Department of Mechanical Engineering

Name	***Dr.A.PERUMAL***				
Date of Birth	03.01.1987				
Unique ID	1-3357199447				
Educational Qualifications	*Ph.D*				
Designation	PROFESSOR				
Email ID	perumal.a@sethu.ac.in,				
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Experience	Industry	Teaching	Others	Total	
	02	13	-	15	
Date of Joining the Institution	09.07.2016				
Area of Specialization	***Materials, Machining, EDM, WEDM, AWJM, Optimization***				
Courses taught	Engineering Mechanics, Power Plant Technology, Project Management and Finance, Engineering Graphics, Basic Mechanical, Industrial Safety, Manufacturing Technology-I & II, Refrigeration and Air Conditioning				
Research Focus	Metal Matrix , Corrosion, Machining, Additive Manufacturing				
Research guidance (Number of Scholars)	01				
Subject Competency	Manufacturing Technology-I &II				
No. of papers published	National Journals	International Journals	Conferences		
	0	***21***	***09***		
PG Specialization	Manufacturing Engineering				
Ph.D. Specialization	Materials				
Projects Carried out	***MATERIALS WITH MACHINING***				
Patents (Filed & Granted)	***03***				

Academic Credentials

Level	Degree	Specialization	University	Year of Completion
UG	B.E	MECHANICAL ENGINEERING	ANNA UNIVERSITY, CHENNAI	2008
PG	M.E	MANUFACTURING ENGINEERING	ANNA UNIVERSITY, CHENNAI	2012
Ph.D	Ph.D	MECHANICAL	ANNA UNIVERSITY, CHENNAI	2021

Details of Journal Publication:

1. **Perumal.A**, Azhagurajan.A, Baskaran.S, Prithivirajan.R, & Narayanasamy.P Statistical evaluation and performance analysis of electrical discharge machining (EDM) characteristics of hard Ti-6Al-2Sn-4Zr-2Mo alloy. Materials Research Express, 6(5)056552(2019), doi:10.1088/2053-1591/ab06da. (IOP Impact factor 1.61)
2. **Perumal.A**, Azhagurajan.A, Prithivirajan.R. etal., Experimental Investigation and Optimization of Process Parameters in Ti – (6242) Alpha–Beta Alloy Using Electrical Discharge Machining. Journal of Inorganic and Organometallic Polymers and Materials**,** 31, pages1787–1800 (2021),Doi.org/10.1007/s10904-020-01786-1. (Springer Impact factor 3.543).
3. **Perumal, A**. Azhagurajan, &S.Suresh kumar R. Prithivirajan, C. Kailasanthan, A.JohnRajan, G.Venkatesan, P.R.Rajkumar, Experimental Investigation on Surface morphology and Parametric Optimization of Ti- 6Al- 2Sn- 4Zr- 2Mo alpha-beta alloy through AWJM, **Tierarztliche Praxis**,Vol40(2020)pp1681-1703.
4. **Perumal, A.,** Azhagurajan, A., S.Sureshkumar ,Prithivirajan, R. Baskaran,S "Influence of optimization Techniques of Wire Electrical Discharge Machining of Ti-6Al-2Sn-4Zr-2Moalloy and Modeling approach" Journal Inorganic and Organometallic Polymer and materials. DOI : 10.1007/s10904-021-01953-y
5. **Perumal,A.** C.Kailasanthan, J.Stalin, P.R.Rajkumar, T.Gangadharan G.Venkatesan "Multi Response Optimization of Wire EDM Parameters for Ti-6Al-2Sn-4Zr-2Mo (α-β) Alloy using Taguchi-Grey Relational Approach" Advances in Materials Science and Engineering Volume 2022, https://doi.org/10.1155/2022/6905239 (Hindawi Impact factor 2.098).
6. **A.Perumal , P**.R. Rajkumar , G. Venkatesan , S. Paramasamy'Multi-response Optimization of Machining Parameters of Ti-6Al-2Sn-4Zr-2Mo alloy using EDM process through Grey Relational Analysis, Engineering Research Express Eng. Res. Express 5 (2023) 025005.
7. Gangadharan T., Kailasanathan C., Rajkumar P. R, **Perumal. A**. & Chitra Priya Darshini K.R Tribological and Mechanical Properties of Hybrid nHAp/ SiO2/chitosan Composites Fabricated from Snail Shell Using Grey Rational Grade (GRG) Analysis, **Silicon** (2021). https://doi.org/10.1007/s12633-021-01436-2
8. S Prathap Singh, S Suresh Kumar, D Elil Raja, Tushar Sonar, Mikhail Ivanov, G Velmurugan, **A Perumal**, Machinability studies on AA–SiC–TIO2 based heat treated HMMC with negative polarity electrode using EDM, Int J Interact Des Manuf (2023).

