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**Experimental study on electromagnetic surface modification
and FTIR of coal**

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Abstract: Adsorption and desorption of coal are typically surface phenomena. Characteristics of surface modification of coal in Zhu cun mine of Jiao zuo in alternative electrical field with different frequencies have been studied by FTIR technique and self-designed, automatically inspecting and surveying system of coal-methane in this paper. The result shows adsorption ability of coal to gas obviously reduces in alternative electrical field, which is a typical surface modification phenomena. But the modification is instantaneous? temporary, which can not change the micro structure of radicles in coal for ever.

Keywords: adsorption and desorption; electromagnetic modification; alternative electric field; FTIR technique