Purdue University
School of Nuclear Engineering

NUCL 355 - Nuclear Thermal-Hydraulics Laboratory

Prelab 11: Forced Convection Heat Transfer

Air at 1 atmosphere and 20^{o}C enters a vertical pipe of ID 6 cm and length 1.5 m heated uniformly with a power of 2kW.

0.75 meter above the inlet, the measured wall-to-air bulk temperature difference is 15^{o}C for an air bulk velocity of 25 m/s.

1. Calculate the heat transfer coefficient.
2. Compare this result with the standard forced convection heat transfer correlation.