

RESEARCH BIODATA

Dr. Mathew Joseph (KTU-F114)

Dr. Mathew Joseph completed his B.Tech in Mechanical Engineering (SJCET Palai, 2006) and M.Tech in Thermal and Fluids Engineering (IIT Bombay, 2011). He obtained his Ph.D in Materials Science and Engineering (NIT Calicut, 2020) for the work “*Enhanced Phase Change Materials based Cooling Systems for Thermal Management of Electronics*”. He has more than 12 years of teaching experience in both B.Tech and M.Tech. His research interests are in the areas of heat transfer and thermodynamics, nanomaterials/nanofluids development and synthesis for thermal management applications, 2D-material synthesis and characterisation, nanoencapsulation, non-intrusive measurements using laser interferometry, design of cost-effective hybrid thermal management systems for various applications, solar PV cooling, Li-ion battery cooling, and electronics cooling. He has good knowledge with nanoparticle characterisation techniques, including SEM, TEM, spectroscopic techniques (Raman and Infrared spectroscopy). Also, he has hands-on experience in the synthesis of 2-D materials like Graphene, MoS₂, WS₂ etc., synthesis of core-shell particles using polymerisation technique, analysis using Dynamic Light Scattering (DLS) system, thermal analysis using laser interferometry, thermal property measurements using KD2-Pro, viscometer, DSC, TGA, data acquisition systems, image processing and data analysis software. He is a reviewer for International Journals: Applied Thermal Engineering (Elsevier, 33+ articles reviewed), International Journal of Green Energy (Taylor & Francis, 2 articles reviewed), Materials Today: Proceedings (Elsevier) and various national and international conferences. He has published 8 SCI indexed Q1 and Q2 category journals since 2019. He is presently Associate Professor and Head of Mechanical Engineering Department at Rajagiri School of Engineering and Technology (Autonomous), Kochi, Kerala, India. He is also a PhD research guide, and academic auditor for A P J Abdul Kalam Technological University, Kerala.

List of Journal Publications

1. **Mathew Joseph** and V Sajith, Graphene enhanced paraffin nanocomposite based hybrid cooling system for thermal management of electronics, *Applied Thermal Engineering*, 163 (2020), 114342. **(Impact Factor: 6.4)**
2. **Mathew Joseph** and V Sajith, An investigation on heat transfer performance of polystyrene encapsulated n-octadecane based nanofluid in square channel, *Applied Thermal Engineering*, 147 (2019) 756-769. **(Impact Factor: 6.4)**
3. **Mathew Joseph**, Vibin Antony and Sajith V, Characterisation of heat dissipation from phase change material based heat sink using Mach-Zehnder Interferometry, *Heat and Mass Transfer*, 58, 171–193 (2022). **(Impact Factor: 2.2)**
4. **Mathew Joseph**, E. V Jitheesh and V. Sajith, Experimental investigation on the cooling performance of polystyrene encapsulated n-Docosane based nanofluid in minichannel heat sink *Heat and Mass Transfer*, 57, 1717–1735 (2021). **(Impact Factor: 2.2)**
5. V. Muthya Goud, V Vaisakh, **Mathew Joseph** and V Sajith, An experimental investigation on the evaporation of polystyrene encapsulated phase change composite material based nanofluids, *Applied Thermal Engineering*, 168 (2020) 114862. **(Impact Factor: 6.4)**
6. E. V Jitheesh, **Mathew Joseph**, and V. Sajith, Comparison of Metal oxide and Phase change material based nanofluids as coolants in mini channel, *Int. Comm. Heat and Mass Transfer*, 127 (2021) 105541. **(Impact Factor: 7)**
7. **Mathew Joseph**, Anjuman Habeeb, Victor Jose, Thermal Performance of Buildings: Case Study and Experimental Validation of Educational Building, *Int. J. Adv. Res. in Electrical, Electronics and Instru. Eng.*, 4 (2015), 4968-4974.
8. Vipin Antony, **Mathew Joseph**, V. Sajith, Heat transfer enhancement using CNT coated needle electrodes in corona wind discharge system, *European Physical Journal Plus*, 137(2022), 524 **(Impact factor: 3.4)**
9. Shijina S., Antony Joseph, **Mathew Joseph**, Sajith V., Heat Transfer Phenomena of Copper-Graphene Nanocomposite Coated Aluminium Heat Spreaders: An Interferometric Study, *Applied Thermal Engineering*, 212 (2022) 118545. **(Impact Factor: 6.4)**

International Conference

1. **Mathew Joseph**, Muhammad Jaseem M C and Sajith V, Thermal management of Electronics using CNT loaded Phase change material based heat sinks, *16th UK Heat Transfer Conference (UKHTC2019) 8-10 September 2019, Nottingham*.
2. Manu Pradeep, Thankachan T.P and **Mathew Joseph**, Investigations on Chitin and Coconut Fiber Reinforcements on Mechanical and Moisture Absorption Properties of Corn Starch Bioplastics, *Materials Today: Proceedings*, Volume 58, Part 1, 2022, Pages 65-70.
3. Jithin K. Francis, Thankachan T. Pullan, **Mathew Joseph**, Mervin Joe Thomas, Kurian Joseph, Investigations on mechanical properties of wood composite for sustainable manufacturing, Volume 72, Part 6, 2023, Pages 3111-3115.

Book Chapter: Title of new book: Ali - Thermal Management for Batteries: From Basic Design to Advanced Simulation and Management Methods, Lead author: Hafiz Muhammad Ali, Publisher: Elsevier Expected publication date: March 2024 (all reviews completed).

Patent filed: Patent application no. 202341056021 A: Combustion Chamber for Turbocharger derived Turbojet Propulsion, published on 01/09/2023.

Research Profiles

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<https://scholar.google.co.in/citations?user=vi-AC-8AAAAJ&hl=en>

<https://publons.com/researcher/AAW-4244-2021/>

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