

**HEAT TRANSFER LAB**

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**OBJECTIVE:**

The objective is to allow students to experience the modes of heat transfer, including Conduction, Convection, and Radiation, and to calculate various parameters such as thermal conductivity, heat transfer coefficient, emissivity, heat transfer rate, and critical heat flux.



**Lab Equipment:**

<b>S.No</b>	<b>Descriptio n</b>	<b>Stock</b>	<b>Cost (Rs)</b>
1	Thermal conductivity of Metal rod	1	40,825
2	Heat transfer through a Concentric sphere	1	48,990
3	Composite slab apparatus	1	48,990
4	Heat transfer in Natural convection	1	44,448
5	Heat transfer in Forced convection	1	49,646
6	Heat Transfer in Pin-Fin	1	52,210
7	Heat Transfer through Lagged pipe	1	48,185
8	Emmissivity apparatus	1	43,068
9	Stefe-Boltzman's constant	1	40,940
10	Parallel and Counter flow Heat Exchanger	1	66,873
11	Heat transfer in Drop and Film wise condensation	1	65,320
12	Critical Heat flux apparatus	1	49,588
13	Heat pipe demonstration	1	96,014
14	Experimental set up on Transient Heat Conduction	1	60,808
<b>Total</b>			<b>7,55,905</b>

**List of Experiments:**

<b>S.NO.</b>	<b>NAME OF THE EXPERIMENT</b>
1	Determination of thermal conductivity of a composite wall
2	Determination of heat transfer through lagged pipe
3	Determination of thermal conductivity of a metal rod
4	Transient heat conduction
5	Determination of heat transfer coefficient in forced convection
6	Determination of heat transfer coefficient in natural convection
7	Determination of effectiveness of a parallel & counter flow heat exchanger
8	Determination of surface emissivity of a given surface
9	Determining of Stefan boltzmann's constant
10	Determining of heat transfer in drop wise & film wise condensation
11	Determining of critical heat flux apparatus
12	Determination of thermal conductivity of an insulating material using concentric sphere
13	Determination of efficiency and effectiveness of pin fin apparatus