

Flow Observation and Distribution of Two-Phase Flow in a Distributor

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In order to understand flow configurations and distribution behavior of gas and liquid two-phase flow in distributors, a basic experiment has been carried out for a two-path distributor by using air and water two-phase flow as working fluids. The two-path distributor was set as one of the branches in upper and another one in lower against the gravity. Both the branches are parallel with each other and they are same direction with main channel. Inclination angle of the distributor was changed as horizontal, 30° and 60°. Fully developed air-water two-phase flow enters the main channel and is separated into the branches. The flow is upward when the distributor is inclined. Flow patterns in the main channel were stratified, slug, and annular according to the flow rates of air and water. Flow configurations during the separation were observed by high-speed video and effects of gravity and entrance flow pattern were investigated.