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**Single crystal growth and study the physical properties of non-centrosymmetric UIrSi<sub>3</sub>** SHANTA SAHA, JOHNPIERRE PAGLIONE, Center for Nano Physics and Advanced Materials, Dept. of Physics, University of Maryland, College Park, Maryland — Heavy-fermion superconductivity in the non-centrosymmetric crystal structure has drawn much attention [1]. It is theoretically argued that the order parameter contains not only a spin-singlet part, but also an admixture of a spin-triplet state. The compound UIrSi<sub>3</sub> crystallizes in the non-centrosymmetric BaNiSn<sub>3</sub> structure which is closely related to the well-known ThCr<sub>2</sub>Si<sub>2</sub>-type [2]. Preliminary study on polycrystalline UIrSi<sub>3</sub> shows antiferromagnetic order below Neel temperature  $T_N = 42$  K [2]. Its lanthanide analog CeIrSi<sub>3</sub> shows heavy-fermion superconductivity under pressure [1]. Therefore, further investigation on UIrSi<sub>3</sub> would be meaningful. We will present our attempt to grow single crystal of UIrSi<sub>3</sub> by Czochralski method in a tetra-arc-furnace and study of its physical properties.

[1] Onuki *et al.*, J. Phys. Soc. Jpn. **77**, suppl. A 37 (2008).

[2] Buffat *et al.*, J. Mag. Mag. Mat. 62, 53 (1986).

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