



## Methoxylation of $\alpha$ -pinene over mesoporous carbons and microporous carbons: A comparative study



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### ABSTRACT

A biomass derived carbon, a commercial microporous carbon and a xerogel mesoporous carbon catalysts were used in the study of  $\alpha$ -pinene methoxylation reaction and the influence of textural and physical-chemical properties of the carbons was evaluated. Biomass carbon presented the higher activity, whereas the commercial one is the less active in the conditions studied. The main product of the reaction was  $\alpha$ -terpinyl methyl ether and good values of selectivity were obtained over all the catalysts.

A kinetic model was developed assuming that the  $\alpha$ -pinene is consumed according to the parallel reaction network. The kinetic model presents high quality fittings to the experimental concentration profiles.

These results show that it is possible to activate a waste residue using  $H_3PO_4$  and convert it to high added value product such as acid catalyst.

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