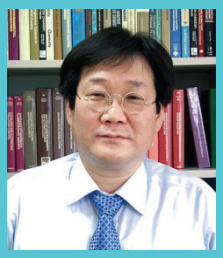
東京大学グローバルCOEプログラム　機械システム・イノベーション国際拠点

東京大学 THE UNIVERSITY OF TOKYO

GMSI Global Center of Excellence for Mechanical Systems Innovation

第68回　GMSI公開セミナー

Zeolite Syntheses via a Charge Density Mismatch Approach



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日時：2010年 11月15日（月）15:00–16:30

会場：東京大学工学部 5号館 6F 第5輪講室（637号室）

要旨

Zeolites and related microporous solids find widespread application in many technologies, including ion exchange, separation and catalysis. Their advantages over other solids stem directly from their high surface areas and structure-dependent, pore geometries and cation environments. As a consequence, considerable effort is expended in the design of new zeolitic materials with unique structural features that could lead to improvement or development of new commercial processes.

This lecture concentrates on zeolite syntheses via a charge density mismatch (CDM) Approach that was developed by researchers at UOP in the early 2000s. The CDM approach holds a certain degree of rational design in that it forces a cooperative structure direction with double or multiple structure-directing agents (SDAs) and/or a more favorable match with the Negative framework charge density of the resulting aluminosilicate product. After describing some interesting aspects of this relatively new, clever strategy, I will talk about the synthesis and characterization of UZM-12 (framework type ERI), which is one of the aluminosilicate zeolites with known framework structures but unprecedented chemical compositions, and its methanol-to-olefin performance. Another subject of my talk is comparison of the structure-directing ability of Ga with that of Al under four different CDM synthesis conditions in which the Si/Me ratio is varied between $5 \leq Si/Me \leq 16$, where M is Al or Ga.

主催：　東京大学グローバルCOEプログラム「機械システム・イノベーション国際拠点」
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