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**Single crystal growth and superconducting properties of the Bi(S,Se)<sub>2</sub>-based superconductor** TAKUMA YAMAKI, YOSHIHIKO TAKANO, National Institute for Materials Science (NIMS) — Introduction After the discovery of superconductivity in Bi<sub>4</sub>O<sub>4</sub>S<sub>3</sub> [1], much attention has been paid to synthesizing a new superconductors. The BiS<sub>2</sub>-based compounds have a layered structure similar to those of cuprates or Fe-based superconductors. In these compounds, superconducting layers and blocking layers are stacked alternatively. Many BiS<sub>2</sub>-based superconductors have been found by arranging the blocking layer so far. The modification in superconducting layer is important to clarify the superconducting mechanism of BiS<sub>2</sub>-based superconductor and the single crystal preparation is necessary to discuss such a intrinsic properties. In this study, we perform the single crystal growth of La(O,F)Bi(S,Se)<sub>2</sub> and investigate the substitution effect for the superconducting properties by replacing S with Se. Results and discussion Single crystals of LaO<sub>1-x</sub>F<sub>x</sub>BiS<sub>2-y</sub>Se<sub>y</sub> (0 ≤ y ≤ 2) were synthesized by CsCl flux method. The single crystals was plate-like shape with approximately 1 mm<sup>2</sup> in size, which is enough to perform various characteristic measurements, such as single crystal X-ray analysis and electrical resistivity measurement, and so on. We will discuss the crystal structure, electrical resistivity and magnetic properties in detail. [1] Y. Mizuguchi et al., Phys. Rev. B 86, 220510 (2012)

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