


(※本報告書は英語で記述してください。ただし、産業利用課題として採択されている方は日本語で記述していただいても結構です。)

 <b>MLF Experimental Report</b>	提出日 Date of Report
課題番号 Project No. 2014A0285  実験課題名 Title of experiment Measurement of Angular Distribution of Prompt Gamma-rays from Radiative Capture Neutron Reactions  実験責任者名 Name of principal investigator Hirohiko Shimizu 所属 Affiliation Nagoya University	装置責任者 Name of responsible person Atsushi Kimura 装置名 Name of Instrument/(BL No.) BL04 実施日 Date of Experiment 2014/06/04-2014/06/8

試料、実験方法、利用の結果得られた主なデータ、考察、結論等を、記述して下さい。(適宜、図表添付のこと)  
 Please report your samples, experimental method and results, discussion and conclusions. Please add figures and tables for better explanation.

1. 試料 Name of sample(s) and chemical formula, or compositions including physical form.
Indium foil.

2. 実験方法及び結果 (実験がうまくいかなかった場合、その理由を記述してください。)
Experimental method and results. If you failed to conduct experiment as planned, please describe reasons.
We placed a natural Indium foil at the normal sample position, which is located 21.5 m from the moderator surface, and acquired gamma-ray signals from the set of cluster germanium detectors. The pulse heights of the gamma-ray signals from individual germanium crystals were recorded as a function of neutron time-of-flight.  P-wave resonances of $^{115}\text{In}$ was observed at $\text{TOF}=594\mu\text{s}$ , which corresponds to the neutron energy of $E_n=6.85\text{ eV}$ . The saturation time of the detector deadtime for the S-wave resonance of $E_n=9.12\text{ eV}$ , which is next to the P-wave resonance, is longer than we expect, and we used thinner sample materials than that of we estimated.

## 2. 実験方法及び結果(つづき) Experimental method and results (continued)

The peaks of the gamma-ray energy signal in one of the germanium crystal (No.14) were split at the second half of the beam time. The figure shows the gamma-ray energy spectrum of seven germanium crystals located lower side of the neutron beam. We can see some extra peaks in the lowest figure.

