HYDROGEN PEROXIDE AS ECOLOGICAL OXIDANT FOR CATALYTIC OXIDATION PROCESSES: CYCLOHEXANE OXIDATION OVER 5 WT.-% V_2O_5-AL_2O_3 XEROGEL

Y. N. Tchenar [1], D. Lahcene [1,2], R. Bachir [1], A. Choukchou-Braham [1]

Laboratoire de catalyse et synthèse en chimie organique, département de chimie. Université de Tlemcen, BP 119 Tlemcen 13000 Algérie.
(2) Institut des génies mécaniques. Centre universitaire de Béchar, BP 417 Béchar 08000 Algérie.

The fast deterioration of environment has sought the replacement of environmentally hazardous liquid acid and base catalysts used in several petrochemical and chemical industries and more attention is so being paid to the use of heterogeneous catalysts.

Synthesis of porous materials offers a new possibility for the creation of catalysts that are effectives in many industrial processes. In this work we present our results on the synthesis of 5% V_2O_5-Al_2O_3 xerogel; which is investigated in the cyclohexane oxidation reaction with hydrogen peroxide as oxidant.
The H_2O_2 decomposition yields environmentally being water and oxygen; and the use of acetone as solvent was shown the high conversion into cyclohexanol and cyclohaxanone mixture (an important intermediate for manufacturing 6,6 nylon) with 88.75% selectivity.