

Gas Holdups in a Gas-Liquid Upflow Bubble Column With Internal

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Abstract : Gas holdup data were obtained from measured pressure drop values in a gas-liquid upflow bubble column in the presence of string of hemispheres promoter internal. The parameters that influenced the gas holdup are gas velocity, liquid velocity, promoter rod diameter, pitch and base diameter of hemisphere. Tap water was used as liquid phase and nitrogen as gas phase. About 26 percent in gas holdup was obtained due to the insertion of promoter in in the present study in comparison with empty conduit. Pitch and rod diameter have not shown any influence on gas holdup whereas gas holdup was strongly influenced by gas velocity, liquid velocity and hemisphere base diameter. Correlation equation was obtained for the prediction of gas holdup by least squares regression analysis.

Keywords : bubble column, gas-holdup, two-phase flow, turbulent promoter

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