



実験報告書様式(一般利用課題・成果公開利用)

(※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。)

 Experimental Report 	承認日 Date of Approval 2014/6/17 承認者 Approver Masayasu Takeda 提出日 Date of Report 2014/5/22
課題番号 Project No. 2013A0227 実験課題名 Title of experiment First test of neutron reflection tomography to visualize surface and interfaces in multilayers 実験責任者名 Name of principal investigator Kenji Sakurai 所属 Affiliation National Institute for Materials Science	装置責任者 Name of Instrument scientist M. Takeda 装置名 Name of Instrument/(BL No.) BL17 実施日 Date of Experiment April 27 -29, 2013

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. A patterned layered thin film (coated by Ni and Ti on Si wafer)

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. Some preliminary experiments for visualizing surfaces and interfaces were achieved at BL17. The first beam time, on April 27-29, 2013, were spent to test the control system for the in-plane rotation angle of the sample as well as the scanning stage to measure the reflection image profile, which have been specifically added to the standard setup for ordinary neutron reflectometry. Some projection data were taken at grazing-incidence with some different in-plane angles. Though ordinary neutron reflectometry just gives average information, in principle, the technique can visualize surfaces and interfaces. Therefore, we expected some advances in the 2 nd beamtime in July, 2013. It was really a pity that the beamtime was canceled because of the accidents in Hadron Experimental Facility.

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