

Studied on the IR spectra of mineral floating shocked and polarized adsorption

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Authors compared the IR spectra feature and their change of 7 main minerals micro-particles, and analyzed their mechanical-structure effect and the surface group transform process by the surface process of the $M \geq 3.0$ shocked and the adsorbed substance with moment of dipole ≥ 2.0 . The main viewpoint as follow: (1) weak shock enable OH^- vibration to decrease and produce weakest affixation OH^- peak which without structural water such as diatomite and wollastonite. In sepiolite and palygorskite there is the split of inter OH^- and strength of the peaks related to Lewis acid site and Si-O, Si-O-Si (Al) vibration split. While there have micro-structure adjust and the change of position, volume and stability in porous minerals. (2) The powder process make minerals naked more surface group and more combined types. (3) The surface process of small polarized molecular or branch of middle size molecular may produce ionization and new coordinate bond, and change the active properties and level of original dusts. (4) SEM show the shocked powders possess lots of distortion, curve, disjunction and transfiguration and exist a obviously distortion and roughness on some surface. (5) The adsorption and stability of porous minerals decrease after being shocked. (6) The crystal cell volume of sepiolite, palygorskite and clinoptilolite reduce 2% to 15%, and that of brucite and wollastolite increase a little after shocked.