



MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

Department of Mechanical Engineering

REPORT OF SKILL BASED MINI PROJECT

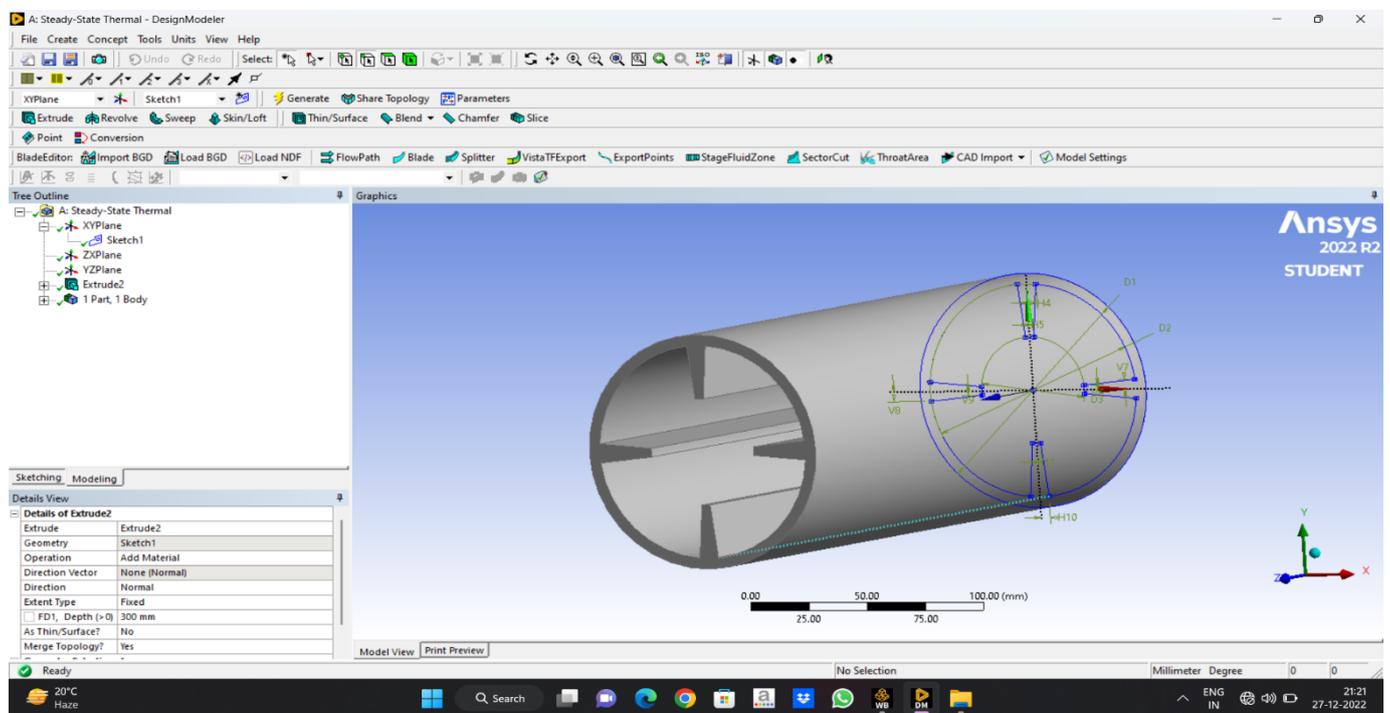
Heat and Mass Transfer (120513)

Title of Project: THERMAL ANALYSIS OF HEAT PIPE

Introduction:

In this project we did thermal analysis of heat pipe in ansys workbench and find temperature difference and total heat flux

Heat transfer pipe Model



Engineering data:

1. Material = copper alloy
2. Length of pipe = 300 mm
3. Poisson ratio = 0.34
4. Young's modulus = 110Gpa
5. Thermal expansion Coefficient = $1.8 \cdot 10^{-5}/C$
6. Thermal conductivity = 380W/moc
7. Film coefficient interior = 100W/(m²c)
8. Film coefficient exterior = 30W/(m²c)
9. Density = 8330 kg / m³
10. Specific heat = 385 j/oc/kg

Boundary condition :

