Purdue University
School of Nuclear Engineering

NUCL 355 - Nuclear Thermal-Hydraulics Laboratory

Prelab 4: Flow Around Bodies

1. A vortex flow meter is a device that measures flow rate by determining the vortex shedding rate from an obstacle in the flow path. Assume you have a pipe 10 cm in diameter with a rod inserted across the pipe perpendicularly to the flow direction. The rod is 5 mm in diameter. Water at 20^{o}C flows through the pipe. The vortex shedding frequency is measured to be 126 s^{-1}.

   a. What is the volumetric flow rate?
   b. What is the minimum flow rate for which your calculation method would be valid?

2. Explain how hydrogen bubbles will be produced in this experiment.