

Gas hold-up profiles measurement using ultrasonic sensor

Abstract

In this letter, we present a work carried out to measure gas hold-up profiles in a liquid column using a pair of ultrasonic sensors. The gas hold-up profiles from 1.85 to 7.7 mm in diameter are of interest in this investigation. The measurement setup consists of a pair of ultrasonic sensors, an experimental column, a signal conditioning circuit, and a digital storage oscilloscope. The experiment was conducted using several gas hold-up profiles, and the relationship between the ultrasonic signal and the profile were deduced. This letter explains how one could use an ultrasonic sensor to estimate gas hold-up profiles.