Contribution ID: **400** Type: **Poster**

Development of Neutron Imaging System for Neutron Tomography at Thai Research Reactor TRR-1/M1

Wednesday 24 May 2017 15:45 (15 minutes)

The neutron imaging is a powerful non-destructive technique to investigate the internal structure and provides the information which is different from the conventional X-ray/Gamma radiography. By reconstruction of the obtained 2-dimentional images from the taken different angle around the specimen, the tomographic image can be obtained and it can provide the information in more detail. The neutron imaging system at Thai Research Reactor TRR-1/M1 of Thailand Institute of Nuclear Technology (Public Organization) has been developed to conduct the neutron tomography since 2014. The primary goal of this work is to serve the investigation of archeological samples, however, this technique can also be applied to various fields, such as investigation of industrial specimen and others. The conventional technology of neutron image recorder has been replaced by a digital camera coupled with a fluorescence screen to get a higher performance and provide more convenience. The shielding wall of neutron imaging room has been renovated and a neutron shutter has been renewed for physical and radiation safety purposes. Moreover, the new rotation stage has been designed to support the specimen turning for this system.
This research paper presents the performance study of a high-efficiency and high-resolution neutron camera manufactured by Neutron Optics and shows the obtained tomographic images. Furthermore, the updated status of the neutron imaging room renovation is described.

Author: Dr WONGLEE, Sarinrat (Thailand Institute of Nuclear Technology (Public Organization))

Co-authors: Dr KHAWEERAT, Sasiphan (Thailand Institute of Nuclear Technology (Public Organization)); Mr CHANNUIE, Jatechan (Thailand Institute of Nuclear Technology (Public Organization)); Dr LIAMSUWAN, Thiansin (Thailand Institute of Nuclear Technology (Public Organization)); Dr PICHA, Roppon (Thailand Institute of Nuclear Technology (Public Organization)); Mr RATANATONGCHAI, Wichian (Thailand Institute of Nuclear Technology (Public Organization))

Presenter: Dr WONGLEE, Sarinrat (Thailand Institute of Nuclear Technology (Public Organization))

Session Classification: Poster Presentation I

Track Classification: Plasma and Ion Physics, Nuclear and Radiation Physics