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## Large single crystal growth and neutron scattering study of heavy fermion superconductor $\text{PrOs}_4\text{Sb}_{12}$

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Neutron scattering is a powerful probe for the study of strongly correlated electron systems. The field-induced antiferroquadrupolar ordering and CEF excitations under magnetic fields in the heavy fermion superconductor  $\text{PrOs}_4\text{Sb}_{12}$  were clarified by neutron scattering experiments at JRR-3 and ILL[1],[2]. The quasi-elastic response and the CEF excitations are important to reveal the mechanism of heavy fermion nature and superconductivity. Furthermore, the structure of vortex lattice gives the definitive information for the pairing symmetry.

High quality large single crystalline samples are required to proceed the systematic studies. We report the status of our effort for the sample preparation of  $\text{PrOs}_4\text{Sb}_{12}$ . Very recently, we have succeeded to grow 2 pieces of large single crystalline samples of  $\sim 10$  g. (Fig. 1(a)) We observed high quality magnetic excitation spectra with this large single crystals as shown in Fig. 1(b)

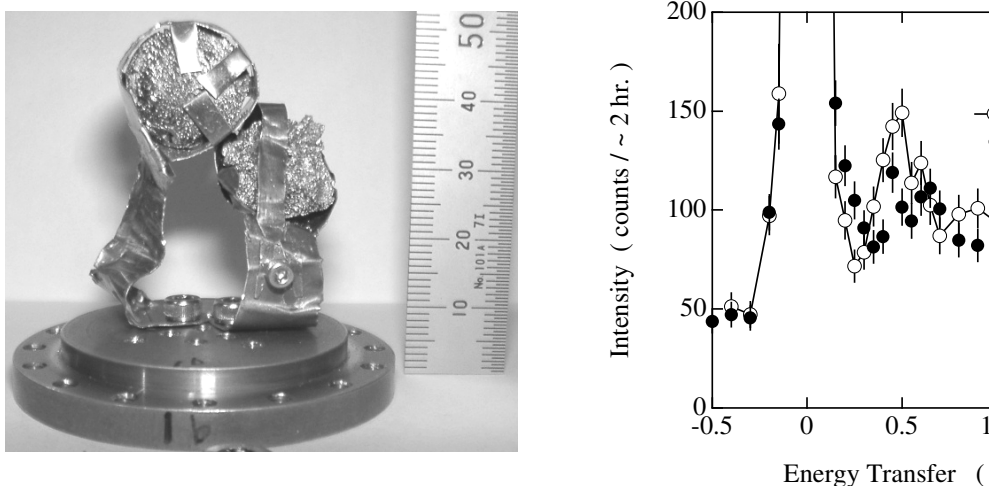


Figure 1: (a) Single crystalline sample of  $\sim 10$  g used for the neutron inelastic scattering experiments and (b) temperature dependence of neutron inelastic scattering spectra at (100).

[1] M. Kohgi *et al.*, J. Phys. Soc. Jpn. **72** (2003) 1002.

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