9. G Venkatesan, **A Perumal,** R Prithivirajan, S Muthu Natarajan, P Balasundar "Investigation of mechanical properties of environmentally friendly human hair fiber-reinforced polymer composite" Journal of Polymer Research, Volume 32, article number 11, (2025)
10. **Perumal,A**.C.Kailasanthan,J.Stalin,P.R.Rajkumar,T.GangadharanG.Venkatesan," Evaluation of EDM process parameters on Titanium alloy through Taguchi approach" Materials Today: Proceedings, Doi.org/10.1016/j.matpr.2020.10.737
11. **Perumal,A.** C.Kailasanthan, A Vincent Herald Wilson, T.Sampath Kumar, B.Stalin, P.R.Rajkumar, "Machinability of Titanium alloy 6242 by AWJM through Taguchi method" , Materials Today: Proceedings, Doi.org/10.1016/j.matpr.2021.04.067.
12. Velmurugan G.; Dinesh Kumar N.; **Perumal A**.; Rajkumar P. R.; et.al Potential utilization and characterization of epoxy based biomaterials under alkaline environment. Volume 2516, Issue 1 AIP Conf. Proc. 2516, 050001 (2022)
13. John Rajan A, C. Kailasanthan, Stalin B, Rajkumar P.R, Gangadharan T, **Perumal.A,** Optimization of mould sand properties by mixing of granite powder using Taguchi method, **Materials Today: Proceedings**.
14. Suresh KumarS.a Thirumalai Kumaran S.Velmurugan G. **Perumal.A** "Physical and mechanical properties of various metal matrix composites: A review" **Materials Today: Proceedings** doi.org/10.1016/j.matpr.2021.07.354
15. **Perumal A**; Rajkumar PRR; et.al "Experimental investigation of machining parameters of EDM process for machining Ti alloy" AIP Conf. Proc. 3192, 020067 (2024)
16. Prasanna V; Anand P; Vijayan R; Lakshmanan S; Venkatesan G; **Perumal A**; Rajkumar PR "Reinforcement learning technique applied to the manufacturing industry for material handling system" AIP Conf. Proc. 3192, 020062 (2024)
17. Rajkumar PR; Prasanna V Ramdas; Anand P; Vijayan R; Lakshmanan S; Venkatesan G; **Perumal A** "Synthesis, characterization and corrosion resistance of sol-gel treated aluminium alloy" AIP Conf. Proc. 3192, 020068 (2024)
18. Anand P; Vijayan R; Lakshmanan S; Venkatesan G; **Perumal A**; Rajkumar PR; Prasanna Venkatesh R, "Optimizing noise reduction through redesigned three-blade horizontal axis wind turbine" AIP Conf. Proc. 3192, 020063 (2024)
19. Venkatesan G; **Perumal A**; Rajkumar PR; Prasanna V; Anand P; Vijayan R; Lakshmanan S" Review on dissimilarly welding techniques titanium alloys" AIP Conf. Proc. 3192, 020066 (2024)
20. Lakshmanan S; Venkatesan G; **Perumal A**; Rajkumar PR; Prasanna V; Anand P; Vijayan R" A study of oxidation behaviour of hard-faced surface on steel using SMAW" AIP Conf. Proc. 3192, 020065 (2024)

Details of Conference attended:

