

Abstract Submitted
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Development of new layered selenide oxides with perovskite-type oxide layers KOICHI USHIYAMA, HIRAKU OGINO, KOHJI KISHIO, JUN-ICHI SHIMOYAMA — Several Fe-based superconductors with perovskite-type oxide layers, such as $\text{Sr}_2\text{ScFePO}_3$ ($T_c \sim 17$ K)^[1], were discovered in our previous study. These compounds are composed of alternate stacking of superconducting layers with antiferroite structure and perovskite-type blocking layers. Since both layers are flexible in terms of chemical composition, development of various new functional materials can be expected from this family. In the present study, we have attempted to synthesize new layered selenide oxides with CuSe layers and discovered more than ten compounds, such as $\text{Sr}_2M\text{Cu}_2\text{Se}_2\text{O}_2$ ($M = \text{Mn, Co, Ni, Cu, Zn}$) and $\text{Sr}_2M\text{CuSeO}_3$ ($M = \text{Sc, Cr, Mn, Fe, Ga, In}$), thus far. These indicated that the CuSe layer can accommodate various types of blocking layers, which may lead various functions. Among them, $\text{Sr}_2\text{Cu}_3\text{Se}_2\text{O}_2$ has a potential as for the mother compound of superconductor, if appropriate concentration of carrier is introduced to the CuO_2 layer. Crystal structure and physical properties of these newly found compounds will be reported. [1] H. Ogino *et al.*, *Supercond. Sci. Technol.* **22** (2009) 075008

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