


SRES', Sanjivani College of Engineering, Kopargaon
(An Autonomous Institute affiliated to SPPU, Pune)

Staff Profile

Personal Information			
Name of Teaching Staff : Dr. SACHIN S RAJ			
Designation : Assistant Professor			
Department : Mechatronics Engineering			
Date of joining : 10.10.2022			
E Mail ID :	sachinsrajmk@sanjivani.org.in		
Contact No:	6380564994		
Education Details			
Qualification	Specialization with Class or Grade	University	Year
Ph.D.	Mechanical Engineering - 8.2 CGPA	Anna University	2020
PG	Manufacturing Engineering - 9.57 CGPA	Vinayaka Misson's University	2016
UG	Mechanical Engineering - 8.3 CGPA	Anna University	2014
Total experience in years:			
Teaching:	9 years		
Industry:	-		
Research and Publications			
<u>Year 2025</u>			
<ol style="list-style-type: none"> 1. Cloud monitoring of temperature and humidity in 3DFDM printer using ESP32 node MCU interfaced with Thingspeak using arduino IDE SS Raj, MA Madhusudhananj, DS Somase, SV Lad, SB Lokhande, AIP Conference Proceedings 3175 (1), 030023 2. Optimization of technological modifier ratio on Barley straw powder reinforced thermoplastic composite for computer hardware KA Michailovich, SS Raj, ME Evgenyevna, SV Bhaskar, V Krishnasamy AIP Conference Proceedings 3175 (1), 030025 			

3. Influence of silane-treated lignin and Celosia argentea stem fiber on load bearing, tribology and flame retardant behavior of vinyl ester composites AB Bhagwat, SS Raj, S Sathiyamoorthi, B Kamaraj, SS Ingle, Polymer Bulletin, 1-19
4. Coating techniques for coating fibers and polymers and their stability SS Raj, B Mylsamy, T Velayutham, K Aruchamy, SK Palaniappan, Surface Modification and Coating of Fibers, Polymers, and Composites, 313-329
5. Synthesis and characteristics study of epoxy composites made with various stacking of jute fiber through hand layup route MK Amarnath, SS Raj, K Marimuthu, PC Balasubramanian, V Rathinavelu, The International Journal of Advanced Manufacturing Technology 136 (1), 27-35

Year 2024

6. Explicit Dynamic Analysis of Multilayer Sheet Metal Forming—A Simulatory Analysis P Mohan Babu, M Saravanan, S Krishnakumar, SR Sachin Strength of Materials 56 (2), 386-399
7. Hybrid nanofabrication of AZ91D alloy-SiC-CNT and Optimize the drill machinability characteristics by ANOVA route P Vimala, K Deepa, A Agrawal, SS Raj, S Premalatha, V Mohanavel, M Ali Optical and Quantum Electronics 56 (4), 519

Year 2023

8. Numerical investigation of sandwich plate in bending by a new inverse shear deformation theory based on finite element analysis DP Bhaskar, SV Bhaskar, SS Raj, LS Dhamande Forces in Mechanics 13, 100238
9. Polylactic Acid Biocomposites SS Raj, V Chinnasamy, K AruchamyAdvances in Manufacturing, Automation, Design and Energy Technologies
10. Research Article Performance of Polymer Composite Constituted Cabinet Dryer Integrated within a Solar Flat Plate CollectorSR Sachin, AM Kuzmin, S Krishnakumar, A Jayaganthan, Y Admassu
11. Emission analysis of catalytic converter with coating of nanomaterials SS Ingle, KG Joshi, SS Raj, E Elangovan Materials Today: Proceedings 90, 250-255
12. Performance of polymer composite constituted cabinet dryer integrated within a solar flat plate collector SR Sachin, AM Kuzmin, S Krishnakumar, A Jayaganthan, Y Admassu Advances in Materials Science and Engineering 2023 (1), 2708776
13. Selective micro wood reinforcements for bio-wood plastics deliberating mechanical and degradation properties SS Raj, E Elangovan, P Arulmozhi, N Murugan Materials Today: Proceedings 90, 24-28.