1. P.R. Rajkumar, G. Venkatesan, K. Arun Balasubramanian, A. Perumal, T. Yogesh, "**Enhancing Corrosion Resistance of Double Layer Epoxy Coating for Mg-B4C Composites through Synergistic Effect of Functionalized Graphene and Blocking Layer**", International Conference on Recent Advances and Trends in Science, Technology, Engineering and Management RATSTEm-2025 on 03 & 04 April 2025.
2. G. Venkatesan, P.R. Rajkumar, A. Perumal, S. Paramasamy, M. Dinesh Kumar, "**Study on Mg-B4c Composites with Double Layered Hybrid Epoxy Resin Coating through Ionic Liquid Conversion Pretreatment to Improve its Corrosion Resistance**", International

Conference on Recent Advances and Trends in Science, Technology, Engineering and Management RATSTEm-2025 on 03 & 04 April 2025.

3. Paper titled "**Experimental Investigation of Optimize the Process Parameter of WEDM Using TI-6AL-4V Alloy**" National Conference on Global Technologies in Manufacturing and Thermal Sciences (GTMTS 2024), 26th April, 2024, Sethu Institute of Technology, and Kariapatti.
4. Paper titled "**Design and analysis of falling object protective structure for excavator Cabin"** presented in the 11th National Conference on "Research Advances in Mechanical Engineering" RAME'24, 05- 06 April 2024 at P.S.R. Engineering College. Sivagasi**.**
5. Paper titled "**Investigation on corrosion protection behavior of mg–b 4 c composites under salt spray environment**" Proceedings of International Conference on Emerging Trends in Science, Engineering and Technology – ICETSET2k23, 28th June 2023 at Fatima Michael College of Engineering and Technology, Madurai.
6. Paper titled **"Experimental study of EDM process machining parameters of ti alloy"** International Conference on Materials, Analysis & Advanced Manufacturing (MA'AM - 23), 31st October 2023, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-600062
7. Paper titled "**Machinability of Titanium Alloy 6242 by Abrasive Water Jet Machining**" presented in the International conference on contemporary Design and analysis of Manufacturing and Industrial Engineering systems (CDAMIES 2018) 18- 20 January 2018 at National Institute of Technology, Tiruchirappalli.
8. Papers titled "**Optimization of EDM process parameters onTi-6Al-4V by Gray Relation Analysis"** presented in the International conference on contemporary Design and analysis of Manufacturing and Industrial Engineering systems (CDAMIES2018)18-20 January 2018 at National Institute of Technology, Tiruchirappalli.
9. Papers titled "**Experimental investigation of machining parameters of EDM process for machining ti-based alloy**". Presented in National conference on Intelligent Manufacturing systems (NCIMS2012)21-22 March2012 at Hindustan college of Engineering and Technology, Coimbatore.

Details of Book Chapter and Books Published:

1. B. Muthu Chozha Rajan, A. Senthilkumar,A. Saravanakumaar, A. Perumal, "Properties of biopolymers and their recent developments" Sustainable Fillers /Plasticizers for Polymer Composites, 2025, Pages 289-313.
2. Thavasilingam, K., Sakthimurugan, D., Prasanna Raj Yadav, S., Selva Bharathi, R.,Perumal, A. (2025). Tribological Behaviour and Wear Mechanisms of Titanium Alloys in Bio-medical Applications. In: Khan M., A., Singh, G., Sulaiman, S. (eds) Challenges and Innovations in 3D Printed Bio-Organs and Their Materials. Springer Tracts in Additive Manufacturing.
3. Chattopadhyay, A., Suresh Kumar, S., Varol, T., Perumal, A. (2025). Additive Manufacturing of Soft Materials and Soft Gel for Bio-organs. In: Khan M., A., Singh, G., Sulaiman, S. (eds) Challenges and Innovations in 3D Printed Bio-Organs and Their Materials. Springer Tracts in Additive Manufacturing.

Details of Patents Filed and Granted:

1. Processor Implemented Method for Water marking and Cyber Protection of Deep Learning Models
2. Solar Grass Cutting Machine, Design Accepted and Published, Journal No is 43/2023 and Journal Date is 27/10/2023
3. Semi-Trailing Arm Suspension With Integrated Knuckle For Vehicles, Application Number : 202441100553
4. Design and fabrication of 3d food printer with Artificial Intelligence and machine learning for customized Nutrition food product -202441099341, published date: 27.12.2024

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