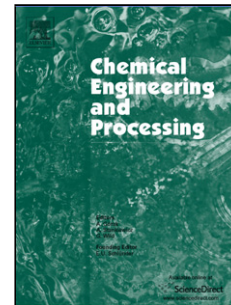


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## Separation Efficiency of Mixtures by Distillation using Structured Noncircular Packings

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### Graphical abstract

The paper presents experimental results on separation of a binary mixture in distillation columns with semi-cylindrical and square shapes of cross-section. The cross-sectional areas of non-cylindrical columns are close to area of a round column with the diameter of 0.6 m. The structured package with corrugation angles of 45° and 60° and specific area of 500 m<sup>2</sup>/m<sup>3</sup> was studied. Pressure drop on the packings with non-cylindrical cross-section before loading point is almost the same as for a round column. HETP at low vapor loads of the column does not depend on the shape of the columns cross-section. At high vapor loads, HETP for the structured packings in square and semi-cylindrical columns increases by 20–30% as compared to the round column. The main characteristic of the influence of the liquid and vapor flow rates, other operating parameters obtained for round column, are also valid for columns with noncircular geometry.

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