

KENS instruments at J-PARC/MLF

H.Seto

KENS, Institute of Materials Structure Science, High Energy Accelerator Research Organization (KEK) and J-PARC/MLF

1-1 Oho, Tsukuba, 309-0801, Japan

hideki.seto@kek.jp

Abstract

Neutron Science Division (KENS) of IMSS, KEK owns 5 instruments at J-PARC/MLF for the inter-university research cooperation. The instruments are as follows:

- BL05: Neutron Optics and Fundamental Physics (NOP)

The incident beam line is divided into 3 branches; polarized-beam branch, unpolarized- beam branch, and low-divergence-beam branch. Through precise measurements of neutron decay, scattering, interference, and diffraction, new phenomena beyond the standard theory will be investigated.

- BL08: Super High Resolution Powder Diffractometer (S-HRPD)

A neutron powder diffractometer with the world best resolution by about 100 m total flight path. Complicated and hierarchical structures of newly developed materials will be determined.

- BL12: High Resolution Chopper Spectrometer (HRC)

Inelastic neutron scattering at neutron energy range from 1 meV to 2 eV will be observed with an energy resolution of 1 %%. Phonon vibration and dispersion, elemental spin and orbital excitation in magnetic systems, etc. will be investigated.

- BL16: Soft Interface Analyzer (SOFIA)

Incident neutron beam comes downward from the neutron moderator, and measurements could be done with samples kept horizontally. Structure and dynamics of surface and interface of materials are investigated.

- BL21: High Intensity Total Diffractometer (NOVA)

This instrument covers very wide-Q range with much amount of neutron detectors. The main purpose of this diffractometer is to contribute the development of hydrogen storage materials.

Additional 3 instruments, Special Environment Powder Diffractometer (SPICA), Neutron Resonance Spin Echo Spectrometers (VIN-ROSE), and Polarization Analysis Chopper Spectrometer (POLANO) are under construction or ready to be constructed.