^{13}C NMR Characteristics of Structures of the Experimental Deformed Coals and Their Significance of Structural Geology

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Based on the research of ^{13}C solid state nuclear magnetic resonance (NMR) of 4 deformed coal samples of experiment under high temperature and confining pressure and 2 of their original samples, it is revealed microcosmic mechanism of structural evolution of deformed coals and the inherent relationship between it and optical variation of vitrinite reflectance. It is expounded that the difference of stress action in variations of strain environment controlled evolution of carbon structure to a certain extent and the difference of vitrinite reflectance is exactly the external reflection of divergence of coal structure. Therefore, the optical fabric of coal vitrinite reflectance really records characteristics of stress action and strain environment in deformation history of coal. The vitrinite reflectance is one of the very important strain indicators in research on coalfield structure.