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Recent Progress and Scientific Activities at Materials and Life Science Experimental Facility, J-PARC

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Materials and Life Science Experimental Facility (MLF) at J-PARC is a user facility providing the world highest class neutron and muon pulsed beam. As a neutron part of MLF [[1]], we are serving 20 neutron instruments to user program, which are covering various type of measuring techniques, i.e., direct/indirect geometries and spin-echo spectrometers for inelastic and quasielastic neutron scattering, single-crystal, powder, engineering and high-pressure dedicated diffractometers, a total scattering instrument, reflectometers in horizontal and vertical geometries, a small and wide angle scattering instrument, an energy resolved imaging facility, beamlines for fundamental physics studies, and so on. Also, a polarized neutron dedicated chopper spectrometer is its commissioning phase and will be on line soon. These instruments are realizing research in wide range of fields, such as fundamental physics, solid state physics, biology, chemistry and industrial applications, which are carried out by users (we had 950 unique users visited MLF in 2017) and facility staff. We are also devoting some of efforts to promoting or to enhance scientific outcome. One of examples is a deuteration laboratory program which is under way with strong help of Australian friends.

In this presentation, I will overview current status of our neutron source, neutron instruments at MLF with selected topics of recent scientific output from the facility.

Reference

[1] K. Nakajima et al., Quantum Beam Science 1, 9 (2017).

Topic

Neutron Facilities

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