

課題番号 : F-17-NU-0090
利用形態 : 技術相談
利用課題名(日本語) :
Program Title (English) : Chiral domain wall driven by current in the presence of external AC magnetic field in perpendicularly magnetized magnetic nanotracks
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キーワード/Keyword : 成膜・膜堆積, 電気計測, Co/Ni, Co/Pt

1. 概要(Summary)

Racetrack memories, which utilize spin-polarized current to move the domain walls in the magnetic nanowire, have been proposed as a new non-volatile memory device which offers storage density higher than the conventional solid-state memory and also offers read/write performance much better than the hard disk drive. From our latest simulation, we found the interesting domain wall motion behavior in the magnetic nanowire with strong Dzyaloshinskii-Moriya interaction. We asked Nanofabrication Platform Nagoya University to fabricate magnetic thin films with special layered structures and to characterize the magnetic properties of the thin films.

The technical staffs of the Nanofabrication Platform, Nagoya University, responded that it is possible to fabricate and characterize the thin films, however, a TaN target will be necessary to prepare before the sputtering, since they do not have that target. We decided to carry out the simulation of the magnetic thin films to replace TaN to other materials in stock, such as Ta, and if we find an alternative structure, we will contact them again to prepare the new magnetic thin films.

2. 実験(Experimental)

< 技術相談のため概要のみ記載。以下、空欄。 >

3. 結果と考察(Results and Discussion)

< 技術相談のため概要のみ記載。以下、空欄。 >

4. その他・特記事項(Others)

None

5. 論文・学会発表(Publication/Presentation)

None

6. 関連特許(Patent)

None