 2022, 57(3), 2100159. (doi: 10.1002/crat.202100159).

38. 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***, 2021, 236 (7), 3497-3511. (doi: 10.1177/09544062211045489).

39. A.R. Dhar, D. Gupta, A.R. Paul, S.S. Roy, and **M. Mukherjee**, Hybridized artificial neural network-based expert systems for modelling of robotic- wire and arc additive manufacturing process, ***J. Inst. Eng. India Ser. C***, 2021, 102, 1461–1471. (doi: 10.1007/s40032-021-00762-z).

40. S. Senkathir, S. Pramanik, and **M. Mukherjee**, Evaluation of process parameters for poly (ether ether ketone) to poly (ether ether ketone) friction welded joint, ***Proc. IMechE. Part J: Journal of Engineering Tribology***, 2021, 236(2), 266-273. (doi: 10.1177/13506501211025120).

41. D. Singh, R. Choudhury, Y. Singh, and **M. Mukherjee**, Workspace analysis of 3-DOF U-shape base planar parallel robotic motion stage using shape memory alloy restoration technique (SMART) linear actuators, ***SN Appl. Sci.***, 2021, 3, 511. (doi:10.1007/s42452-021-04490-y).

42. D. T. Arun Kumar, K. G. Basava Kumar, A. Pattanaik and **M. Mukherjee**, Improvement of Al–Si hypoeutectic cast alloy properties by forging with grain refiner and modifier, ***Trans. Indian Inst. Met.***, 2020, 73(12): 3105–3112. (doi: 10.1007/s12666-020-02120-6).

43. S. Bhaumik, **M. Mukherjee**, P. Sarkar, A. Nayek, and V. Paleu, Microstructural and wear properties of annealed medium carbon steel plate (en8) cladded with martensitic stainless steel (aisi410), ***Metals***, 2020, 10, 958. (doi: 10.3390/met10070958).

44. A. Pattanaik, **M. Mukherjee** and S.B. Mishra, Influence of curing condition on thermo-mechanical properties of fly ash reinforced epoxy composite, ***Composite part B***: ***Engineering***, 2019, 176, 107301. (doi: 10.1016/j.compositesb.2019.107301).

45. A. Pattanaik, **M. Mukherjee** and S.C. Mishra: Effect of environmental aging conditions on the properties of fly ash filled epoxy composites, ***Advanced Composite Materials***, 2019, 29:1, 1-30. (doi: 10.1080/09243046.2019.1610930).

46. S.K. Singh, P.K. Raushan, K. Debnath, **M. Mukherjee** and B.S. Mazumder, Turbulence characteristics in boundary layers over a regular array of cubical roughness, ***ISH Journal of Hydraulic Engineering***, 2018, 27:4, 404-417. (doi: 10.1080/09715010.2018.1559773).

47. P.K. Raushan, S.K. Singh, K. Debnatha, **M. Mukherjee**, and B.S. Mazumder, Distribution of turbulent energy in combined wave current flow, ***Ocean Engineering***, 2018, 167, 310–316. (doi: 10.1016/j.oceaneng.2018.08.058).

48. S.K. Singh, D.S.K. Reddy, **M. Mukherjee**, M. Manikandan, and P. Kumar, Discussion of "Wave-current generated turbulence over hemisphere bottom roughness by Barman et al. (2018)", ***Estuarine, Coastal and Shelf Science***, 2018, 208, 49–51. (doi: 10.1016/j.ecss.2018.04.040).

49. T. Sarkar, **M. Mukherjee**, and T.K. Pal, Effect of cu addition on microstructure and hardness of as-cast and heat treated high-Cr cast iron, ***Trans. Indian Inst. Met.***, 2018, 71(6), 1455–1461. (doi: 10.1007/s12666-018-1282-3).

50. M. Sen, **M. Mukherjee,** S. K. Singh and T. K. Pal, Effect of double-pulsed gas metal arc welding (DP-GMAW) process variables on microstructural constituents and hardness of low carbon steel weld deposits, ***Journal of Manufacturing Processes***, 2018, 31, 424–439. (doi: 10.1016/j.jmapro.2017.12.003).

