



MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

Department of Mechanical Engineering

REPORT OF SKILL BASED MINI PROJECT

Heat and Mass Transfer (120513)

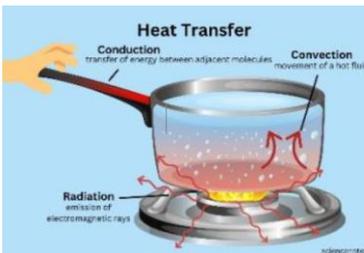
Title of Project: STUDY OF CONDUCTION, CONVECTION AND RADIATION WITH PRACTICAL EXAMPLES.

Introduction:

Conduction Is a mode of heat transfer which is because of Lattice Vibration. Example of Conduction is the process of heating a pan on a stove. The heat from the burner transfers directly to the surface of the pan.

Convection is the mode of heat transfer which is due of mixing of molecules. Example of Convection Boiling water – The heat passes from the burner into the pot, heating the water at the bottom. Then, this hot water rises and cooler water moves down to replace it, causing a circular motion.

Description of Model



Radiation is the mode of heat transfer which is because of Electromagnetic Waves. Sunlight ultraviolet light heat from a stove burner visible light from a candle, X-rays taken using an x-ray machine and The radioactive decay of uranium produces alpha particles are the examples.

Applications of Model

Application of conduction (Transfer of energy through medium in contact)

1. Heating of utensils while cooking.
2. Heating of metallic plate in electric iron

Application of Convection (Transfer of energy through medium but without any rigid contact)

1. Heating of liquid in a flask kept over a burner.
2. Formation of Sea – Breeze.

Application of radiation (Transfer of energy without any medium particle)

1. Heat from sun comes to us through radiation.
2. Radiation energy flow in nuclear power plant.

What I Learned Through Project: I learnt about the deep knowledge of Conduction, Convection and Radiation and saw practical Examples of the same by performing Experiments in Laboratories and solved derivations with the real life based Numericals.

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