

## RESEARCH PAPERS

加压下规整填料塔内气液两相轴向返混实验研究

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收稿日期 修回日期 网络版发布日期 接受日期

**摘要** An experimental study of the extent of axial backmixing in both gas and liquid phases was conducted in a 150 mm ID column packed with Mellapak 250Y corrugated structured packing. The column was operated at pressures ranging from 0.3 MPa to 2.0 MPa with nitrogen and water flowing countercurrently through the packing. The amount of axial backmixing was experimentally evaluated by the pulse response techniques using hydrogen in gas phase and

an aqueous solution of NaCl in liquid phase as inert tracers. The response of the tracer was monitored by means of thermal conductivity in the gas phase and electrical conductance in the liquid phase. The experimentally determined residence time distribution (RTD) curves were interpreted in terms of the diffusion-type model. The results indicated that the axial backmixing in the gas increased notably with gas flowrate and slightly with operating pressure and liquid flowrate. The liquid-phase axial backmixing was an increasing function of both gas and liquid flowrates and insensitive to pressure. Various correlations were developed for reproducing the experimental mixing data. The agreement between experimental and correlated data appeared to be acceptable and within +20% of difference.

**关键词** [structured packing](#) [backmixing](#) [elevated pressure](#) [gas-liquid two-phase flow](#)

分类号

**DOI:**

### Gas-Liquid Two-Phase Axial Backmixing Through Structured Packing at Elevated Pressure

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Received Revised Online Accepted

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**Key words** [structured packing](#); [backmixing](#); [elevated pressure](#); [gas-liquid two-phase flow](#)

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