51. **M. Mukherjee** and T. K. Pal, Evaluation of microstructural and mechanical properties of Fe-16Cr-1Ni-9Mn-0.12N austenitic stainless-steel welded joints, ***Materials Characterization***, 2017, 131, 406–424. (doi: 10.1016/j.matchar.2017.07.028).

52. N. Kumar, **M. Mukherjee**, and A. Bandyopadhyay, Study on laser welding of austenitic stainless steel by varying incident angle of pulsed laser beam, ***Optics and Laser Technology*****,** 2017, 94, 296–309. (doi: 10.1016/j.optlastec.2017.04.008).

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54. **M. Mukherjee**, S. Saha, T. K. Pal and P. Kanjilal, Influence of modes of metal transfer on grain structure and direction of grain growth in low nickel austenitic stainless-steel weld metals, ***Materials Characterization***, 2015, 102, 9-18. (doi: 10.1016/j.matchar.2015.02.006).

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57. M. Sen, **M. Mukherjee** and T. K. Pal, Evaluation of correlations between DP-GMAW process parameters and bead geometry, ***Welding Journal***, 2015, 94(8), 265s-279s. (doi: supplement/WJ_2015_08_s265).

58. D. K. Adak, **M. Mukherjee**, T. K. Pal, Development of a direct correlation of bead geometry, grain size and HAZ width with the GMAW process parameters on bead-on-plate welds of mild steel, ***Trans. Indian Inst. Met.,*** 2015, 68(5), 839-849. (doi: 10.1007/s12666-015-0518-8).

59. **M. Mukherjee**, A. Dutta, T.K. Pal, P. Kanjilal and S. Sisodia, Enhancement of microstructural and mechanical properties by pulse mode of metal transfer in welded modified ferritic stainless steel, ***ISIJ International***, 2015, 55(7), 1439-1447. (doi: 10.2355/isijinternational.55.1439).

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63. **M. Mukherjee** and T. K. Pal, Role of microstructural constituents on surface crack formation during hot rolling of standard and low nickel austenitic stainless steels, ***Acta Metall. Sin. (Engl. Lett.)***, 2013, 26(2), 206-216. (doi: 10.1007/s40195-012-0200-7).

64. **M. Mukherjee** and T. K. Pal, Influence of mode of metal transfer on microstructure and mechanical properties of gas metal arc welded modified ferritic stainless steel, ***Metallurgical and Materials Transactions A***, 2012, 43A, 1791-1808. (doi: 10.1007/s11661-011-1069-1).

65. **M. Mukherjee** and T. K. Pal, Influence of heat input on martensite formation and impact property of ferritic-austenitic dissimilar weld metals, ***Journal of Material Science and Technology***, 2012, 28(4), 343–352. (doi: 10.1016/S1005-0302(12)60066-8).

B. Conferences/ Seminars (last five years only):

- A. Mishra, A.R. Paul, R. Sharma, **M. Mukherjee** et al., Interfacial characteristics of Ti6Al4V-IN718 dissimilar structure developed by wire-arc additive manufacturing using Monel-400 as an interlayer, 3rd International

Congress on Advances in Mechanical and Systems engineering (CAMSE 2022) at Meerut, Uttar Pradesh, India, July 2022. Published in Materials Today: Proceedings. 2023, 80 (1), 241-247. (DOI: 10.1016/j.matpr.2022.12.080).

