

# Institute of Chemical Engineering

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## Lipase immobilized on MCFs as biocatalysts for kinetic and dynamic kinetic resolution of sec-alcohols

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Dynamic kinetic resolution (DKR) is one of the most attractive methods for enantioselective synthesis. In the reported studies, lipase B from *Candida antarctica* (CALB) immobilized on siliceous mesoporous cellular foams (MCF) functionalized with different hydrophobic groups, and two ruthenium complexes with substituted cyclopentadienyl ligands were investigated as catalysts for the chemoenzymatic DKR of (rac)-1-phenylethanol, using Novozym 435 as a benchmark biocatalyst. Studies on the (rac)-1-phenylethanol transesterification reaction showed that CALB supported on MCFs grafted with methyl groups is a promising biocatalyst and isopropenyl acetate is a preferable acylation agent. Both Ru-complexes activated by K<sub>3</sub>PO<sub>4</sub> or t-BuOK, proved to be effective catalysts of the racemization reaction. The final DKR experiments using all catalysts combinations singled out, gave 96% conversion, and (R)-1-phenylethyl acetate enantiomeric excess of 98% in 8 h using K<sub>3</sub>PO<sub>4</sub> activator.

## Metryczka

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