

Tuning magnetic properties of nanostructures

My research interest is mainly focused on the fabrications and characterization of hetero nanostructure, especially on the explorations of their spintronic applications. We have carried out various material interfaces, such as: metal/oxide, metal/silicide, metal/organic semiconductor, etc. By employing electric field, photons, or gas adsorption, we are interested in developing practical methods tuning magnetic properties of nanostructures.

Techniques used in study

Surface magneto-optic Kerr effect; scanning tunneling microscopy; atomic force microscopy; Auger electron spectroscopy; x-ray photoelectron spectroscopy; low-energy electron diffraction; ultrahigh vacuum; electrochemical treatments; cyclic voltammetry.

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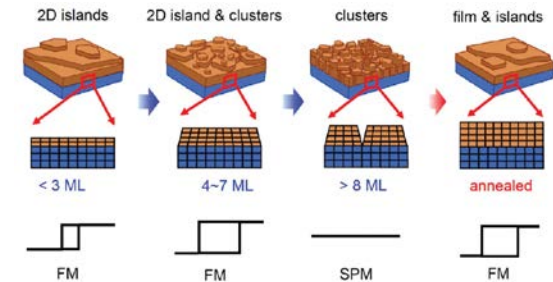
Background:

PhD in Physics, National Taiwan Normal University, Taipei, Taiwan
Visiting scholar (Alexander von Humboldt Foundation), Bonn University, Germany

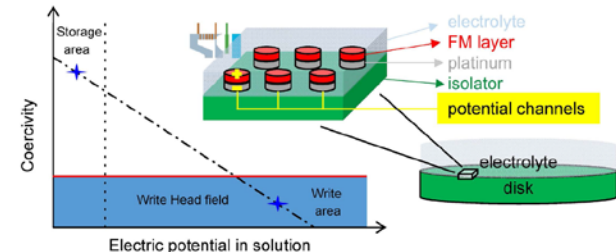
Funding:

Ministry of Science and Technology of Taiwan
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A practical method for fabricating superparamagnetic films



Tuning coercive force by adjusting electric potential in solution processed Co/Pt(111)



Publications

- Pei-Cheng Jiang, Cheng-Hsun-Tony Chang, Chen-Yuan Hsieh, Wei-Bin Su, and Jyh-Shen Tsay*, 2020, "A practical method for fabricating superparamagnetic films and the mechanism involved", *Nanoscale*, 12, 14096-14105.
- Yen-Wei Jhou, Cheng-Hsun-Tony Chang, Siang-Yu Sie, Chun-Kai Yang, Chen-Yuan Hsieh, Chih-Ming Lin, and Jyh-Shen Tsay*, 2020, "Comparisons of magnetic defects and coercive forces for Co/Si(100) and Co/rubrene/Si(100)", *Phys. Chem. Chem. Phys.* 22, 14900-14909.

