

# Influence of the size of heat exchanging internals on the gas holdup distribution in a bubble column using gamma-ray computed tomography

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## Highlights

- Visualizing gas holdup distribution in the bubble column with and without internals.
- Quantification impacts of the size of the internals on the gas holdup distribution.
- More symmetric gas holdup distribution was obtained with 1-in. internals.
- Gas holdup in the core of the bubble column without internals is similar to that with internals.

## Abstract

The effects of the presence of the vertical internals of different sizes at a wide range of superficial gas velocity on the overall, local gas holdup distributions and their profiles have been studied and quantified in a 6-in. (0.14 m) Plexiglas® bubble column with air-water system using a non-invasive advanced gamma-ray computed tomography (CT) technique. In this study, two sizes of Plexiglas® vertical internals, having the same occupying area (~25%) of the column's cross-sectional area (CSA) that represents those used in Eastern European countries, have been used within a range of superficial gas