Influence of the synthesis method on structural properties and catalytic activity for oxidation of CO and C3H6 of pirochromite MgCr2O4

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Publication date
2010/2/26

Journal
Applied Catalysis A: General

Volume
375

Issue
1

Pages
101-106

Publisher
Elsevier

Description
The work examines comparatively $MgCr_2O_4$ oxide samples prepared by three methods (solid state reaction, sol–gel and co-precipitation within reverse microemulsion) with respect to their structural/morphological characteristics and catalytic properties for complete combustion of carbon monoxide and propene. For this purpose, the samples are examined by XRD, S_{BET}, SEM, XPS and TPR techniques. The results reveal achievement of optimum catalytic properties for the sample prepared by microemulsion, a method which apparently allows achievement of high surface area nanocrystals in this type of material.