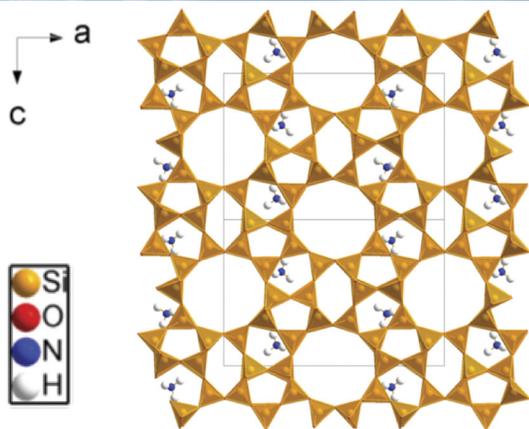
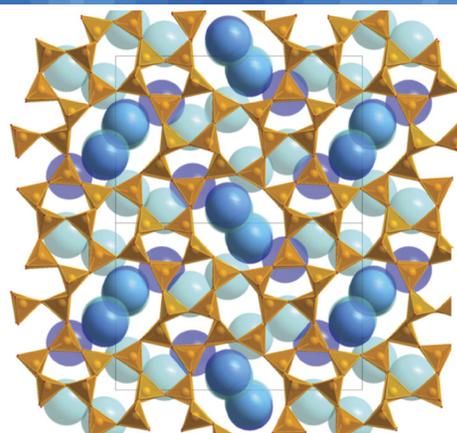


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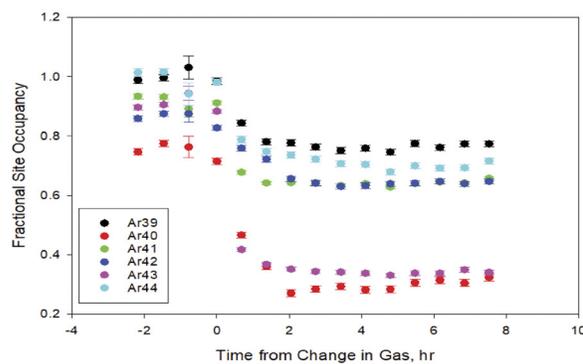
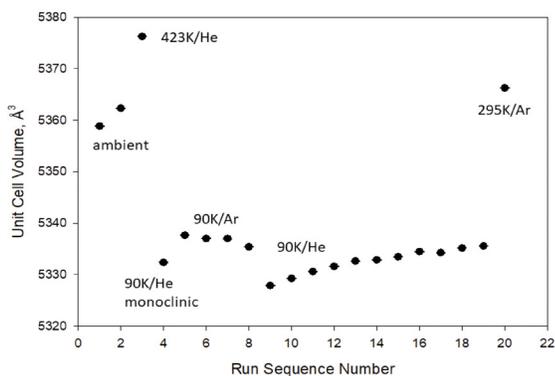
Journal of Materials Characterization



MFI Unit Cell Volume



Ar Site Occupancies in MFI at 90K
Change from Ar to He Atmosphere



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Aims & Scope

ICDD's quarterly, and special topical issue, international journal, *Powder Diffraction*, focuses on materials characterization employing X-ray powder diffraction and related techniques. With feature articles covering a wide range of applications, from mineral analysis to epitaxial growth of thin films to advances in application software and hardware, this journal offers a wide range of practical applications. ICDD, in collaboration with the Denver X-ray Conference Organizing Committee, has increased services for the subscribers of Powder Diffraction and authors of Advances in X-ray Analysis. Beginning in 2006, ICDD offered a copy of the previous year's edition of AXA to Powder Diffraction institutional subscribers who receive both print and on-line versions. This effectively doubles the number of articles annually available to Powder Diffraction subscribers and significantly increases the circulation for the authors in Advances in X-ray Analysis.

Subject coverage includes:

- Techniques and procedures in X-ray powder diffractometry
- Advances in instrumentation
- Study of materials including organic materials, minerals, metals and thin film superconductors
- Publication of powder data on new materials

International Centre for Diffraction Data

The International Centre for Diffraction Data (ICDD[®]) is a non-profit scientific organization dedicated to collecting, editing, publishing, and distributing powder diffraction data for the identification of materials. The membership of the ICDD consists of worldwide representation from academe, government, and industry.

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On the Cover: The cover figure was prepared using figures from the manuscript “Adsorption of Ar into zeolite AL-MFI (NH₄)” by Colin Scherry, James Kaduk, Winnie Wong-Ng and Huong Nguyen in this issue of *Powder Diffraction*.

The upper left figure shows the crystal structure of NIST Reference Material (RM 8852), a ZSM-5 aluminosilicate zeolite ((NH₄)_{3.27}Al_{3.27}Si_{92.73}O₁₉₂(H₂O)_{26.7} with framework type MFI. This Al-MFI (NH₄) is viewed down the b-axis. The zig-zag channels are parallel to the a-axis. The argon/helium adsorption of RM 8852 was studied as a function of temperature and gas pressure. The upper right figure shows the crystal structure of Ar-filled Al-MFI viewed down the b-axis (Ar is colored blue and purple). The lower left figure shows the unit cell volume changes as a function of temperature and atmosphere. The lower right figure shows the Ar site occupancies at 90K as a function of time from change of gas for each of the six different Ar crystallographic sites.