

Microkinetic Modelling of NO Reduction on Pt Catalysts

Authors : Vishnu S. Prasad, Preeti Aghalayam

Abstract : The major harmful automobile exhausts are nitric oxide (NO) and unburned hydrocarbon (HC). Reduction of NO using unburned fuel HC as a reductant is the technique used in hydrocarbon-selective catalytic reduction (HC-SCR). In this work, we study the microkinetic modelling of NO reduction using propene as a reductant on Pt catalysts. The selectivity of NO reduction to N_2O is detected in some ranges of operating conditions, whereas the effect of inlet O_2 % causes a number of changes in the feasible regimes of operation.

Keywords : microkinetic modelling, NOx, platinum on alumina catalysts, selective catalytic reduction

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