DEPARTMENT OF

ENERGY AND MINERAL ENGINEERING

COLLEGE OF EARTH AND MINERAL SCIENCES

EGEE/PNGE 590 Colloquium

A COMPARATIVE STUDY OF DIFFERENT MATERIALS FOR ADSORPTION DESULFURIZATION

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Abstract:

Increasingly stringent environmental regulations, sensitive pollution-control devices, and fuel cell applications drive the need for ultra-low sulfur fuel. Adsorptive desulfurization is a promising alternative for removing sulfur from liquid transportation fuels. In this study, the performance of different materials for adsorption desulfurization of liquid transportation fuels for fuel cell applications was examined. Fixed-bed, continuous flow experiments were performed on eight different materials treating six different fuel mixtures representing gasoline, diesel, and jet fuel. Adsorbents were compared and rated on the basis of breakthrough capacity at 1 ppm sulfur by weight and capacity at saturation. Comparisons were made on the basis of weight, volume, and surface area to evaluate the impact of different physical and chemical properties on adsorption performance. The results of this study will help to assess the potential for using different adsorbents for portable fuel cell applications and will identify future research areas in adsorptive desulfurization.

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Thursday, March 20, 2008
1:00 – 2:15 p.m.
157 Hosler Building

light refreshments will be served at 1:00 p.m.