

Current Status of J-PARC MLF

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Japan Proton Accelerator Research Complex (J-PARC) is co-organized by High Energy Accelerator Research Organization (KEK) and Japan Atomic Energy Agency (JAEA) and the accelerator complex consists of 400MeV Linac, 3 GeV rapid cycle synchrotron ring (RCS) and 50 GeV main ring (MR). The accelerated proton beam is injected from the RCS to the Materials and Life Science Experimental Facility (MLF) to produce neutron and muon. The MLF is investigating a wide variety of science such as hard matter, soft matter including, life science, energy materials including batteries and hydrogen adsorbing materials, engineering materials, and high pressure science using neutron and muon.

The beam power in MLF achieved at 500 kW in 2015, but due to the target trouble the MLF is now running at 150 kW with high operation efficiency more than 90 %. In the next summer shutdown the target will be replaced by a new one (#8) and the power will gradually increase from 300 kW to 500 kW.

In the neutron scattering facility there are 23 beam holes, and 19 instruments are under operation to open to general users to investigate structure and dynamics of materials in molecular level, and 2 instruments are under commissioning.

World-class scientific outputs have been already created in various scientific fields, ranging from Li-battery science to bio-molecular science. Since J-PARC is internationally open for users, we have got experimental proposals from abroad about 15% of the whole proposals. About 30% of proposals have come from industries and a half of them are proprietary use. In the presentation we will show our current status of the neutron target, neutron instruments, simple environments, some statistics in the MLF and new outcomes in science and innovation.

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