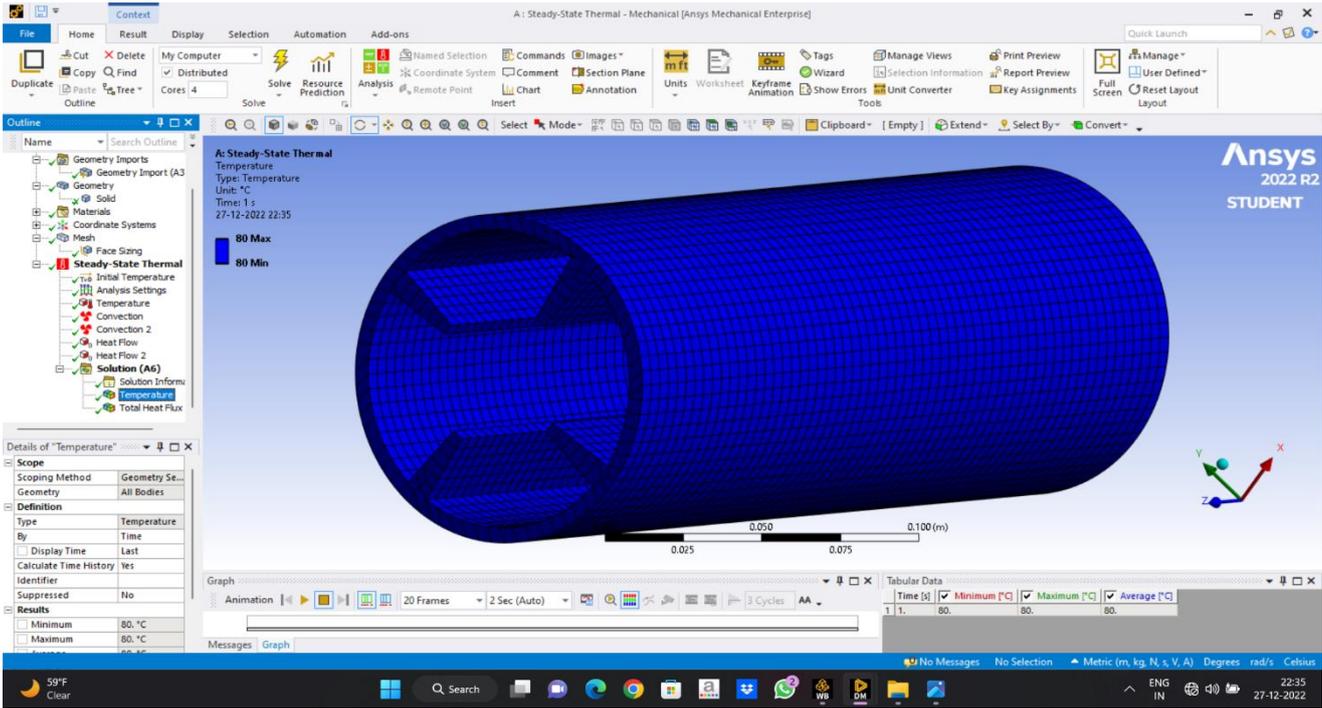
Both end insulated and fixed

Internal temperature = 80C

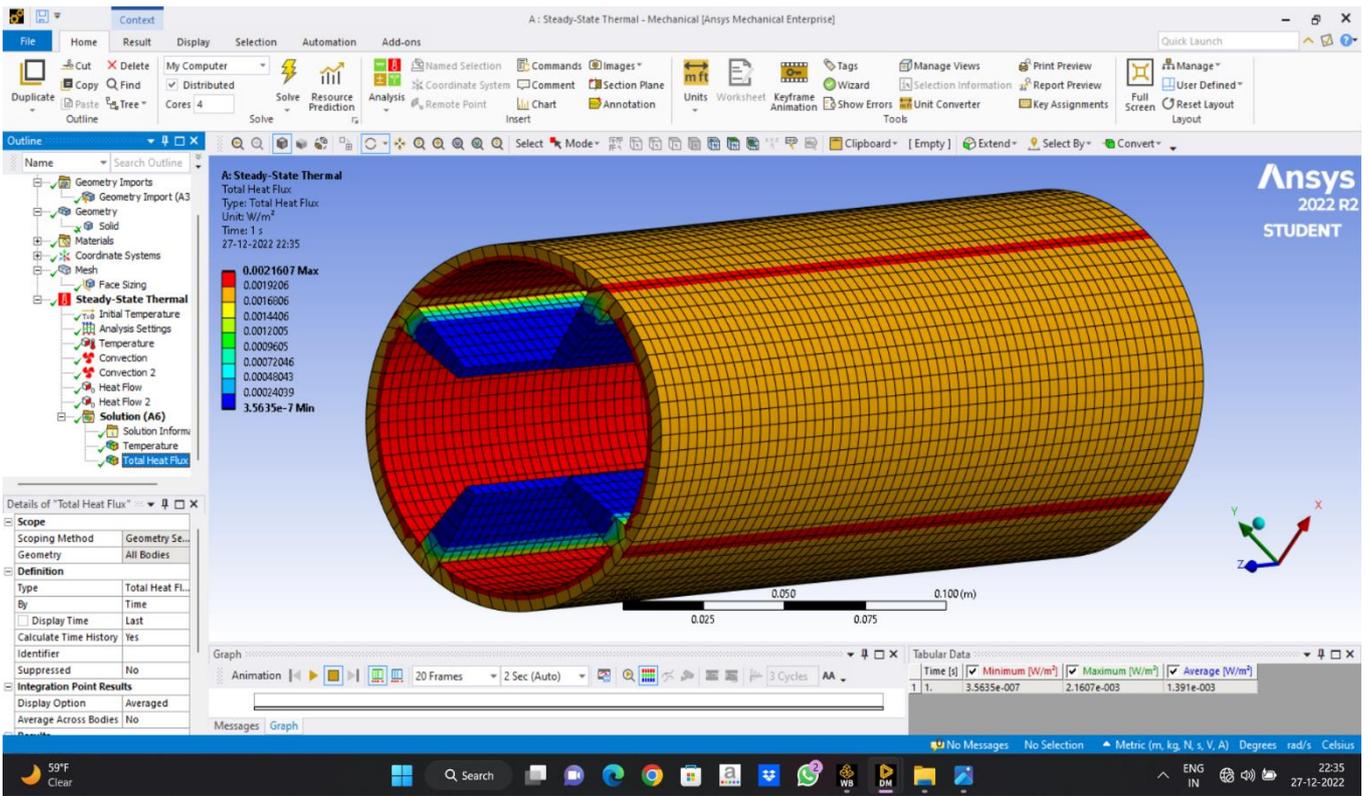
External temperature = 20C

Result:

temperature difference-



total heat flux-



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