

XIAOFENG JIN SPECIAL LECTURE

Generation and Detection of Pure Spin Current in an H-shape Structure of a Single Metal

DATE

August 27th, 2018

14:00-

VENUE

3rd floor, Lecture Theater
in TOKYO ELECTRON
House of Creativity,
Katahira Campus

Distinct from all the existing methods for determining spin Hall angle with bilayers, we have developed a new approach based on the mesoscopic H-shape structure, which generates and detects pure spin current in a single metal. Using this approach we have unequivocally addressed the long-standing controversy of the magnitude of the spin Hall angle of gold. By exploiting the long spin diffusion length of Cu and the large spin-orbit coupling of Bi, we have realized very large spin Hall effect in 10 nm Cu films δ -doped with 0.15 nm of Bi. This new artificial material can generate a large spin orbit torque to switch an adjacent Fe layer. We have thus demonstrated new artificial materials with simultaneously large spin Hall angle and long spin diffusion length.

CONTACT

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