Dr. MADHU B M

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Education

	Degree	Year	Institute	Specialization
1	Ph.D.	2022	Siddaganga Institute of Technology, Tumakuru	Faculty of Electrical and Electronics Engineering
2	M.Tech	2010	Sri Jayachamarajendra College of Engineering(VTU-RC), Mysore	VLSI Design and Embedded Systems
3	B.E.	2006	National Institute of Engineering, Mysore	Electrical and Electronics Engineering

Professional Experience

	Date (from-to)	Designation	Organization
1	2006-2007	Lecturer Placement officer	GSSSIETW, Mysore
2	2009-2010	Software Intern	Unisys Global Services India Pvt. Ltd. Bangalore
3	23-10-2010 – till date	Assistant Professor	Siddaganga Institute of Technology, Tumakuru

Positions held

- Ex-COM member, IEEE Sensors Council Bangalore
- In-charge Analog Electronics Laboratory
- In-charge ARM Microcontroller Electronics Laboratory
- Publication Chair- ICSSES 2025

Affiliations of Professional organizations

- IEEE, Senior Member
- Ex-COM member, IEEE Sensors Council Bangalore
- IEEE Young Professionals, Member
- IEEE Power & Energy Society Membership, Member

Awards and Honors

- BEST PAPER, ICRDME 2022
- BEST PAPER, ICPPC 2019, Mahatma Gandhi University, Kottayam

Courses Taught

Undergraduate Courses

- Network Analysis - [CES-3]
- Basic Embedded Systems design - [OE31]
- Integrated Circuits and Applications - [CES-7]
- Embedded System - [EEPE24]
- Basic Electrical Engg. - [NBEL]
- Introduction to Embedded Systems [ETC04]
- ARM Microcontroller s
- Object Oriented Programming using C++ [OE01]
- Electric circuit Analysis
- Transformers and induction machines - [EE45]
- Foundations of Electrical Engg. - [1FEL]
- Analog Electronic Circuits - [3EE03]
- Electromagnetic compatibility
- Introduction to Electrical Engineering [ESC02]

Postgraduate Courses

- Power Electronics System Design using ICs - [2EPE03]
- Electromagnetic Compatibility – [2REPEE01]

Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Suma P (1SI24PEE02)	Development of Carbon Nanocomposites with Improved Thermal and Electrical Properties	On going

Research Areas

- Embedded Systems
- Carbon Nanocomposites
- Wearable Electronics

Research Guidance

Sl. No	Name of the Scholar	Title	Year of completion/ carrying out
1	Mrs.Suma P	Development Of Carbon Nanocomposites With Improved Thermal And Electrical Properties.	2025-26

Sponsored Projects

Ongoing Projects:

1. Title: “Development of High temperature low sag transmission line conductor with polymer composite core”
   Funding Agency: CPRI-Bangalore
   Amount: 55 Lakhs
   Duration: 2 Years
   Role: Co-PI

Publications

Journal Articles:

[1] B. M. Madhu, Rashmi, and P. Suma, “Investigating Percolative AC Conductivity in Hybrid Carbon-Epoxy Composites through Electrical and Optical Techniques,” **IEEE Transactions on Dielectrics and Electrical Insulation**, 2026, doi: **https://doi.org/10.1109/TDEI.2026.3664778**, **(Q1)**.

[2] B. M. Madhu and Rashmi, “Thermal Aging Analysis and Predictive Modeling of Epoxy Nanocomposites Characteristics,” **Journal of Vinyl and Additive Technology**, 2026, doi: **https://doi.org/10.1002/vnl.70019**, **(Q2)**.

[3] B. M. Madhu and Rashmi, “Performance Enhancement of Epoxy Glass Fiber Cores of HTLS Conductors Using Carbon Nanofillers/ATH Additives,” *Macromolecular Symposia*, 2026, doi: https://doi.org/10.1002/masy.70318, **(Q3)**.

[4] B. M. Madhu and Rashmi, “Development of PLA-ZnO Nanocomposites for Food Packaging Applications,” *Macromolecular Symposia*, 2026, doi: https://doi.org/10.1002/masy.70300, **(Q3)**.

[5] B. M. Madhu and Rashmi, “Optimized BIST Architecture for Logic Circuit Testing Using Low-Power and Area-Efficient mod-GDI Technique,” *IETE Journal of Research*, 2025, doi: https://doi.org/10.1080/03772063.2025.2596932, **(Q3)**.

[6] B. M. Madhu and Rashmi, “Electrical and Thermal Properties of Boron Nitride Filled Poly Aryl Ether Ketone Composites for Electrical Insulation Applications,” **Polymers for Advanced Technologies**, 2025, doi: **https://doi.org/10.1002/pat.70389**, **(Q2)**.

[7] B. M. Madhu and Rashmi, “Low Frequency Dielectric Analysis for Understanding Water Absorption Characteristics of Epoxy Nanocomposites,” **Polymer Composites**, 2025, doi: **https://doi.org/10.1002/pc.29863**, **(Q2)**.