Year 2022

14. Behavior of epoxy reinforced banana glass fiber hybrid composite with nanoclay interference M Sudhagar, TK Kannan, SB Lazarus, R Rajasekar, SS Raj PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART C
15. Design and optimization of linear Fresnel reflector concentrating solar system using particle swarm optimization algorithms M Babu, N Bhuvanesh, SS Raj, E Elavarasan Materials Today: Proceedings 66, 1038-1043
16. Investigation of the orientational mechanical properties of biodegradable extrusion films based on polyolefins and beet pulp AM Kuzmin, AA Shabarin, SS Raj Materials Research Proceedings 21
17. Effect of glycerol on the properties of coconut oil cake reinforced poly (lactic acid) SS Raj, T Chellapandian, B Nanjappan Polimery 67 (2)

Year 2021

18. Wood-Plastic Composite Processing and Mechanical Characteristics—A Brief Literature Review SS Raj Recent Advances in Manufacturing, Automation, Design and Energy Technologies
19. Wood-Plastic Composite Processing SS Raj Recent Advances in Manufacturing, Automation, Design and Energy Technologies
20. Philosophy of selecting ASTM standards for mechanical characterization of polymers and polymer composites SS Raj, AM Kuzmin, K Subramanian, S Sathiamoorthy, KT Kandasamy Materiale Plactice 58 (3), 247-256
21. Influence of Nanoclay on the technical properties of Glass-Abaca hybrid Epoxy composite S Manickam, TK Kannan, BL Simon, R Rathanasamy, SS Raj Polimeros 30, e2020038
22. Why not stir casting for polymer composites? Investigations on poly lactic acid based wood plastic composite SS Raj, TK Kannan, M Kathiresan, K Balachandar, S Krishnakumar Materials Today: Proceedings 45 (2), 862-868
23. Theoretical design, material study and material selection for compact linear Fresnel reflector concentrating system M Babu, PS Babu, SS Raj, S Saravanan Materials Today: Proceedings 45 (2), 1671-1678
24. Angular error correction and performance analysis of linear Fresnel reflector solar concentrating system with varying width mirror reflector M Babu, AM Kuzmin, PS Babu, SS Raj, C Thiruvassagam Materials Today: Proceedings 45 (2), 2348-2353

Year 2020

25. Comprehensive review on mechanical characters of plant particle reinforced polylactic acid biocomposites SS Raj, V Chinnasamy, K Aruchamy International Conference on Future technologies in Manufacturing, Automation
26. Effect of wood particulate size on the mechanical properties of PLA biocomposite SR Sachin, TK Kannan, R Rajasekar Pigment & Resin Technology 49 (6), 465-47
27. Mechanical, Degradation and Morphological Investigations on Tamarindus Indica Reinforced Poly Lactic Acid bio-composites for biomedical applications SR Sachin, AM Kuzmin, C Thiruvassagam Journal of Optoelectronic and Biomedical Materials Vol 12 (4), 121-131
28. Influence of prosopis juliflora wood flour in poly lactic acid–developing a novel bio-wood plastic composite SS Raj, TK Kannan, R Rajasekar Polimeros 30 (1), e2020012
29. Mechanical characterization and corrosion characteristics of fly ash particulates of bagasse reinforced Al 6061 composite material VM Sachin S Raj, Kanna T K, Krishnakumar S, Sudhagar M International Journal of Recent Technology and Engineering (IJRTE) 9

Papers presented in conferences:

