



Dr. Alos James

Associate Professor, Department of Mechanical Engineering

Administrative Responsibilities

- Academic Council Secretary
- Curriculum Development Committee Core Team Member
- IQAC Cell Member
- Research Publication Cell Chair
- R&D Cell Member
- Gate coaching committee Member
- Space Club Member
- 2026-30 Batch faculty advisor

Education Summary

- Ph.D. in Thermal Science (Renewable Energy), NIT Calicut, 2024.
- M.Tech in Energy Systems Analysis and Design, University of Calicut, 2014
- B. E. in Mechanical Engineering, Anna University, 2011

Employment History

- 2025 August, as Associate Professor in the Dept. of Mechanical Engineering, Christ College of Engineering (Autonomous)
- 2024 July to 2025 August, as Assistant Professor in Dept. of Mechanical Engineering, Christ College of Engineering (Autonomous)
- 2018 December to 2024 June, JRF/SRF/Teaching Assistant in NIT Calicut.
- 2017 December to 2018 December, as Senior Research Fellow in DST Funded research project under the guidance of Dr. S. Jayaraj, Professor (HAG) (Retd.) in the Department of Mechanical Engineering of National Institute of Technology (NIT) Calicut.
- 2014 August to 2017 November, as Assistant Professor in Department of Mechanical Engineering in KMCT College of Engineering, Kozhikode.

Journal Publications

- Kumar PA, **James A**, Prashanth G, Srinivas M. Performance investigation of hybrid solar photovoltaic/thermal collector with dual-cooled thermoelectric generator. *Applied Thermal Engineering*. 2026 Apr 30;131177, SCI, Q1
<https://www.sciencedirect.com/science/article/abs/pii/S1359431126014857>
- Aiswarya V, Das S, **James A**, Saha SK, Saha BB. An experimental investigation on the solar thermal energy storage potential of form stabilized paraffin microcapsules. *Journal of Environmental Chemical Engineering*. 2025 Jun 1;13(3):116825, SCI, Q1
<https://www.sciencedirect.com/science/article/abs/pii/S2213343725015210>
- Kumar PA, **James A**, Srinivas M. Performance investigation of a novel multi-tray solar cabinet dryer with multi-point air supply. *Thermal Science and Engineering Progress*. 2025 May 1;61:103515, SCI, Q1
<https://www.sciencedirect.com/science/article/abs/pii/S2451904925003051>
- **James A**, Sahoo SR, Raj AK, Mohanraj M, Srinivas M, Jayaraj S. Numerical performance investigation of a photovoltaic-thermal hybrid collector-evaporator with different tube configurations for heat pumps. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*. 2025 Apr;239(2):588-600.
<https://journals.sagepub.com/doi/abs/10.1177/09544089231173529>
- **James A**, Raj AK, Srinivas M, Mohanraj M, Jayaraj S. Experimental investigations on a solar heat pump system having hybrid collector with dual cooling arrangements for delaying frost generation. *Thermal Science and Engineering Progress*. 2023 Mar 1;39:101720. SCI, Q1, IF:5.1.
<https://www.sciencedirect.com/science/article/pii/S2451904923000732>
- **James A**, Jayaraj S, Srinivas M, Mohanraj M. Energy-Efficient Operation of PV-T Solar Collectors with Heat Pump based Water Heaters Suitable for Domestic Applications. *International Journal of Mathematics and Physics*. 2021 Sep 8;12(1):12-8. (Scopus)
<https://ijmph.kaznu.kz/index.php/kaznu/article/view/338>
- **James A**, Srinivas M, Mohanraj M, Raj AK, Jayaraj S. Experimental studies on photovoltaic-thermal heat pump water heaters using variable frequency drive compressors. *Sustainable Energy Technologies and Assessments*. 2021 Jun 1;45:101152. SCI, Q1
<https://www.sciencedirect.com/science/article/pii/S2213138821001624>
- Thomas MJ, Lal V, Baby AK, Vp MR, **James A**, Raj AK. Can technological advancements help to alleviate COVID-19 pandemic? a review. *Journal of Biomedical Informatics*. 2021 May 1;117:103787. SCI, Q1, IF:4.0.
<https://www.sciencedirect.com/science/article/pii/S1532046421001167>
- **James A**, Mohanraj M, Srinivas M, Jayaraj S. Thermal analysis of heat pump systems using photovoltaic-thermal collectors: a review. *Journal of Thermal Analysis and Calorimetry*. 2021 Apr;144:1-39. SCI, Q1
<https://link.springer.com/article/10.1007/s10973-020-09431-2>

Conference Publications

- **A. James**, S. R. Sahoo, Arun K. R., M. Mohanraj, M. Srinivas, and S. Jayaraj, Numerical performance investigation of the various collector configurations for the hybrid PV-T heat pump based solar water heater, *International Conference on Thermal Analysis and Energy Systems*, Dec 2021, Kazakhstan (online)

- **A. James**, M. Srinivas, and S. Jayaraj, PV-T Collector Hybrid System with Dual Cooling Arrangements with an Additional Objective of Delaying the Frost Development, International Conference in Fluid, Thermal and Energy systems, Jun 2022, National Institute of Technology Calicut.
- S. Jayaraj, **A. James**, M. Srinivas and M. Mohanraj, Experiments on a PVT Based Hybrid Solar Collector Operated Heat Pump Suitable for Space Heating in Energy Efficient Buildings, ASHRAE 4th International Conference on Energy Efficient Building Design, Nov 2020. Beirut, Lebanon (online)
- S. Jayaraj, **A. James**, M. Mohanraj and M. Srinivas, Energy Efficient Operation Of PV-T Solar Collectors with Heat Pump-Based Water Heaters Suitable For Domestic Applications, International Conference-Seminar on Applied Mathematics and Mechanics, Dec 2020, Al-Farabi Kazakh National University, Kazakhstan (online)

Patents

- An Indian patent application was submitted on the invention titled “System and method of solar PV-T heat pump-based water heating with uniform PV cooling and enhanced hot water output,” Examination over and waiting for grant - Application No. – 202441036089, Dated: 07/05/2024
- An Indian patent application was submitted on the invention titled “A Real-Time Air Quality Index Monitoring and Purification System Using Organic Filter” – Application No.: 202641051482, Dated: 22/04/2026
- An Indian patent application was submitted on the invention titled “Cool Roof Mortar Tiles Using Phase Change Materials” – Application No.: 202641052246, Dated: 24/04/2026

Accomplishments/Funded Projects

- Completed a Department of Science and Technology (DST) CERI-funded project titled "Development, Testing and Standardization of Heat Pump Water Heaters using Photovoltaic Thermal Hybrid Evaporators" during 2017- 2019 worth 38.36 lakhs as Senior Research Fellow.

Achievements

- Best paper award in the "International Conference on Fluid Thermal and Energy Systems" conducted online during June 9-11, 2022, where the National Institute of Technology Calicut served as the host.
- Rashtrapathi Award for Scouts from Dr. A.P.J Abdul Kalam - The Former President of India, in the year 2005.
- Recognised and certified reviewer to the ‘Energy’ journal (SCI, Q1), ‘Applied Thermal Engineering’ journal (SCI, Q1), ‘Solar Energy Materials and Solar Cells’ (SCI, Q1), ‘Journal of Thermal Analysis and Calorimetry (SCI, Q1), and Scientific Reports (Scopus).