[8] B. M. Madhu and Rashmi, “Impact of Organically Modified Montmorillonite Clay Nanofiller on Free Volume and Electrical Properties of the Composites,” *Materials Research Innovations*, 2025, doi: https://doi.org/10.1080/14328917.2024.2396218, **(Q3)**.

[9] B. M. Madhu and Rashmi, “Enhancement of Electrical Conductivity and Band Gap of Epoxy/MWCNT/GNP/Glass Fibers Hybrid Materials,” **Journal of Adhesion Science and Technology**, 2025, doi: **https://doi.org/10.1080/01694243.2024.2390145**, **(Q2)**.

[10] B. M. Madhu and Rashmi, “Development and Characterization of Ethylene-Vinyl Acetate-Graphene Nanocomposites,” *Macromolecular Symposia*, 2024, doi: https://doi.org/10.1002/masy.202400076, **(Q3)**.

[11] B. M. Madhu and Rashmi, “Assessment of Water Diffusion in Epoxy Composites: A Novel Approach Towards Holistic Understanding,” **Advanced Composite Materials**, 2024, doi: **https://doi.org/10.1080/09243046.2024.2432061**, **(Q2)**.

[12] B. M. Madhu and Rashmi, "An Insight into the Effect of Carbon Nanofillers in Glass Fiber Epoxy Nanocomposites Through Dielectric Spectroscopy," **Fullerenes, Nanotubes and Carbon Nanostructures**, 2023, doi: **https://doi.org/10.1080/1536383X.2023.2282093**, **(Q2)**.

[13] B. M. Madhu and Rashmi, "Effect of Thermal Ageing on Electrical and Mechanical Properties of Glass Fiber Reinforced Polymer and Its Impact on Service Life," *International Journal of Polymer Analysis and Characterization*, 2023, doi: https://doi.org/10.1080/1023666X.2023.2240099, **(Q3)**.

[14] B. M. Madhu and Rashmi, "Impact of Water Diffusion on Electrical Properties of Epoxy Nanocomposites," **Journal of Adhesion Science and Technology**, 2023, doi: **https://doi.org/10.1080/01694243.2023.2282818**, **(Q2)**.

[15] B. M. Madhu and Rashmi, "The Effect of MWCNT and GNP on the Flame Retardant Properties of Glass Fiber Reinforced Composites," *Journal of Mines, Metals and Fuels*, 2022, doi: https://doi.org/10.18311/jmmf/2022/32010, **(Q4)**.

[16] B. M. Madhu and Rashmi, "Effect of Hybrid Carbon Nanofillers at Percolation on Electrical and Mechanical Properties of Glass Fiber Reinforced Epoxy," **Journal of Applied Polymer Science**, 2022, doi: **https://doi.org/10.1002/app.52439**, **(Q1)**.

[17] B. M. Madhu and Rashmi, "Comparative Study on the Effect of Aluminium Trihydrate and Carbon Nanofillers on Thermal Properties of Glass Fiber Reinforced Epoxy Composites," *Journal of Mines, Metals and Fuels*, 2022, doi: https://doi.org/10.18311/JMMF/2022/32011, **(Q4)**.

[18] B. M. Madhu and Rashmi, "Combined Effect of Multiwalled Carbon Nanotubes, Graphene Nanoplatelets, and Aluminum Trihydrate on the Thermal Stability of Epoxy Composites," **Polymer Composites**, 2021, doi: **https://doi.org/10.1002/pc.26452**, **(Q2)**.

[19] B. M. Madhu and Rashmi, "Analysis of Epoxy Nanocomposites Characteristics by Impedance Spectroscopy," *Macromolecular Symposia*, 2021, doi: https://doi.org/10.1002/masy.201900168, **(Q3)**.

[20] B. M. Madhu and Rashmi, "Effect of Hybrid Fillers on GFRP Epoxy Composites with Water Immersion and Thermal Conditioning," *Macromolecular Symposia*, 2021, doi: https://doi.org/10.1002/masy.202000090, **(Q3)**.

[21] B. M. Madhu and Rashmi, "Water Aging Effects on Graphene Nanoplatelets and Multi-Walled Carbon Nanotube Reinforced Epoxy Glass Fiber Nanocomposites," *Indian Journal of Advances in Chemical Science*, 2020, **(Q4)**.

[22] B. M. Madhu and Rashmi, "Effects of Multiwalled Carbon Nanotubes and Graphene Nanoplatelets Filled Hybrid Epoxy Nanocomposites on Electrical and Mechanical Properties," *Power Research – A Journal of CPRI*, 2019, doi: https://doi.org/10.33686/PWJ.V14I2.144710, **(Q4)**.

[23] B. M. Madhu and Rashmi, "Hydrothermal Aging of Glass Fiber Epoxy-Carbon Nanocomposites and Its Service Life Predictions Based on Tensile Strength," **Journal of Vinyl and Additive Technology**, doi: **https://doi.org/10.1002/vnl.22084**, **(Q2)**.

