

THE COOPERATIVE JAHN-TELLER EFFECT IN RARE EARTH DOUBLE TUNGSTATE.

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Possible low temperature phase transitions, in double tungstates of rare earth elements α -KY(WO₄)₂ type, were investigated by means of different experimental technique: spectroscopy measurements, specific heat and specific heat in magnetic field, magnetostriction and magnetization. The presented experimental results show to be available the spontaneous structural phase transitions (SPT). Authors proved, that the observable of the SPT as a result of the cooperative Jahn-Teller effect (CJTE). The article shows that the cooperative Jahn-Teller effect takes place in samples content 100% the Dy³⁺ or Ho³⁺ ions. The behaviour for different physical properties is presented. As a rule, the SPT of the cooperative Jahn-Teller type takes place in high symmetry compounds. This kind of phase transitions is not very common for rare earth compounds. Particularly SPT CJTE has never been observed in rare-earth low-dimensional materials.