

## **INVESTIGATIONS ON THE ADSORPTION OF CH<sub>4</sub> AND CO<sub>2</sub> ON COAL: INFLUENCE OF MOISTURE AND RANK**

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Coal is the most abundant energy source in the world, and it is a major source of hydrocarbons, particularly gas. Its specific character consists in its dual function as source and reservoir of hydrocarbons. Methane produced from Coal Seams (CBM = Coalbed Methane) is a growing market, with more than 8000 gas producing wells. The estimation of the gas in place and maximum storage capacity is difficult because of the lack of reliable data on specific parameters controlling adsorption. Whereas the influence of pressure and temperature on the adsorption are more or less understood, the effects of rank and moisture are not well known, especially with respect to binary gas mixtures. For this purpose single- and binary gas mixture isotherms of methane and carbon dioxide have been investigated. Using a high-pressure volumetric apparatus the selective adsorption of these two gases on coals of varying rank was studied. The second aim of the investigation is the influence of moisture in combination with rank. Isotherms for dry and moist coal were used to investigate the corresponding relationship between gas adsorption, moisture and rank.