



Molecular Sieves: The Molecular Gate Effect and Beyond

Monday, April 9, 2007

Babbio Bldg, Room 104, Time: NOON

***** Note: date / time / room change *****

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Forming the heart of hundreds of processes as catalysts, adsorbents, ion-exchange and purification agents, crystalline molecular sieves are among the most important and valuable classes of inorganic materials. Utilized in petroleum cracking for gasoline production, oxygen production from air, water purification by removing heavy metals and much more, these materials directly impact our lives.

A basic review of molecular sieves, their properties and potential new applications will be presented. These include cost effective templating of nano-metal ensembles, heavy oil-cracking with nano-structured mineral catalysts and the Molecular Gate effect where uniform pores controllable to a precision of 0.01 nanometer or better, capable of separating molecules with such small size differences, is bringing a new dimension to the concept of molecular sieving.

Dr. Steven M. Kuznicki received his BS With Highest Distinction in Chemistry from Worcester Polytechnic Institute in 1976 and his Ph.D. in Physical Chemistry from the University of Utah in 1980. For his 50+ patented discoveries and fundamental contributions in the generation and application of molecular sieve zeolites, Dr. Kuznicki has been recognized as both a top inventor (1997 New Jersey Inventor of the Year) and top industrial scientist (2001 Thomas Edison Award of the New Jersey Research Council). In 2004, after a distinguished career with Air Products and Chemicals and Engelhard Corporation (now a division of BASF), Dr. Kuznicki initiated a career in academia. He currently serves as Professor, Department of Chemical and Materials Engineering at the University of Alberta where he has been named an Alberta Ingenuity Fund Scholar, an NSERC Industrial Research Chair and a Tier I (senior) Canada Research Chair in New Molecular Sieve Nanomaterials. Dr. Kuznicki also serves as an Adjunct Professor of Chemistry at the University of Utah and has served as a consultant for a range of organizations including IBM, Eaton, Bose Electronics, QuestAir Technologies, Graver Technologies, Xebec Corporation and Savannah River National Labs.

Light refreshments will be served prior to seminar



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