
PROBLEM 12-6N QUESTION

Thermal Parameters In A Heated Channel In Two-Phase Flow

Consider a 3 meter long water channel of circular cross-sectional area $1.5 \times 10^{-4} \text{m}^2$ operating at the following conditions:

$$\dot{m} = 0.29 \text{ kg/s}$$

$$p = 7.2 \text{ MPa}$$

$$h_{\text{in}} = \text{saturated}$$

$$q'' = \text{axially uniform}$$

$$x_{\text{exit}} = 0.15$$

Compute and plot as a function of axial position:

1. Fluid temperature,
2. Wall temperature, and
3. CHF for the axial locations where the Hench-Levy limit lines (page 561) are valid.