Conference Proceedings

[1] B. M. Madhu and Rashmi, "Vision Assistance System for Visually Impaired," in *Proc. IEEE Int. Conf. Smart Systems for Applications in Electrical Sciences (ICSSES)*, 2025, doi: https://doi.org/10.1109/ICSSES64899.2025.11009576.

[2] B. M. Madhu and Rashmi, “Impact of TiO_2 Nanofiller on Electrical and Mechanical Properties of Epoxy Nanocomposites,” in *Proc. IEEE Int. Conf. Smart Systems for Applications in Electrical Sciences (ICSSES)*, 2024, doi: https://doi.org/10.1109/ICSSES62373.2024.10561439.

[3] B. M. Madhu and Rashmi, “Simulation Study of Effects of Alumina Nanoparticle Interactions in Polymer Matrix,” in *Proc. IEEE Int. Conf. Smart Systems for Applications in Electrical Sciences (ICSSES)*, 2024, doi: https://doi.org/10.1109/ICSSES62373.2024.10561280.

[4] B. M. Madhu and Rashmi, “Design and Implementation of Cruise Control for Bikes Using Raspberry Pi,” in *Proc. IEEE Int. Conf. Smart Systems for Applications in Electrical Sciences (ICSSES)*, 2023, doi: https://doi.org/10.1109/ICSSES58299.2023.10199325.

[5] B. M. Madhu *et al.*, “Design of Actuation Control Unit with Ultra Capacitors as the Embedded Energy Backup for Electro-Mechanical Applications,” in *Proc. Int. Conf. Energy, Communication, Data Analytics and Soft Computing (ICECDS)*, 2017, doi: https://doi.org/10.1109/ICECDS.2017.8390127.

[6] B. M. Madhu *et al.*, “IoT Based Automatic Attendance Management System,” in *Proc. Int. Conf. Current Trends in Computer, Electrical, Electronics and Communication (CTCEEC)*, 2017, doi: https://doi.org/10.1109/CTCEEC.2017.8455099.

[7] B. M. Madhu *et al.*, “Design of Actuation Control Unit with EDLC Capacitors as the Embedded Energy Backup for Mechatronic Applications,” in *Proc. Int. Conf. Intelligent Computing and Control Systems (ICICCS)*, 2017, doi: https://doi.org/10.1109/ICCONS.2017.8250710.

[8] B. M. Madhu *et al.*, “Wireless Interface of Servo Motors Using Potentiometers via Bluetooth Module and RF,” in *Proc. Int. Conf. Applied and Theoretical Computing and Communication Technology (iCATccT)*, 2016, doi: https://doi.org/10.1109/ICATCCT.2016.7911993.

[9] B. M. Madhu *et al.*, “Implementation of Improved Robust Energy Efficient Routing Protocol,” in *Proc. Int. Conf. Contemporary Computing and Informatics (IC3I)*, 2014, doi: https://doi.org/10.1109/IC3I.2014.7019609

Book Chapters

- B. M. Madhu, Rashmi, R. R. N. Sailaja, and J. Sundara Rajan, "Electric Circuit Modeling of Impedance Spectroscopic Characteristics of GFRP Nanocomposites with Hybrid Carbon Nanofillers," in Foundation and Growth of Macromolecular Science: Advances in Research for Sustainable Development, Apple Academic Press, 2024, pp. 291–306. doi: 10.1201/9781003370505-14.

Reviewer of Journals

- B. M. Madhu, Reviewer, Advanced Engineering Materials, Wiley, 2025–present, 4 reviews.
- B. M. Madhu, Reviewer, IEEE Internet of Things Journal, Institute of Electrical and Electronics Engineers, 2025–present, 2 reviews.

- B. M. Madhu, Reviewer, IEEE Transactions on Electromagnetic Compatibility, Institute of Electrical and Electronics Engineers, 2025–present, 2 reviews.
- B. M. Madhu, Reviewer, Journal of Inorganic and Organometallic Polymers and Materials, Springer, 2025–present, 2 reviews.
- B. M. Madhu, Reviewer, Journal of Polymer Research, Springer, 2025–present, 1 review.
- B. M. Madhu, Reviewer, Journal of Reinforced Plastics and Composites, SAGE Publications, 2025–present, 3 reviews.
- B. M. Madhu, Reviewer, Polymer Composites, Wiley, 2025–present, 4 reviews.
- B. M. Madhu, Reviewer, Radiation Physics and Chemistry, Elsevier, 2025–present, 4 reviews.
- B. M. Madhu, Reviewer, Radiation Physics and Chemistry, Elsevier, 2025–present, 4 reviews.
- B. M. Madhu, Reviewer, Journal of Nanoparticle Research, Springer Nature 1 reviews.
- B. M. Madhu, Reviewer, Chemical Papers, Springer Nature 1 reviews.
- B. M. Madhu, Reviewer, Discover Polymers, Springer Nature 1 reviews.