- R. Sharma, A.R. Paul, **M. Mukherjee** et al., Forecasting of process parameters using machine learning techniques for wire arc additive manufacturing process, 3rd International Congress on Advances in Mechanical and Systems engineering (CAMSE 2022) at Meerut, Uttar Pradesh, India, July 2022. Published in Materials Today: Proceedings, 2023, 80 (1), 248-253. (DOI: 10.1016/j.matpr.2022.12.081).
- A. Nigam, E. Chandrasekar, **M. Mukherjee** et al., Effect of inlet gas velocity on laminar flow behaviour in shielding device for WAAM process, 3rd International Congress on Advances in Mechanical and Systems engineering (CAMSE 2022) at Meerut, Uttar Pradesh, India, July 2022. Published in Materials Today: Proceedings. 2023, 80 (1), 298-306. (DOI: 10.1016/j.matpr.2023.01.260).
- A.R. Paul, S. Biswas and **M. Mukherjee**, Conceptualisation of a novel technique to incorporate artificial intelligence in preventive and predictive maintenance in tandem, The Symposium on Failure and Preventive Maintenance of Machineries 2022. Published in Materials Today: Proceedings, 2022, 66 (99), 3814-3821. (DOI: 10.1016/j.matpr.2022.06.250)
- 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.
- A.K Saha, **M. Mukherjee**, S. Majumdar, Chandrasekhar E., and A. Kumar: "Finite Element Analysis and Experimental validation of thermal distortion and residual stress during Wire Arc Additive Manufacturing (WAAM) process", National Welding Seminar 2020-21 organized by IIW-India, Baroda, April 8-10, 2021.
- 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.
- 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).
- B. Debnath, A. Vinoth, **M. Mukherjee** and S. Datta: "Designing Fe-based high entropy alloy–a machine learning approach", IOP Conf. Series: Materials Science and Engineering, 2020, 912, 052021. (DOI: 10.1088/1757-899X/912/5/052021).
- D. Singh, R. Choudhury, Y. Singh, and **M. Mukherjee**: "Development and Workspace Analysis of Smart Actuation based Planar Parallel Robotic Motion Stage", IOP Conf. Series: Materials Science and Engineering, 2020, 912, 032063. (DOI: 10.1088/1757-899X/912/3/032063).
- Shatarupa Biswas, Yogesh Singh and **Manidipto Mukherjee**: "An Overview of Wire Electrical Discharge Machining (WEDM)", International Conference on Recent Developments in Mechanical Engineering (ICRAME 2020), organized by Department of Mechanical Engineering, NIT Silchar, India, February 07-09, 2020.
- Arka Ghosh, Hillol Joardar, **Manidipto Mukherjee**, Vishvesh J. Badheka, Bharat Doshi, Sushovan Basak: "Aluminiuum-stainless steel dissimilar joining by cold metal transfer process for cryogenic process plants", Proceedings of IIW International Congress 2020 organized by IIW, Mumbai, India, at CIDCO Exhibition Centre, February 6-8, 2020.
- Y. Singh, D. Singh, and **M. Mukherjee**: "Behaviour of NiTi based smart actuator for the development of planar parallel micro-motion stage", International Conference on Advances in Mechanical Engineering, organized by VNIT Nagpur, January 10-11, 2020.
- **Manidipto Mukherjee**, Hrishikesh Das and Sushovan Basak: "Effect of DP-GMAW and FSW process variables on AA6061 thin sheet welding", National Welding Seminar (NWS), organized by IIW-Kochi, Bolgatty Palace & Island Resort, Kochi, India, December 14-15, 2018.

- **Manidipto Mukherjee**, Vijay Kumar Pal, and Santosh Kumar Singh: "Evaluation of correlation between process parameter, bead geometry and microstructure of low nickel austenitic stainless steel weld deposits", Proceedings of 2nd International Conference on Advances in Mechanical Engineering (ICAME2018) organized by Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, India, March 22-24, 2018.

