

K202-007

Room: 101A

Time: May 18 10:45-11:05

Neutron scattering study on amorphous ice and amorphous clathrate hydrates

Osamu Yamamuro[1]

[1] NSL, ISSP, Univ. of Tokyo

<http://yamamuro.issp.u-tokyo.ac.jp/>

Amorphous ice and clathrate hydrates of several simple guest molecules were prepared by using our homemade cryostat for vapor-deposited samples. The neutron diffraction and small-angle scattering measurements of the prepared samples revealed the structural relaxation occurring far below the glass transition temperature and cage-like local structure in amorphous clathrate hydrates, and accompanying structural ordering around second nearest neighbors and density homogenization in 3nm order. The low-energy excitations (boson peak) of both systems were found below 6meV in their inelastic neutron scattering experiments. The relation between the low-energy excitation and the ordering of the hydrogen-bonded systems was also clarified in this study.