

## RESEARCH PAPERS

内构件对高密度提升管内流体力学及径向气体混合的影响

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**摘要** Effect of bluff internals on the hydrodynamics and lateral gas mixing was studied in a 0.186m ID high-density riser. With the bluff internals, the extremely non-uniform radial profiles of solid fraction and particle velocity become flat and the dense downflow layer near the wall disappears, indicating the significant enhancement of solid turbulence introduced by the internals. The fluctuation velocity and solid fraction transient signal analysis indicates a significant increase in fluctuation intensity near the wall region. The length influenced by the internals on the flow structure is about 1 meter. The lateral gas dispersion coefficient increases significantly as the bluff internals exist in the riser.

**关键词** [high-density riser](#) [bluff internal](#) [solid fraction](#) [particle velocity](#) [transient analysis](#) [gas mixing](#) [gas dispersion model](#)

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### Hydrodynamics and Lateral Gas Dispersion in a High-Density Circulating Fluidized Bed Reactor with Bluff Internals

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**Abstract** Effect of bluff internals on the hydrodynamics and lateral gas mixing was studied in a 0.186m ID high-density riser. With the bluff internals, the extremely non-uniform radial profiles of solid fraction and particle velocity become flat and the dense downflow layer near the wall disappears, indicating the significant enhancement of solid turbulence introduced by the internals. The fluctuation velocity and solid fraction transient signal analysis indicates a significant increase in fluctuation intensity near the wall region. The length influenced by the internals on the flow structure is about 1 meter. The lateral gas dispersion coefficient increases significantly as the bluff internals exist in the riser.

**Key words** [high-density riser](#); [bluff internal](#); [solid fraction](#); [particle velocity](#); [transient analysis](#); [gas mixing](#); [gas dispersion model](#)

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