Nanoporous catalysts are applied in a broad range of chemical conversions. Often, the high specific surface area and the confined pore space are utilized to achieve high activity and selectivity. However, low catalyst effectiveness factors may result, if mass-transfer limitations exist, e.g., due to large substrate molecules. Additional pore systems with larger dimensions in the macro- and mesoporous range may, thus, help to increase accessibility and mass-transfer to and away from the catalytically active sites within nanoporous catalysts. This presentation will highlight two examples of nanoporous catalytic systems demonstrating the beneficial effect of an additional system with larger pores. In the first example, titanium silicalite-1 (TS-1)-based catalysts with an additional mesopore system are applied for the epoxidation of fatty acid methyl esters (FAME) with hydrogen peroxide in the liquid phase. The second example deals with the selective catalytic reduction of NOx over monolithic mixed oxide V\textsubscript{2}O\textsubscript{5}/TiO\textsubscript{2}-catalysts (Figure 1). The results provide experimental proof for increased reaction rates in the presence of a combined meso-/macropore system over a purely mesoporous catalyst.

Roger Gläser received his Ph.D. degree in Chemistry from the University of Stuttgart in 1997. After a research stay at the School of Chemical Engineering of Georgia Institute of Technology, Atlanta, USA, he returned to the University of Stuttgart and completed his habilitation in Chemical Technology in January 2007. Since 01.08.2007, he is a Full Professor for Chemical Technology, the Director of the Institute of Chemical Technology and of the Institute of Nonclassical Chemistry e.V. at the Universität Leipzig. His research interests include the preparation and characterization of novel sorbents and catalysts with defined nanoporosity, supported noble-metal and photocatalysts as well as the utilization of alternative solvent systems and non-thermal energy input strategies in heterogeneous catalysis. Besides the aftertreatment of diesel off-gas by SCR-based technologies, the conversion of biomass and related raw materials to fuels and chemicals also represents a major field of activity.

**“UNDERSTANDING CELLULOSE PROCESSING IN IONIC LIQUIDS: EFFECTS OF CO- AND ANTI-SOLVENTS”**

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**Figure 1.** STEM of a hierarchical meso-/macroporous vanadia/titania sample (gray background, right). EDX-mapping of the same view (left; oxygen (blue), titanium (red) and vanadium (green)). The inserted graph (top right) shows the local elemental scanning.