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Structure of Nanoporous Biocarbon for Hydrogen Storage as Determined by Small Angle X-Ray Scattering MIKAEL WOOD, J. BURRESS, J. POBST, S. CARTER, P. PFEIFER, C. WEXLER, University of Missouri-Columbia, Department of Physics, P. SHAH, G. SUPPES, University of Missouri-Columbia, Department of Chemical Engineering — As a member of the Alliance for Collaborative Research in Alternative Fuel Technology (ALL-CRAFT) our research group studies the properties of nanoporous biocarbon, produced from waste corn cob, with the goal of achieving the Department of Energy's gravimetric and volumetric standards for both hydrogen and methane gas storage. Small Angle X-Ray Scattering (SAXS) is a valuable tool in our investigation of the geometry of the pore space in our carbon samples. In this talk, we will compare the experimental SAXS data with theoretical results for various pore geometries to determine which pore models are consistent with experiment. Using data from nitrogen adsorption isotherms, along with SAXS, yields significant structural information about the pore space. This analysis should allow us to fully optimize our production process and to achieve the DOE's target storage capacities. This work supported by: 1. National Science Foundation (PFI-0438469) 2. U.S. Department of Education (P200A040038) 3. U.S. Department of Energy (DE-AC02-06CH11357) 4. University of Missouri (RB-06-040) 5. U.S. Department of Defense (N00164-07-P-1306) 6. U.S. Department of Energy (DE-FG02-07ER46411)

Mikael Wood
University of Missouri-Columbia, Department of Physics

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