

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 2014/6/26 承認者 Approver Takashi Ohhara 提出日 Date of Report 2014/6/26
課題番号 Project No. 2013B0081 実験課題名 Title of experiment Magnetic structure of a single crystal of YBaCuFeO ₅ 実験責任者名 Name of principal investigator Kazuki Ohishi 所属 Affiliation CROSS	装置責任者 Name of Instrument scientist T. Ohhara 装置名 Name of Instrument/(BL No.) SENJU/BL18 実施日 Date of Experiment 2014/2/20 9:00 – 2014/2/23 9:00 2014/3/23 9:00 – 2014/3/25 9:00

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.
We have prepared for two set of single crystalline samples of YBaCuFeO ₅ . X-ray and gamma-ray diffraction measurements revealed that they are large single crystals.

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.
<p>To determine the configuration between crystal axes and neutron detectors, we have performed experiment at room temperature. Then it turned out that the crystal was not a single domain but multi-domain. We have performed X-ray and gamma-ray diffraction measurements in the same crystal before this experiment at J-PARC and found that the crystal had a single domain. However, we observed many Bragg peaks due to the multi-domain. The diffraction patterns were observed with several conditions and the beamline staffs tried to find the Bragg spot with high intensity which comes from the largest domain. But it was difficult. Then, we change the crystal and started the experiment again. But the situation didn't change. Finally, we gave up continuing this experiment.</p> <p>We would like to submit a new proposal again after we grow another single crystal.</p>

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