

Physical Properties in Rare-earth Compounds

Suzuki Takashi

Tohoku Univ., Japan

First I will introduce our works how to improve the crystal growth technique for Rare earth pnictides and chalcogenides. All these substances have high vapor pressure and high melting point up to 3000C. Then we employ the tungsten or molybden crucibles and enclose the sample by the welding of the lid with high current electron beam. We cannot elevate the temperature up to 3000C without suitable radiation shield because rate of radiation loss rapidly increase in such a high temperature regions. There were no good radiation shield but we discovered that the p-BN could work as an excellent radiation shield after checking of the many substances.

Secondly I will show several interesting and unusual physical properties of obtained crystals under high magnetic field, high pressure and also including angle resolve photoemission spectroscopy. I will stress the properties of the low carrier concentration with strong correlation on CeP, USb and Yb4As3.

These works are carried out partly collaborated with Prof. Y.S. Kwon and Prof. S.-J. Oh.