1. Anton M Kuzmin, **Sachin S Raj**, E Mastaligina Elena, S V Bhaskar, G Vengatesan, (April 2023) “Optimization of technological modifier ratio on barley straw powder reinforced thermoplastic composite for computer hardware”, **PECMACT – ICONIC 2k23** held at Panimalar College, Chennai.
2. Bhaskar S V, **Sachin S Raj**, Bhaskar, D P, (March 2023), “Drilling process of AISI D2 steel with a TiAlSiN-Coated carbide drill – An experimental investigation and a statistical approach”, **ICAMT 4.0** held at Bannari Amman Institute of Technology, Erode.
3. **Sachin S Raj**, Elavarasan E, Murugan N, Arulmozhi P, (December 2022), “Selective micro wood reinforcements for Bio-wood plastics deliberating mechanical and degradation personalities”, **ICOFT 2022** held at National Institute of Technology, Puducherry.
4. Anton M. Kuzmin, Alexander A. Shabarin, **Sachin S. Raj**, (January 2022), “Investigation of the Orientational Mechanical Properties of Biodegradable Extrusion Films Based on Polyolefins and Beet Pulp”, **ICMTMTE 2021**, Materials Research Proceedings, Vol. 21, 144-149, Millersville PA, USA, <https://doi.org/10.21741/9781644901755-26>.
5. **Sachin S Raj**, (December 2021), “Performance of polymer composite constituted cabinet dryer integrated within solar flat plate collector”, **ICTAES 2021**, held by Heat Pump Research Institute in association with Al-Farabi Kazakh National University, Kazakhstan.
6. **Sachin S Raj**, (December 2021), “Comprehensive review on Mechanical characters of plant

particle reinforced Poly Lactic Acid Bio-Composites”, ICOFT 2021 , held at NIT, Puducherry.	
7. Sachin S Raj , (December 2021), “Selective micro wood reinforcements for biowood plastics deliberating mechanical and degradation personalities”, ICAMR 2021 , held at Bannari Amman Institute of Technology, Erode.	
8. Sachin S Raj , (December 2020), “Wood plastic composite processing and mechanical characteristics – a brief literature review”, ICOFT 2020 , organized by National Institute of Technology, Puducherry.	
9. Sachin S Raj , T.K.Kannan, M.Kathiresan, K.Balachandar, S.Krishnakumar, (December 2019) “Why not stir casting for polymer composites? Investigations on poly lactic acid based wood plastic composite”, ICAMR 2019 , organized by Bannari Amman Institute of Technology, Erode.	
Research Profile URL	
Google Scholar	https://scholar.google.com/citations?user=RArDa9cAAAAJ&hl=en
Scopus	https://www.scopus.com/authid/detail.uri?authorId=57208299010
Orcid	https://orcid.org/0000-0003-0553-1647
Web of Science	https://www.webofscience.com/wos/author/record/ABC-1256-2021
Other Research Details	
Ph D Guide ?Give field & University:	PhD Guide: Yes Field: <ul style="list-style-type: none"> ● Mechanical Engineering. ● Composite Materials ● Natural fibers

