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Centre for Thermal Management
Professor/Department

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Research Areas

Thermal management- Membrane desalination-Energy Storage- Nano materials for Energy and environment

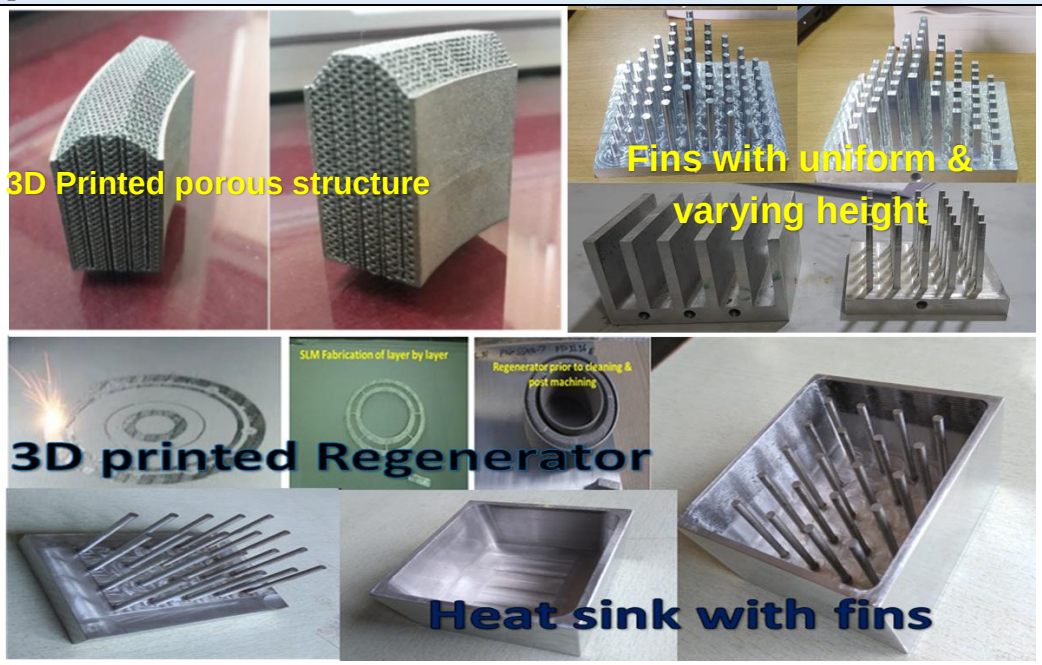
Projects & Publications Summary

Project		Publication Count		Citation Count			Impact Factor
Completed	00	SCI	020		Google	SCOPUS	42.483
Ongoing	01	SCOPUS	030	Citations	1546	1388	
Submitted	02	Books	000	h-index	20	19	
		Books chapters	000	i10index	25	25	

National/International Collaboration

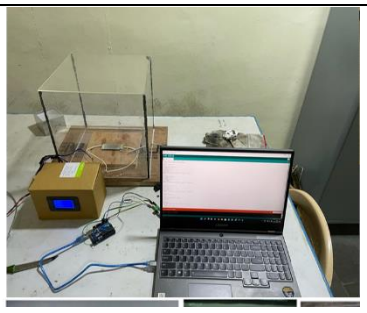
- West Virginia university, USA - EV thermal management
- The University of Tokyo, Japan – Thermal management of heat sink
- IIIT, Mandi – Nanomaterials for thermal systems
- TIFR, Mumbai – Cryogenic systems
- Anna University, Chennai - Membrane desalination

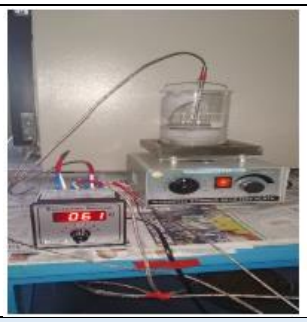
Research snippets



Research facilities

- Setup for heat transfer study on heat sink
- Facility to prepare Nano PCM





Outline of Research Works

- Thermal stability of Paraffin Wax -Ag/TiO2 , Paraffin Wax – graphene, Paraffin Wax – Al2O3 with the different containers
- Charging and discharging study on heat sink with different Nano PCM
- Heat transfer study on heat sink with and without different fins
- Porous structure using 3D printing for heat transfer study

