



## Hydrolysis of sucrose over composite catalysts

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### ABSTRACT

The hydrolysis of sucrose into glucose and fructose was carried out over composite catalysts at 80 °C. These catalysts consisted of USY and Beta zeolites dispersed in polymeric matrices (PDMS and PVA). The swelling degree of polymers increased with the amount of zeolite immobilised in PDMS and PVA. This result can be explained by the increase in the polymeric matrix channelling. Additionally, the effective diffusivity of sucrose increases with the amount of USY and Beta zeolite that was dispersed in PDMS.

The catalytic activity increases with the amount of zeolite dispersed in the polymeric matrix. The PVA composites showed higher catalytic activity than the PDMS ones.

To study the catalytic stability of the Beta2/PVA catalyst, four consecutive batch runs were carried out with the same catalyst. The Beta2/PVA catalyst was recycled and reused with a negligible loss in its activity.

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