	University: Anna University, Chennai.
Ph.d Guided details	Nil

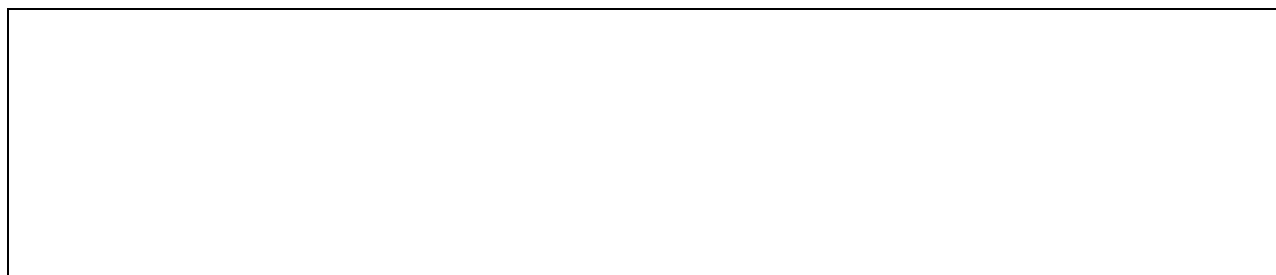
<p>Books Published</p>	<ol style="list-style-type: none"> 1. *Sachin S Raj, Bhuvaneshwaran Mysamy, Thirumuruga Velayutham, Karthik Aruchamy, Sathish Kumar Palaniappan, Suchart Siengchi, “14 - Coating techniques for coating fibers and polymers and their stability, “Polymers and Composites Techniques Properties and Applications, Elsevier Series on Tribology and Surface Engineering, Pg: 313-329, (17 Jan 2025). 2. *Sachin S Raj, Vivekanadhan C, Karthick A, “Comprehensive review on mechanical characters of plant particle reinforced polylactic acid biocomposties”, Advances in Manufacturing, Automation, Design and Energy Technologies, 57-64, Chapter 6: Lecture Notes in Mechanical Engineering, ICoFT Eds. Sivaram N M, Sankaranarayananasamy K and Paulo Davim J, https://doi.org/10.1007/978-981-99-1288-9_7, ISBN no. 978-981-99-1287-2, Springer (Aug 2023). 3. *Anton M Kuzmin, Alexander A Shabarin, Sachin S Raj, “Investigation of the Orientational Mechanical Properties of Biodegradable Extrusion Films Based on Polyolefins and Beet Pulp”, in Materials Research Proceedings, Vol. 21, 144-149, Chapter 26: Modern Trends in Manufacturing Technologies and Equipment, ICMTMTE Eds. Sergey B and Stanislav R, https://doi.org/10.21741/9781644901755-26, ISBN no. 978-1-64490-175-5, Materials Research Forum - USA (Jan 2022).
	<ol style="list-style-type: none"> 4. *Sachin S Raj, “Wood-Plastic composite processing and mechanical characteristics – A brief literature review”, Recent Advances in Manufacturing, Automation, Design and Energy Technologies, 269-276, Chapter 32: Lecture Notes in Mechanical Engineering, ICoFT Eds. Senthil K N, Rajiv P and Sankaranarayananasamy K, http://dx.doi.org/10.1007/978-981-16-4222-7_32, ISBN no. 978-981-16-4221-0, Springer – Singapore (Oct 2021). 5. †Sachin S Raj, “Influence of Prosopis Juliflora wood flour in Poly Lactic Acid– Developing a novel Bio-Wood Plastic Composite”, https://www.elivapress.com/en/book/book-7849247659/, ISBN no. 978-1636481197, Eliva Press - Moldova (Feb 2021). 6. *Sachin S Raj, “Covid-19 india – A brief review of economy and aftermath”, Chapter 15: Covid – 19 pandemic: challenges and opportunities in the effects of global economy, ISBN no. 938786535-5, GMRAF Publications – Chennai (Jul 2020).

IPRs/Patents	<ol style="list-style-type: none"> 1. ‘Micro Windmill Unit’, Design Patent no: 402482-00, Date of issue: 19/04/2024, Inventors: Sanjivani College of Engineering, Sachin S Raj, G.Vijayakumar, J.Eswari. 2. ‘Phase change material-enhanced energy efficient water heaters for industrial applications’, Utility Patent no: 202341060646, Date of publication: 06/10/2023. Inventors: M Babu, Sachin S Raj, Paulmar Pushparaj, R Jeremiah, M S Jagatheeshwaran, R Ramadoss. 3. ‘Agriculture fertilizer spreader machine’, Design Patent no: 379554-001, Date of issue: 17/05/2023. Inventors: Sachin S Raj, P Arulmozhi, A Jayaganthan, M sudhagar. 4. ‘An artificial intelligence based helmet for accident detection and notification’, Utility Patent Reg. no. 202221065842, Date of Publication: 25.11.2022. Inventors: Sachin S Raj, S Muthuraj, S Saravanan, M Babu, 5. ‘Remote monitoring of semi-automatic pepper threshing machine using industrial internet of things’, Utility Patent Reg. no. 202141033840, Date of Publication: 28/07/2021. Inventors: M Babu, Sachin S Raj, T K Kannan, B Sanjay Gandhi, N Balakrishnan, C Thiruvassagam. 6. ‘Handy Sanitizer Dispenser’, Utility Patent Reg. no. 202041028733, Date of Publication: 10.07.2019. Inventors: V Dhinakaran, M Ramarao, M Babu, P Devvabalan, R Suresh, P Senthilkumar, N Kirubakaran, S DaisonStallon, A Senthilkumar, S Muthukumaran, P Naveenkumar, D Mala, Sachin S Raj, N Nagarajan, R D H Devi.
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Professional Memberships:	<ul style="list-style-type: none"> ○ Member of International Association of Engineers (IAENG) – 180264. ○ Senior Member of Indian Society of Mechanical Engineers (ISME) – SMISME20171215GCT8726. ○ Life member in Society of Innovative Educationalist and Scientific Research Professionals (SIESRP) – LM171899227.
Interaction with professional institutions	<ol style="list-style-type: none"> 1. NPTEL – Engineering Graphics-Isometric Projections, Jan-Apr 2023, 84% - <i>Elite with Silver Medal and Topper Certification</i>. 2. NPTEL - Engineering Graphics-Orthographic Projections, Jan-Apr 2023, 65% - Elite Certification. 3. Training program on National Intellectual Property Awareness