C. Books and Book Chapters

- Amrit Raj Paul, **Manidipto Mukherjee**, "Hybrid Welding Technologies", In: M. Manjaiah, T. Shivraman, A. Kumar (eds.) Advanced Joining Technologies, CRC Press, Taylor & Francis, Florida, USA, 2024. DOI: 10.1201/9781003327769-9.
- Amrit Raj Paul, **Manidipto Mukherjee**, "Metal Alloys and Beyond: Analysing the Horizon of WAAM Materials", In: M. Srivastava and S. Rathee (eds.) Wire Arc Additive Manufacturing: Fundamental Sciences and Advances, CRC Press, Taylor & Francis, Florida, USA, 2024. DOI: 10.1201/9781003363415-6.
- Shatarupa Biswas, Amrit Raj Paul, **Manidipto Mukherjee**, Yogesh Singh, "RSM-Based GA Model for Optimization of Machining Parameter of Ti–6Al–4 V in WEDM Process", In: Shunmugam, M.S., Doloi, B., Ramesh, R., Prasanth, A.S. (eds) Advances in Modern Machining Processes. Lecture Notes in Mechanical Engineering. Springer, Singapore, 2023, DOI: 10.1007/978-981-19-7150-1_24.
- Shatarupa Biswas, Yogesh Singh, **Manidipto Mukherjee**, "Optimization of MRR and KW of SS 304 in Wire EDM by RSM Technique", In: Sudarshan, T.S., Pandey, K.M., Misra, R.D., Patowari, P.K., Bhaumik, S. (eds) Recent Advancements in Mechanical Engineering. Lecture Notes in Mechanical Engineering. Springer, Singapore, 2023, DOI: 10.1007/978-981-19-3266-3_5.
- D. Singh, Y. Singh, **M. Mukherjee**, "Behaviour of NiTi Based Smart Actuator for the Development of Planar Parallel Micro-Motion Stage" In: V. Kalamkar and K. Monkova (eds) Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering. Springer, Singapore, 2021, ISBN 978-981-15-3638-0, DOI: 10.1007/978-981-15-3639-7_26.
- **M. Mukherjee**, "Wear Characteristics of LASER Cladded Surface Coating" In: J. Katiyar, P. Ramkumar, T. Rao, and J. Davim (eds) Tribology in Materials and Applications. Materials Forming, Machining and Tribology. Springer, 2020, ISBN 978-3-030-47450-8, DOI: 10.1007/978-3-030-47451-5_10.
- Shatarupa Biswas, Yogesh Singh, **Manidipto Mukherjee**, "A Study on Optimization Techniques of Electro Discharge Machining" In: S. Pathak (eds) Intelligent Manufacturing: Materials Forming, Machining and Tribology, Springer, 2020, ISBN 978-3-030-50312-3, DOI: 10.1007/978-3-030-50312-3_1.
- **Manidipto Mukherjee**, "GMA Welding of Modified Ferritic and Low Ni Austenitic Stainless Steel" E. Focsa (eds), 1st ed., LAMBERT Academic Publishing, Germany, 2017, ISBN: 978-3-330-03688-8.

INVITED TALKS (*Last five years only*):

- Invited talk on "**Advances in Welding, Cladding & Additive Manufacturing**" delivered in the National Welding Seminar, 2024 (NWS-2024), organized by Indian Institute of Welding- India (IIW-India) from 12th-14th December, 2024.
- Invited talk on "**Automation in Welding Technology**" delivered in the SERB Sponsored Two days Karyashala (workshop), organized by National Institute of Advanced Manufacturing Technology (NIAMT) Ranchi from 26-27 September 2024.
- Invited talk on "**From Conventional to Cutting-Edge: Navigating the Transition towards Additive Manufacturing**" delivered in 9th edition of the India International Science Festival (IISF), organized by CSIR-CMERI, Durgapur on 21st December 2023.
- Invited talk on "**Application of robotic system in the field of Wire Arc Directed Energy Deposition process**" delivered in DST-SERB sponsored Karyashala on Hands-on training on the high-end equipment related to the current emerging fields of Robotics and Mechatronics, organized by NIT Silchar, Assam on 28th July 2023.
- Invited talk on "**AI/ML in Wire Arc Additive Manufacturing**" organized by CSIR-CMERI, Durgapur, under DST-SERB sponsored Karyashala on AI and data science for industrial applications on 20th January 2023.

- Invited talk on "**Innovations in Wire Arc Additive Manufacturing**" organized by IIW India, Kolkata on 22nd April 2022.
- Invited talk on "**Wire Arc Additive Manufacturing**" organized by EEPC India, Kolkata, on 21st October 2021.
- Keynote lecture on "**Robotic Wire Arc Additive Manufacturing (WAAM) process**" delivered at International Conference on Recent Advances in Manufacturing Engineering Research (ICRAME) 2021, organized by the Department of Mechanical Engineering, SRM Institute of Science and Technology (SRM-IST), Kattankulathur Campus, Chengalpattu District, Tamil Nadu-603203 on 16th April 2021.
- Invited talk on "**Wire Arc Additive Manufacturing Processes**" organized by EEPC India, Kolkata on 23rd March 2021.
- Invited talk on "**Welding and Wire Arc Additive Manufacturing Processes**" organized by SIPG, CSIR-CMERI Durgapur on 6th October 2020.
- Invited talk on "**Aspects of Robotic Welding and its Advancement for Wire Arc Additive Manufacturing**" delivered in TEQIP III sponsored national workshop on Electronic Systems for Mechanical Automation and Robotic Technology (eSMART 20), organized by NIT Silchar, Assam on 12th September 2020.
- Invited talk on "**Wire Arc Additive Process for Medium to Large Engineering Component Manufacturing: A Comprehensive Review**" presented in WELD 2020 at the Institute of Engineering and Management, Salt Lake, organized by the Indian Institute of Welding, Kolkata on 7th March 2020.
- Invited talk on "**Advances Manufacturing for Industry 4.0**" at CODISSIA, Trade Fair Complex, Coimbatore, organized by EEPC India, Coimbatore on 5th March 2020.

