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Gravimetric analysis of methane adsorption in activated carbon

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Recently fractal networks of nanopores in activated carbon, nanoporous carbon from waste corn cobs in Missouri, have been discovered (Pfeifer et al., Phys. Rev. Lett. 88, 115502 (2002)). We study the formation and properties of these networks with the goal of developing high-capacity storage technologies for natural gas and using them to store methane at low pressures. Van der Waals forces in the nanopores force methane into a dense fluid (supercritical adsorption). To further investigate the storage capacity of carbon, an analysis was done on the out gassing times for a sample of carbon in addition too several carbon samples that were tested to determine the sample with the highest storage capacity. Results showed that two hours of out gassing was the minimum time needed for optimum data. I continue too investigate the storage capacity by testing at an equilibration of one hour and out gassing for two hours as well as perform isotherms for the purpose of determining how much methane the activated carbon can deliver and pore size distribution. The data will determine how the pore size distribution and activation process of different samples of carbon impacts its storage capacity. Future distribution and activation process of different samples of carbon impacts its storage capacity.