ETH zürich

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chairman: Prof. Dr. Andrew deMello

MANIPULATION WITH ZEOLITIC LAYERS TOWARDS NEW POROUS MATERIALS

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HCI G 7, 17.00 h
The Seminar will be followed by an Apéro

Abstract. The Assembly-Disassembly-Organisation-Reassembly (ADOR) mechanism is a new method of preparing inorganic framework materials, and in particular new zeolites. Using the ADOR approach we can prepare isoreticular families of zeolites with unprecedented continuous control over porosity, and develop designer routes to new materials that would previously have been difficult or even impossible to synthesise using traditional solvothermal routes. The process is extremely flexible and starts from the parent germanosilicate zeolite. In the case of UTL framework one can prepare a family of six new zeolites, named IPC-2, IPC-4, IPC-6, IPC-7, IPC-9 and IPC-10. This lecture will focus on the synthesis mechanism of ADOR process, novel hierarchical materials with organic and inorganic pillars, new feasible and "unfeasible" zeolites, and description of their properties.

Speaker highlights. Prof. JIŘÍ ČEJKA studied at the Institute of Chemical Technology in Prague and received his Ph.D. at the J. Heyrovský Institute of Physical Chemistry and Electrochemistry in Prague in 1988. He spent 6 months as postdoc at Technical University of Vienna under the supervision of Prof. J.A. Lercher. Currently, he is a head of the Department of Synthesis and Catalysis at J. Heyrovský Institute of Physical Chemistry in Prague and is lecturing the catalysis courses at the Faculty of Science, Charles University in Prague. In 2005 he chaired the 3rd FEZA Conference on Zeolites in Prague. Jiří Čejka is organizer of a number of workshops devoted to zeolites and molecular sieves. His research interests involve synthesis of zeolites, mesoporous, and novel nano-structured materials, physical chemistry of sorption and catalysis, and investigation of the role of porous catalysts in transformations of hydrocarbons and their derivatives. He is co-author of more than 270 research papers and co-editor of 6 books.