Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Porous Particles: Controlling Molecular Diffusion within Metal-Organic Frameworks AH-YOUNG JEE, MELINDA SINDORO, STEVE GRANICK, University of Illinois at Urbana-Champaign — Systematic investigation of molecular diffusion under nanoconfinement is carried out utilizing pore tunability of ionic metal-organic frameworks (MOFs). The translational and rotational diffusion of specially-selected guest dyes is evaluated by fluorescence correlation microscopy (FCS). A curious novel technique is demonstrated of controlling diffusion by switching counterions. Systematically, this study provides generalizable examples of how pore size, guest size, and host-guest interaction affect diffusion within nanopores.

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Date submitted: 11 Nov 2013 Electronic form version 1.4