



Karunya INSTITUTE OF TECHNOLOGY AND SCIENCES

Declared as Deemed-to-be University under sec. 3 of UGC Act, 1956

Karunya Nagar, Coimbatore 641 114, Tamil Nadu, India.

DEPARTMENT OF MECHANICAL ENGINEERING

HEAT TRANSFER AND THERMAL ENGINEERING LAB

The objective of this laboratory is to provide the students a good environment to understand some very important concepts and applications of thermal Engineering in the field of IC engines, Refrigeration and air conditioning and Compressors. Performance and heat balance calculations for thermal equipments are taught in the lab. This laboratory is also actively involved in advanced research in enhanced heat transfer, solar energy, heat pipes and thermoelectric cooling of high heat flux electronic devices.

These fundamentals will be useful to students to link the phenomenological processes taking place in the engine for issues of: power generation, emissions and environmental impact, fuel economy and fuel composition effects on engine operation and mechanical limitations of obtaining ideal performance.

Facilities available for research, consultancy and testing

- Ultra Homogenizer
- Brooke field viscometer
- Thermal conductivity measuring instrument (KD2 pro)
- Digital pH meter
- Water bath

Equipments available for regular lab classes

- Computerized IC engine testing rig

- Single cylinder Diesel Engine (Bi-Fuel Engine)
- Variable Compression Petrol Engine
- Single cylinder Retardation diesel engine
- Computerized Vapour Compression Refrigeration Test Rig
- Air Condition test rig
- Air Compressor Test rig
- Heat Pump Test rig
- Air blower test rig
- Drop wise and Film wise condensation apparatus
- Critical heat flux apparatus
- Boiling heat transfer unit apparatus
- Unsteady heat transfer apparatus
- Boiler unit

PHOTO GALLERY



Forced convective heat transfer test rig



Air-conditioning test rig



Cooling of power transistor



Heat transfer using Nanofluids



Heat Pump Test rig

Lab in-charge(s).	Mr. B. Jefferson Raja Bose, M.E, (Ph.D) Assistant Professor (SG)
	Mr. S. Joseph John Marshal, M.E, (Ph.D) Assistant Professor (SG)