

Instytut Inżynierii Chemicznej

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Novel Identifier of Transitions in Bubble Columns Operated with Water and Aqueous Alcohol Solutions

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The accurate identification of the transition velocities U_{trans} in bubble columns (BCs) is important for their effective design, operation, and scale-up. In this work, a novel parameter, namely, the new hybrid index (NHI), was developed and successfully applied to gas holdup and pressure fluctuations recorded in various BCs operated with water and aqueous solutions of alcohols (ethanol and propan-2-ol). The first U_{trans} was identified on the basis of a well-pronounced local NHI minimum, whereas the second U_{trans} was distinguished by the point from which the NHI profile levels off. It was concluded that the main U_{trans} depend on the type of gas-liquid system and sparger used. A set of several U_{trans} is reported.

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