

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。)

 MLF Experimental Report	提出日 Date of Report 7 Aug. 2012
課題番号 Project No. 2011B0004 実験課題名 Title of experiment Mu emission from alkali-metal coated tungsten surfaces 実験責任者名 Name of principal investigator Yasuyuki Nagashima 所属 Affiliation Tokyo University of Science	装置責任者 Name of responsible person Yasuhiro Miyake 装置名 Name of Instrument/(BL No.) D2 実施日 Date of Experiment 6 Feb., 8 Feb., 16-18 Feb. (5 days)

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.

<p>1. 試料 Name of sample(s) and chemical formula, or compositions including physical form.</p> <p>The sample was a polycrystalline tungsten foil. It was heated up to 1800K in vacuum. After cooling down to room temperature, Na was deposited on the tungsten surface.</p>
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<p>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> <p>Figure 1 shows the experimental system. Muon beam was guided to the tungsten foil which was heated up to 1800K by the passage of an electric current. Emission of muonium from the heated tungsten was monitored using two scintillator arrays. The signals detected by the arrays were traced back to determine the position of the muon decay. The muon lifetime spectra for the several regions of the muon decay positions were accumulated and the signals from muonium decay were searched. Unfortunately, the undulation of the spectra due to the magnetic field produced by the current for heating up the tungsten prevented from identification of the muonium signals.</p> <p>We also cooled down the tungsten and Na was deposited. The muon lifetime spectra were accumulated and the signals from muonium decay were searched. However, we could not identify clear signals from muonium decay.</p>

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

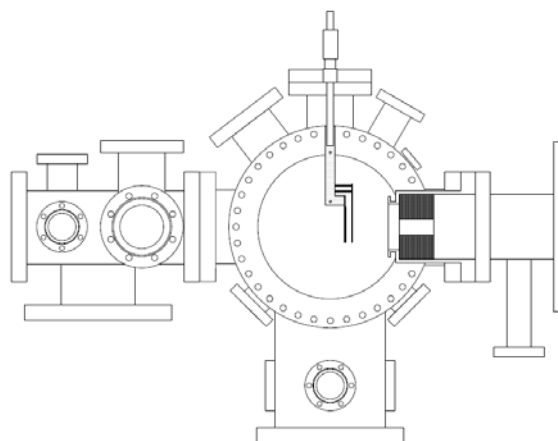


Figure 1. Schematic diagram of the apparatus for the observation of Mu emitted from tungsten surface.