

Zeolites for Clean AirS. Sauerbeck¹, T. Cotter¹

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The use of zeolites as adsorbents and catalysts in petrochemical processes is well established now for several decades. More recently, spurred by developments in automotive catalysis (DOC, SCR), their unique properties including temperature stability and hydrophobicity, combined with tailored pore geometries have been exploited in numerous environmental applications as catalysts, adsorbents and as exceptional support materials. Examples of these include: decomposition of N₂O from nitric acid tail gas by Fe-zeolites, adsorption of VOCs in composite matrices and as novel oxidation catalysts in conjunction with platinum group metals that can operate in high dust environments. These unique materials, used alone or combined with other chemical functionalities enable a large scope of end uses. The utility of such zeolite properties can be rationalized and explored leading to high performance materials by design.