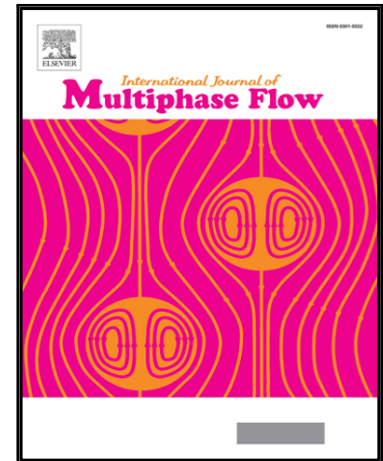


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Separation characteristics of the gas and liquid phases in a vane-type swirling flow field

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Highlights

- A systematic study on separation characteristics of gas-liquid in a vane-type swirling flow field was carried out.
- Bubble size distribution and phase concentration were measured by Malvern RTsizer and Electrical Resistance Tomography respectively.
- Influences of mixture flow rate, inlet void fraction, and surface tension on gas core size were presented.
- With the bubble size model developed as inlet boundary operating conditions, the numerical simulation coupled RNG $k-\varepsilon$ turbulent model and Mixture multiphase model.
- The results obtained should be beneficial for down-hole separator design in oil extraction industry.

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