SHORT TERM COURSES & WORKSHOPS:

- Five days **of Training on "Wire Arc Additive Manufacturing and Rapid Prototyping" at CSIR-CMERI Durgapur from** February 28 – March 04, 2022.
- Five days **of Training on "Wire Arc Additive Manufacturing and Rapid Prototyping" at CSIR-CMERI Durgapur from** November 15 – 19, 2021.
- Five days of **Webinar Training** on "Additive Manufacturing" at CSIR-CMERI in collaboration with NIT Durgapur during March 16 – 20, 2021.
- **One-day workshop** on "Current Trends in Material Joining Processes" organized by the Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, India, on October 10, 2018.
- **GIAN course** on "Welding Metallurgy and Weldability of Non-Ferrous Alloys" organized by IIT Madras, Chennai, Tamil Nadu, India, from December 11-15, 2017.
- **Faculty Development Programme** on "Advances in Welding Technology" organized by the Department of Mechanical Engineering, C.V. Raman College of Engineering, Bhubaneswar, from May 01-06, 2017.

PhD GUIDANCE:

Sl. No.	Name	Title	Status
1.	**Mr. Somnath Nandi**	Investigation of tribological behavior of SS-Ni functionally graded material with micro-alloying.	Ongoing (Reg. 2025)
2.	**Mr. Mriganka Maity**	Investigation of Residual Stress Through In-situ Hammering in Wire Arc Additive Manufacturing Process.	Ongoing (Reg. 2024)
3.	**Mr. Saptarshi Saha**	Effect of hard particle addition on the characteristics and performance of wire arc additively manufactured medium carbon steel.	Ongoing (Reg. 2023)
4.	**Mr. Suraj Yadav**	Influence of Post Deposition Heat Treatment on the Behaviour of WAAMed Ti-6Al-4V Alloy.	Ongoing (Reg. 2022)
5.	**Mrs. Manashi De**	Application of Computer Vision in Wire Arc Additive Manufacturing (WAAM).	Ongoing (Reg. 2022)
6.	**Mr. Amrit Raj Paul**	Analysis of interface characteristics to develop dissimilar wire and arc-based additive manufacturing components for industrial applications.	Ongoing (Reg. 2020)

7.	**Ms. Diya Mukherjee**	Development of aluminium-based superalloy for high-temperature applications.	Ongoing (Reg. 2020)
8.	**Mr. Yoshit Kumar Tiwari**	Effect of deposition path strategies on the metallurgical and mechanical properties of Ni-based super-alloys manufactured by Wire Arc Additive Manufacturing.	Ongoing (Reg. 2020)
9.	**Mr. Senkathir S.**	Development of suitable friction welding procedure for high-performance weld joints of dissimilar metal-reinforced polymer composites.	Thesis submitted (July 2024)
10.	**Dr. Shatarupa Biswas**	Development of WEDM parametric correlation model and process optimization for different alloys.	Completed (Nov. 2023)

