Answer on Question #56352, Physics / Molecular Physics | Thermodynamics

The predominant mode of heat transfer in solids is

a.convection

b.conduction

c.radiation

d.diffusion

Solution:

Heat transfer through solids occurs by conduction. This is primarily due to the fact that solids have orderly arrangements of particles that are fixed in place.

Conduction in solids operates by part of the kinetic energy of one particle being passed to its immediate neighbour. In simple terms, the bonds between neighbouring atoms and molecules in a solid can be thought of as elastic links; as one particle vibrates it causes the next in the line to vibrate also. This process repeats, particle after particle allowing thermal energy to be passed from the hot face of a body to the cold face.

Answer: b.conduction