	<p>Mission, 04.11.2022, Ministry of Commerce and Industry, Government of India.</p> <ol style="list-style-type: none"> 4. Online course on Designing Course Outcomes, 04.11.2022, Inpods Ed-Tech. 5. Workshop on Robotics and Medical automation, 18.06.2021, Bharath Institute, Chennai. 6. Webinar on Digital twin-driven smart manufacturing, 17.06.2021, Sri Venkateshwara College of Engineering, Chennai. 7. Three Day National level Workshop on Research Methodology, 02.06.2021 to 04.06.2021, Annai Veilankanni College of Engineering, Kanyakumari. 8. Webinar on Machinability of Composites, 31.05.2021, Arasu Engineering College, Kumbakonam. 9. Webinar on Research scope in boiling heat transfer, 03.06.2020, Bannari Amman Institute of Technology, Sathyamangalam. 10. Webinar on Teaching to Transform – A comparative teaching and learning methodology, 18.07.2020, Easwari College of Engineering, Chennai. 11. Webinar on Nanofluids in solar energy utilization, 11.07.2020, Francis Xavier College, Tirunelveli. 12. Webinar on Fabrication of fiber reinforced composite materials, 30.05.2020, Jayamukhi Institute of technological sciences, Warangal. 13. Webinar on Revolutionize optimize operations in India Manufacturing industries, 28.07.2020, Kalasalingam University, Virudhunagar. 14. Webinar on Plastic Challenges: Processing and Recycling, Vigan Institute, Hyderabad. 15. Webinar on Bio-Materials for Hip implants, 15.06.2020, V.R.S college of E&T, Arasur. 16. One week Workshop on Advances in Manufacturing Processes, 13.07.2020 to 17.07.2020, Bharat Institute of Engineering and Technology, Hyderabad. 17. Two day national Seminar on Functional composite materials – Processing & Characterization, 16.09.2019 and 17.09.2019, Velammal
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	<p>Engineering College, Chennai.</p> <p>18. National level Seminar on How to write effective research papers for conferences and journals & project proposals for funding agencies, 29.09.2018, Excel Engineering College, Salem.</p> <p>19. One day Seminar on Nano composite materials and its applications in manufacturing, 01.02.2018, Sona College of Technology, Salem.</p> <p>20. Two days Workshop on Micro machining and its optimization, 04.01.2018 and 05.01.2018, Sona College of Technology, Salem.</p> <p>21. Two day National level Workshop on CNC Turning And Milling, 23.08.2017 and 24.08.2017, SAEINDIA, Kongunadu College of Engineering, Trichy.</p> <p>22. One day Seminar on Nano technology for industrial applications conducted by Institute of Engineers Salem, 02.08.2018, Narasu's Sarathy Institute of Technology, Salem.</p> <p>23. Two day National level Workshop on Industrial Automation using – PLC, 02.03.2017 & 03.03.2017 Nandha College of Technology, Erode.</p> <p>24. Workshop on Steering Systems, organized by Ford, 10.09.2016, GCT, Coimbatore.</p>		
Consultancy Activities			
Duration	Title of Activity	Issued Organization	Amount
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Grants fetched			
Duration	Title	Issued Organization	Amount
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Awards			
<ul style="list-style-type: none">○ India Prime 100 Researchers Award presented by Fox Clues and press released by The Hindustan Times & Daily Hunt – 09/08/2021.○ Young Faculty Excellence Award presented by Global Multidisciplinary Research and Academic Foundation, Chennai – 26/12/2020.○ Young Researcher Award presented by ESN publications Chennai 28/09/2019.			



