Polyethylene Synthesis Catalyzed by Cp₂ZrCl₂ Supported on Mordenites with Different Physico-Chemical Properties

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The commercial zeolite sodic mordenite was chemically and thermally treated in order to obtain materials with different physico-chemical properties to be employed as support for the metallocene bis(cyclopentadienyl)zirconium dichloride used for ethylene polymerization. The supports obtained were characterized regarding their chemical composition, textural properties as well as Lewis and Brønsted sites concentrations. It was verified that the original zeolite without dealumination treatment was the most active catalyst followed by the material dealuminated with steam. All the supported catalysts produced polyethylene with higher molecular weight in relation to that obtained with the homogeneous counterpart.

Key words: Polyethylene (PE), Zeolites, Metallocene Catalysts