Manometric determination of supercritical gas sorption in coal

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The manometric method has been improved to provide accurate data of sorption of supercritical gas in coal. Using the improved apparatus, the construction of a large database of sorption determinations has been initiated. This database will allow the development of a theory that describes the sorption process. This theory provides better understanding of some of the physical and chemical processes occurring in underground coal when producing coalbed methane from or storing carbon dioxide in underground coal.

This theory will improve the predictive ability of reservoir models used to identify economically viable projects for the production of methane or the sequestration of carbon dioxide. Moreover, the production of methane or the sequestration of carbon dioxide of such projects can be optimized using these models. Implementation of these projects will contribute to meeting the local or global demand for energy by increasing the production of methane or to reducing the emission of carbon dioxide by sequestration of carbon dioxide in underground coal.