



INDIAN INSTITUTE of TECHNOLOGY PATNA

Department of Mechanical Engineering

ME546: Multiphase Flow and Heat Transfer

Quiz 01

Last date of submission: 30th of January, 2017

Instructions

1. Make a neat report (soft copy) and email to sudheer@iitp.ac.in.
2. Rename your report in the following format ME546_Spring_2017_Q1_Rollnumber.
3. Maintain consistency in the format: A4, Times New Roman, 12pt, 1 inch border (all sides), appropriate headings/sections.
4. Identify all the assumptions.
5. Properly present the correlations that are being used in the report and the range in which they are being used.
6. Present all your graph(s) with good resolution in the report. Axis labels, legends, and figure title are must. All legends should be of readable size and consistent with the report font and size (Times New Roman, > 10 pt).
7. List all the variables along with units (Nomenclature).
8. Bibliography is must for every correlation and the values/properties considered in this report.

Problem statement

1. Draw the boiling curve (log-log plot) of saturated water-steam at 1 atm on a flat horizontal ground and polished Stainless Steel. Assume appropriate correlations, values and thermodynamic properties. Compare the influence of radiation in the flow boiling.
2. Plot heat transfer coefficient in different boiling regimes.
3. Identify the different points of interest: start of nucleate boiling, critical heat flux, minimum heat flux.

End