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/nnmm 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/nnmm 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.