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Crystal growth and neutron scattering studies of single crystal NaFeAs and its Co-doped superconductors MENG WANG, University of Tennessee; Institute of Physics, China, CHENGLIN ZHANG, JUN ZHAO, MIAOYIN WANG, University of Tennessee, HUIQIAN LUO, Institute of Physics, China, PENGCHENG DAI, University of Tennessee; Oak Ridge National Laboratory; Institute of Physics, China — There have been much recent interests in studying FeAs based superconductors. Although there are many families of FeAs-based materials, most work have focused on the BaFe2As2 (122) family of materials because the availability of single crystals of these materials. To expand the single crystal growth capability and compare similarities and differences between different classes of FeAs-based superconductors, we report the growth and neutron scattering studies of single crystals of 111 phase NaFeAs by the self-flux method. By using FeAs as flux, we grow NaFeAs single crystals with diameters of about 2-5mm. We discuss the detailed crystal growth method and present neutron scattering results on these single crystals.

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