## PCP4-4

### Effect of in-plane strain on transport properties of FeSe single crystals

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The band structure of iron-based superconductors is sensitive to the local crystal structure. A good example is a thin film of FeSe with epitaxial strain. From angle-resolved photoemission spectroscopy measurements, a systematic change of the band structure was observed according to the degree of in-plane strain [1]. Reflecting the band structure, superconducting transition temperature $T_c$ also shows a systematic change with in-plane strain [2]. Although a study using thin films turned out to be effective, the quality of the film varies depending on substrate materials, and compounds to which such an approach is applicable would be limited. Here we report the electronic transport properties for FeSe single crystals with applying biaxial strain. FeSe single crystals were attached on two kinds of substrates (soda-lime glass and polycarbonate sheets) using cyanoacrylate adhesives. Since each substrate material has a different thermal-expansion coefficient, different compressive strain is imposed on FeSe at low temperatures, the magnitude of which is 0.38% for glass and 0.85% for polycarbonate. The compressive strain enhances $T_c$ from 8.5 K for the strain-free sample to 13.1 K for the sample on polycarbonate, consistent with the study of the thin films [2]. We analyzed the magneto-resistance and the Hall effect at 30 K using a three-carrier model, in which one hole and two electron carriers are considered. The result for the strain-free sample is in agreement with the previous study [3]. For the samples on glass and polycarbonate, hole and electron carrier densities systematically increase with compressive strain, which means that we definitely succeeded in controlling the band structure of single-crystalline FeSe.

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