

Neutron Camera Installed in BL11 "PLANET" Beamline in J-PARC

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The neutron camera of the custom-made product by Toshiba Corp. was introduced in J-PARC BL11 "PLANET" beamline on December 22, 2011. Various examinations have been made from several years before for the introduction.

In this talk, we will present the outline of the neutron camera, and report the result of the preliminary experiment conducted using a 45MeV pulsed neutron source of Hokkaido University (Hokkaido LINAC). Although it has not realized yet to conduct neutron imaging experiment in J-PARC BL11 "PLANET" beamline using this camera because of the way of the beamline construction, it should be possible to conduct preliminary neutron imaging experiment by the presentation day. So, in addition, we will introduce the preliminary results in our beamline.

By introduction of this camera, it becomes possible to observe the various sample images under high pressure and high temperature using large-volume high pressure apparatus. Especially neutron has an advantage to detect hydrogen and water in samples, which is much different from X-ray. So our target is to see hydrogen-bearing sample by this camera. Still more, we are considering to conduct three-dimensional neutron tomography using this camera. Especially, when we use the Paris Edinburg press, it will be possible to do tomography under high pressure and high temperature. So we are also doing this kind of development.

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