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**PORTO SANTO CLAYS AS ENVIRONMENTALLY
FRIENDLY CATALYSTS FOR THE CONVERSION OF
RENEWABLE TERPENE FEEDSTOCKS.
LIMONENE AROMATIZATION TO P-CYMENE**

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Abstract

A bentonite collected at Serra de Dentro, Porto Santo Island, Portugal was selected as the starting material for the preparation of ion-exchanged clay catalysts. The pristine clay was characterized in terms of chemical composition (XRF), structure (XRD and FTIR spectroscopy), textural properties (nitrogen adsorption), acidity (TG of cyclohexylamine saturated samples) and catalytic activity (limonene conversion). Results show that clays exchanged with acidic cations (Al^{3+} , Ni^{2+}) are very active in limonene conversion, but the selectivity for p-cymene is low (15 %). In contrast, over the Na^+ -exchanged form, the reaction is slower but the selectivity to p-cymene is significantly increased (around 35 %). The inherent dehydrogenation activity of the SD clay could be considered responsible for this process.

Keywords: ion-exchanged clays, acidity, catalysis, limonene, p-cymene

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