Details of Funded Projects

S.No	Project Title	Funding agency	Amount (Rs.)	Duration	Collaboration
1.	Fabrication of Graphene coated Cu heat sink for electric vehicle battery thermal management	SERB-TARE	18,30,000/-	2022-24 (Ongoing)	IIT Mandi

Recent Best 5 SCI Publications

- ***Arulprakasajothi, M.***, *Srinivasan, K. V., Arolkar, V. A., & Jaison, K. A.* (2021). Experimental investigation of axial pressure drop analysis on the additively manufactured porous regenerator. *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 14644207211052172. IF: 2.311
- ***Arulprakasajothi, M.***, *Rupesh, P. L., Rana, H. K., & Elangovan, K.* (2021). Colour changing material for the estimation of flue gas radiation on the miniature gas turbine surface. *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 14644207211045520. IF: 2.311
- *Nagappan Beemkumar, Devarajan Yuvarajan,* ***Mahalingam Arulprakasajothi****, Kariappan Elangovan, Thirugnanasambandam Arunkumar,* (2020) Control of room temperature fluctuations in the building by incorporating PCM in the roof, *Journal of Thermal Analysis and Calorimetry*, doi: 10.1007/s10973-019-09226-0 IF: 2.471
- *Srinivasan, K. V., Manimaran, A.,* ***Arulprakasajothi, M.****, Pokale, R. D., & Arolkar, V. A.* (2019**)**. Theoretical analysis on pressure drop across porous cryocooler regenerator in evaluating the optimum regenerator porosity. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 1–16. doi:10.1080/15567036.2019.1649321 I F: 1.184
- ***Arulprakasajothi, M.***, *Elangovan, K., Chandrasekhar, U., & Suresh, S.* **(2018)**. Performance study of conical strip inserts in tube heat exchanger using water based titanium oxide nanofluid. *Thermal Science*, 22(1 Part B), 477–485. doi:10.2298/tsci151024250a. IF: 1.574

Books

Patents

- Patent “A Halbach Array Attachment”, Ref. no. 202021008344 (Submitted)
- Patent “Convex lens solar concentrator with parabolic tracking mechanism”, Ref. no. 202021042890 (submitted)
- Patent “A solid fluid heater system”, Ref. no. 202141052738 (submitted)

Fellowships/Awards/Recognitions

PhD Thesis Guidance (Only PhD)

Scholar Name	Thesis Title	University	Status	Year
1. K V Srinivasan	Development of Porous Regenerator for Stirling Cryocooler using Additive Manufacturing Technique	Vel Tech, Avadi	Completed	2020
2. Rupesh P L	Isotherm Identification on the Surface of Gas Turbine Engine Hot components Using Temperature Indicating Paint through Image Processing Algorithm.	Vel Tech, Avadi	Completed	2021
3. Attar Ajaj Rashid	Design and development of steam community cooking system, integrating reliable and low-cost solar system	Vel Tech, Avadi	Completed	2021
4. Sahadev M. Jadhav	Effect of magnetic field on Diffusion Absorption Refrigeration System Operated by Exhaust of Stationary Engines	Vel Tech, Avadi	ongoing	2022
5. Vikas Ugle	Design & Analysis of corrugated tube heat exchanger using Nano-fluids	Vel Tech, Avadi	ongoing	2022

Editorial/Review Activities

- Energies, MDPI. (SCI)
- Journal of Thermal Engineering, Yildiz Technical University. (SCOPUS)
- Nature Environment and Pollution Technology, Technoscience Publications. (SCOPUS)
- Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Taylor and francis. (SCI)
- International Journal of Ambient Energy, Taylor and francis. (SCI)