Dr. D. Rajamani Ph.D. (Vel Tech University, Chennai)
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Research Areas

Additive Manufacturing, Non-traditional machining of superalloys, Optimization, Composite structures

Projects & Publications Summary

Project		Publication Count		Citation Count			Impact Factor
Completed	01	SCI	015		Google	SCOPUS	39.98
Ongoing	01	SCOPUS	032	Citations	254	155	
Submitted	03	Books	000	h-index	09	07	
		Books chapters	010	i10index	07	05	

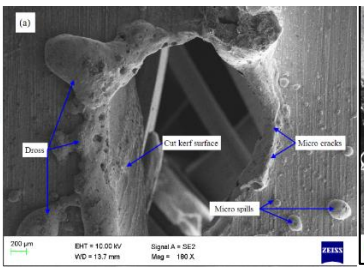
National/International Collaboration

- University of Aveiro, Portugal – Plasma processing of nickel superalloys
- University of Naples Federico II, Italy – Development of tailored alloys for additive manufacturing
- Helwan University, Egypt – Optimization of advanced machining processes
- King Saud University, Saudi Arabia – Metaheuristic algorithms for processing of advanced engineering materials
- Central Manufacturing Technology Institute, India – High strain rate characterization of AM materials

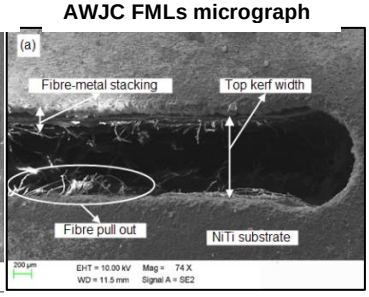
Research snippets

Custom built SIS system

AWJC Monel 400 alloy micrograph



AWJC FMLs micrograph



Research facilities

- Marsurf surface roughness tester
- Toolmakers microscope
- Selective Inhibition Sintering system
- Vacuum resin infusion system

Outline of Research Works

- Characterization of abrasive waterjet processed fibre intermetallic laminates.
- High strain rate characterization of additive manufactured metallic parts for ballistics applications.
- Development of selective inhibition sintering system for the fabrication of cost-effective near net shape metallic parts.
- Machine learning (Intelligent modelling and optimization) for advanced manufacturing processes
- Development of tailored alloys for additive manufacturing.

Details of Funded Projects

S.No	Project Title	Funding agency	Amount (Rs.)	Duration	Collaboration
1.	High strain rate characterization of additive manufactured materials for ballistic loading applications.	SERB-TARE	18,30,000/-	2021-24 (Ongoing)	CMTI
2.	Development and machinability characteristics of fibre intermetallic laminates	VEL TECH SEED FUND	1,90,000/-	2018-19 (Completed)	-

Recent Best 5 SCI Publications

- *B Murali, BM Vijaya Ramnath, **D Rajamani**, E Abouel Nasr, A Astarita.* Experimental Investigations on Dry Sliding Wear Behavior of Kevlar and Natural Fiber-Reinforced Hybrid Composites through an RSM–GRA Hybrid Approach, *Materials*, Vol.15(3), pp.749, 2022 - IF: 3.623.
- ***D Rajamani**, M Siva Kumar, E Balasubramanian, A Tamilarasan*. Nd: YAG laser cutting of Hastelloy C276: ANFIS modeling and optimization through WOA, *Materials and Manufacturing Processes*, Vol 36 (15), pp. 1746-1760, 2021 - IF: 4.616
- *B Esakki, TK Ali, **D Rajamani**, S Sachin*. Parametric Optimization on Impact Strength of Selective Inhibition Sintering Fabricated PA-12 Parts Based on Evolutionary Optimization Algorithms, *Journal of Materials Engineering and Performance*, Vol.30(7), pp. 5356–5367, 2021 - IF: 1.819
- *S Ganesan, B Esakki, LJ Yang, **D Rajamani**, M Silambarsan*. Fabrication of flapping-wing micro mechanism assembly using selective laser melting and aerodynamic performance measures, *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, (In press), Sep 2021- IF:2.311
- *M Sivakumar, **D Rajamani**, EA Nasr, E Balasubramanian, H Mohamed*. A hybrid approach of ANFIS-Artificial bee colony algorithm for intelligent modeling and optimization of plasma arc cutting on Monel™ 400 alloy, *Materials*, Vol.14 (21), pp.6373, 2021 – IF: 3.623

Books

NIL

Patents

NIL

Fellowships/Awards/Recognitions

- Recipient of "*Early Career Academic Grant*" from The Association of Commonwealth Universities, United Kingdom (2017).
- Recipient of "*International Travel Grant - Young Scientist Scheme* (Grant file no. ITS/2018/003124)" from DST-SERB, Govt. of India (2018).
- Recipient of "*Junior Research Fellowship*" for perusing Ph.D from ARMREB-DRDO, Govt. of India (2016-2017).

PhD Thesis Guidance

Scholar Name	Thesis Title	University	Status	Year
1. K. Karthik	Studies on Mechanical Vibration and Wear Behaviour of Hybrid Polymer Matrix Composites	Vel Tech, Avadi	Completed	2020

2. T. Subesh	Development and machinability studies on magnesium fibre metal laminates	Vel Tech, Avadi	Ongoing	2021

Editorial/Review Activities

- Measurement (Elsevier) - Reviewer
- Journal of Mechanical Science and Technology (Springer) - Reviewer
- Brazilian Journal of Mechanical Sciences and Engineering (Springer) - Reviewer
- Rapid Prototyping Journal (Emerald) - Reviewer
- International Journal of Precision Engineering and Manufacturing-Green Technology (Springer) - Reviewer
- Journal of Industrial Textiles (SAGE) - Reviewer
- Journal of Thermoplastic Composite Materials (SAGE) - Reviewer
- Polymers and Polymer Composites (SAGE) - Reviewer
- Part G - Journal of Aerospace Engineering (SAGE) - Reviewer
- Materials (MDPI) - Reviewer