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EXPERIMENTAL STUDY OF EMERGENT GROUND STATE BEHAVIOUR IN RENi 5 (RE = Ce, Yb, Gd) SYSTEM

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The study of intermetallic compounds has a long history. Rare earth intermetallic compounds are systematically investigated more than 3 decades already. Polycrystalline samples (Ce,Gd,Yb)Ni 5 were prepared by different ways, where interesting physical problems were studied.
In this work we focused on competition between the effect of spin fluctuations and the possible existence of quantum criticality, a dimension response of physical properties and the response of chemical pressure on the physical properties.
First of all, structural analysis confirms required crystal structure and scanning electron microscopy shows the chemical compositions. After that, magnetic and thermal properties were performed by using several experimental techniques. The results will be displayed.
Collected experimental data show, that substitution of rare earth atoms in a compound has very important role. An interesting physical property can be observed due to acquired information.

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