

## DEPARTMENT OF MECHANICAL ENGINEERING

### DETAILS OF THE HEAT TRANSFER LABORATORY

<b>Name of the Laboratory</b>	:	HEAT TRANSFER
<b>Name of the Lab In-charge</b>	:	Dr. R. Vinoth
<b>Name of the Lab-Technician In-charge</b>	:	Mr. Eswaraiah
<b>Area of the Lab</b>	:	143 Sq.mts
<b>Lab Occupancy</b>	:	18/BATCH
<b>Description of the Lab</b>	:	Heat transfer lab provides an opportunity to learn heat transfer phenomenon and heat transfer equipment.

#### LIST OF EXPERIMENTS

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1.	Thermal conductivity of metal rod
2.	Overall heat transfer co-efficient through Composite Slab Apparatus
3.	Thermal conductivity of insulating material through lagged pipe apparatus
4.	Heat transfer coefficient in natural convection
5.	Heat transfer coefficient in forced convection
6.	Heat transfer in drop and film wise condensation.
7.	Emissivity of a gray body through Emissivity apparatus.
8.	Experiment on Stefan Boltzmann Apparatus.
9.	Heat transfer in pin-fin
10.	Experiment on Parallel and counter flow heat exchanger.
11.	Determination of Critical heat flux using Critical Heat flux apparatus.
12.	Study of two-phase heat flow.
13.	Study of heat pipe and its demonstration.
14.	Determination of Thermal conductivity of insulating powder material through concentric sphere apparatus.
15.	Determination of Temperature distribution and heat transfer rate in Transient heat conduction mode using Transient heat conduction apparatus.

LIST OF EQUIPMENT		
S.NO	Name of the Major Equipment(Above Rs. 50,000)	Quantity
01	Thermal conductivity of metal rod	01
02	Thermal conductivity of Composite Slab Apparatus	01
03	Lagged pipe Apparatus	01
04	Natural convection Apparatus	01
05	Forced convection Apparatus	01
06	Drop and Film wise condensation Apparatus	01
07	Emissivity Apparatus	01
08	Stefan Boltzmann Apparatus	01
09	Pin-Fin Apparatus	01
10	Parallel flow and Counter flow Heat Exchanger Apparatus	01
11	Critical Heat flux apparatus	01
12	Heat pipes	01
13	Transient conduction apparatus	01
14	Concentric sphere apparatus	01
15	Two-phase flow apparatus	01



**NATURAL CONVECTION, FORCED CONVECTION, LAGGED PIPE APPARATUS**



**OVERVIEW OF HEAT TRANSFER LAB**



**EMISSIVITY APPARATUS**



**STEFAN BOLTZMANN APPARATUS, PARALLEL AND COUNTER FLOW HEAT EXCHANGER, COMPOSITE SLAB APPARATUS**