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PEROVSKITE UTILIZATION AS CATALYSTS IN NO REDUCTION BY SCR-HC IN ABSENCE OF O₂

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Abstract

The present paper is concerned with the preparation, the characterization of the non-stoichiometric perovskite-type oxides La_{0.92}MnO₃, La_{0.7}Ce_{0.3}MnO₃, CeMnO_x and the study of their catalytic activity in NO reduction by propene. These tests were carried out in a SCR-HC equipment for NO reduction in propene and nitrogen oxide atmosphere without oxygen. The catalysts showed a high catalytic activity in NO reduction, which can be explained by oxygen activation from the interfaces of these structures. La_{0.92}MnO₃ perovskite showed only above 350 °C activity for NO reduction with propene while the other two perovskites displayed activity already at lower temperatures. The CeMnO_x perovskite was the most active catalyst with an activity starting at 200 °C and 100 % NO conversion at 450 °C. The values of propene conversion at 450 °C were 52 % for La_{0.7}Ce_{0.3}MnO₃, 36 % for La_{0.92}MnO₃ and 47 % for CeMnO_x.

Keywords: perovskite, SCR-HC, propene, NO_x

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