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Crystal structure and physical properties in Fe-Te-Br[1] C.H. HO, S.C. CHEN, K.J. SYU, W.H. LEE, Department of Physics, National Chung Cheng University, W. H. LEE TEAM — Within a spin fluctuation driven scenario of superconductivity the results indicate that FeTe with doping is a likely higher-temperature superconductor. However, $Fe_{1+x}Te$ forms the same tetragonal structure with 0.06 <y <0.17. The excess Fe (2) not only stabilizes the PbO-type crystal structure with space group P4/nmm but also is strongly magnetic as an electron donor while the deficit of Fe in $Fe_{1-x}Te$ will result in the hexagonal structure with space group $P6_3/mmc$. In this work, five single tetragonal phase samples with space group P4/nmm and three single hexagonal phase samples with space group $P6_3/mmc$ have been made in Fe-Te-Br. Magnetic and electrical properties as well as the possibility of high-T_c superconductivity in the Fe-Te-Br system investigated will be discussed.

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