FDPs and STTPs ATTENDED

1. **5 days** online FDP on Inculcating Universal Human Values in Technical Education, 19.12.2022 – 23.12.2022, AICTE, New-Delhi
2. **5 days** online **FDP** on Training of Trainers for Teacher Educators, TLC-8, 05.12.2022 - 09.12.2022, National Institute of Technical Teachers' Training and Research (NITTTR), Bhopal.
3. **5 days** online FDP on IoT and Machine Learning Applications to Engineering Systems, 21.11.2022 – 25.11.2022, Vellore Institute of Technology (VIT), Chennai.
4. **7 days** online Faculty Development Program on Manufacturing and Characterization of Advanced Materials, 14.03.2022 – 21.03.2022, NIT Warangal & Kongu Engineering College, Erode.
5. **6 days** online Faculty Development Program on Advances in Strength of Materials and Manufacturing Engineering, 06.12.2021 to 11.12.2021, Academy of Maritime Education and Training, Chennai.
6. **5 days** online Faculty Development Program on Additive Manufacturing Processes and its Applications, 23.08.2021 to 28.08.2021, Sri Manakula Vinayagar Engineering College, Puducherry.
7. **14 days** online FDP on Advances in Composite Materials, Manufacturing Processes and Optimization Techniques, 01.06.2021 to 14.06.2021, Academy of Maritime Education and Training, Chennai.
8. **6 days** FDP on Additive Manufacturing, 24.05.2021 to 29.05.2021, Dr. N.G.P Institute of Technology, Coimbatore, Sponsored by Centre for Faculty Development, Anna University, Chennai.
9. **5 days** online Faculty Development Program on Sensors Technology, 05.10.2020 to 09.10.2020, Gnanamani College of Technology, Sponsored by AICTE-ATAL.
10. **5 days** online Faculty Development Program on Recent trends in Mechanical Engineering, 22.06.2020 to 26.06.2020, Narsimha Reddy Engineering College, Telangana.

11. **7 days** online Faculty Development Program on Advanced Engineering Materials for strategic & Societal sectors, 10.06.2020 to 15.06.2020, Vel Tech High Tech College, Chennai.
12. **15 days** Faculty Development Program on Recent trends in driverless electric vehicle technologies, 24.11.2019 to 07.12.2019, sponsored by AICTE, held at IRTT Erode.
13. **7 days** FDP on Power Plant Engineering, 04.06.2018 to 10.06.2018, sponsored by Centre for Faculty Development, Anna University, Chennai and held at Gnanamani College of Technology, Namakkal.

EVENTS ORGANIZED

1. Sanjivani I connect programme - Industry 4.0 and 5.0, Conducted with Keijon tools, South Korea, 12.03.2025.
2. Sanjivani I connect programme - ML Gen-AI and Agentic Framework, Conducted with Quartic.ai, Bangalore, 14.03.2025.
3. Sanjivani I connect programme - Financial Literacy, Conducted with Security Exchange Board of India (SEBI), 17.03.2025
4. Sanjivani I connect programme - The Digital twin: Bridgining the Physical and Digital worlds in Engineering, Mrs. Fabeena Roselin, Innovation Lead, Virgin Atlantic, London, UK, 18.07.2025.

INVITED LECTURES IN CONFERENCE/SEMINAR	
Nil	

OTHER Professional URLs	
Personal Website	-
Linked In Profile	https://www.linkedin.com/in/dr-sachin-s-raj-527326275/?originalSubdomain=in
GitHub URL	-
YouTube Channel	https://www.youtube.com/@Dr.Sachin_Mech
Other	Researchgate - https://www.researchgate.net/profile/Sachin-Raj-4

Any Other: