

Paper #KE-35

The effect of pipe length on the flooding mechanisms in inclined pipes

¹Deendarlianto, ¹Hermawan

¹Department of Mechanical & Industrial Engineering, Faculty of Engineering,
Gadjah Mada University, Jalan Grafika No.2, Yogyakarta 55281, Indonesia

E-mail: deendar@hotmail.com, hermawan_ugm@yahoo.com

Abstract

An investigation of the effects of pipe length on flooding during adiabatic air-water counter-current two-phase flow in inclined pipes of 16 mm I.D. was conducted experimentally. A constant electric current method and visual observation were utilized to elucidate the flow mechanisms at the onset of flooding. As a result, it was found that (1) Upper flooding moves to lower flooding as the pipe length decreases, (2) in the range of pipe length tested, the upper flooding disappeared when the pipe length was 0.5 m, and (3) the onset of flooding decreases as the pipe length increases.

Keywords: loss of coolant accident, flooding, inclined pipes, upper flooding, lower flooding