Catalysis Communications

Vol. 54 (2014) 118–123

# Efficient room temperature oxidation of cyclohexane over highly active hetero-mixed WO3/V2O5 oxide catalyst

P.R. Makgwane *, S.S. Ray

DST-CSIR National Centre for Nano-Structured Materials, Council for Scientific and Industrial Research, P. O. Box 395, Pretoria, 0001, South Africa

Department of Applied Chemistry, University of Johannesburg, Doornfontein 2018, South Africa

## Abstract

An efficient room temperature catalyzed oxidation of cyclohexane to cyclohexanone (K) and cyclohexanol (A) was achieved over hetero-mixed tungsten–vanadia ($WO_3/V_2O_5$) using $H_2O_2$ oxidant. $WO_3/V_2O_5$ exhibited high catalytic activity to initiate the free-radical oxyfunctionalization of cyclohexane to afford up to 90% conversions within 6 h. The KA selectivity was found to depend on reaction time and the amount of catalyst. The $WO_3/V_2O_5$ catalyst was highly recyclable with consistent catalytic activity