

Institute of Chemical Engineering

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Identification of constant and stable main transition velocity in bubble column reactors

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Tags:	bubble columns , flow regime identification , main transition velocity , entropy analysis

Abstract: This work presents new results about the reliable identification of the main transition velocity $U_{\text{trans-1}}$ in different bubble columns (0.1 – 0.46 m in inner diameter) equipped with several perforated plate gas distributors. Two different gas-liquid systems (air-water and air-therminol LT) have been used. The most important finding in this work is that $U_{\text{trans-1}}$ (end of the homogeneous regime) occurs at $0.04 \text{ m}\cdot\text{s}^{-1}$ irrespective of the operating conditions studied. For the $U_{\text{trans-1}}$ identification, the following parameters have been used: Kolmogorov and reconstruction entropies, degree of randomness and information entropy.

Attachments:

[Zeszyt-24-2020](#) pdf, 3.25 MB

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