M. TECH. PROJET GUIDANCE:

- **Mr. Afsal Ahammed C P** – Evaluation of dissimilar bi-metallic interface between carbon steel and aluminium alloy, 2023-2024.
- **Mrs. Tuhina Goswami** – Bead Geometry Monitoring in Wire Arc Additive Manufacturing by AI/ML Process, 2023-2024. (Adjudged by the Indian Institute of Welding as the winner of the **Weldwell Speciality Award-2024** for the **best M.Tech. Thesis**.)
- **Mrs. Sayani Mondal** – Effect of heat treatment on characteristics of aluminium based super alloy, 2022-23.
- **Mr. Avinash Mishra** – Evaluation of wire arc additive manufactured dissimilar Inconel 625-Ti6Al4V wall characteristics, 2021-2022.
- **Mr**. **Aditya Nigam** – Design and development of universal laminar shielding device for protecting active alloys in wire arc additive manufacturing, 2021-2022.
- **Ms**. **Ruchi Sharma** – Development of sensor-based feedback system for layer geometry monitoring and control in wire arc additive manufacturing, 2021-2022.
- **Mr**. **Abhinandan Banerjee** – Analysis of melt pool behaviour in arc-based additive system using image processing techniques, 2021-2022.
- **Mr**. **Arunabha Datta** - Optimization of path strategies for bulk deposition using finite element analysis, 2021-2022.
- **Mr. Reyazul Warsi –** Effect of deposition path on additively manufactured wall characteristics of Al4043 alloy, 2020-2021.
- **Mr. Avash Kumar Saha -** Finite Element Analysis and Experimental validation of thermal distortion and residual stress during Wire Arc Additive Manufacturing (WAAM) process, 2020-2021.
- **Mr. Deep Singh -** Design of 3-DOF planar robotic manipulator using shape memory alloy spring as actuators for micro-motion stage, 2018-2019. (SRMIST Gold medal in Research Day 2019 for the best paper)
- **Mr. M. Ajay Rahul -** Development of Mg composites compatible with temporary implants through friction stir processing, 2018-2019.

SKILLS & ACTIVITIES:

Skills Gas Metal Arc Welding, Gas Tungsten Arc Welding, Manual Metal Arc Welding, Submerged Arc Welding, Friction Stir welding, Resistance Spot Welding, MIG-Brazing, TLP bonding, High Speed Imaging, Oscilloscope, Optical Microscopy, Scanning Electron Microscopy, Transmission Electron Microscopy, X-ray Diffraction, Texture-phase Mapping, EBSD Technique, Feritscope, Materials Processing, Tensile Testing, Impact Testing, Hardness Testing, High cycle Fatigue, Failure Analysis, Corrosion Analysis, Micromechanical Testing, Phase Transformations, Heat Treatment, Severe Plastic Deformation, Fractography, OriginPro, Photoshop, AutoCAD, COMSOL Multiphysics, MiniTAB.

Languages English; Hindi; Bengali

Scientific Memberships Member of The Institute of Indian Foundrymen (M/16766/E/DPC) and Secretary of IIF Activity Center, Durgapur (2020-2022), Life Member of Indian Institute of Welding (R-11868/L), Associate Member of Institute of Engineers, AMIE (AM1817550), Chartered Engineer, CEng (India).

Area of Interest	Fluid Flow Behaviour, Modes of Metal Transfer, Microstructural and Mechanical Characterization of Metals and Alloys, Welding and Joining, Statistical Methodologies, High Cycle Fatigue and Fracture, Corrosion Behaviour of Metals and Alloys, Material Processing and Alloy Design, Additive Manufacturing.
Journal Reviewer	Virtual and Physical Prototyping; Rapid Prototyping Journal; Rare Metals; Science and Technology of Welding and Joining; Journal of Materials Processing Technology; Materials and Manufacturing Processes; Engineering Failure Analysis; Materials and Design; Journal of Materials Engineering and Performance; Journal of Nondestructive Evaluation; Materials Chemistry and Physics; The International Journal of Advanced Manufacturing Technology;

PERSONAL INFORMATION:

Father's name	Mr. Sambhu Nath Mukherjee
Mother's name	Mrs. Mira Mukherjee
Date of Birth	15th October, 1986
Gender	Male
Marital status	Married
Spouse name	Mrs. Sushmita Sen (Mukherjee)
Daughter's name	Ms. Tanvika Mukherjee
Hobbies	Photography, Driving, Trekking

REFERENCE:

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DECLARATION

I hereby declare that the information mentioned above is correct to the best of my knowledge, and I bear the responsibility for the correctness of those mentioned above.

Place: - Durgapur

Date: - 19.12.2024

Signature