

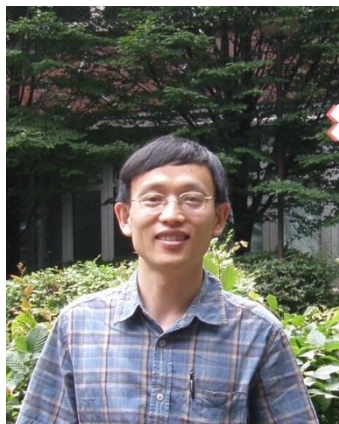


Seminar

Pure spin current propagating in and detected by molecules

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Time: 3:30pm, Nov. 13, 2017 (Monday)

时间: 2017年11月13日 (周一) 下午3:30

Venue: Room W563, Physics building, Peking University

地点: 北京大学物理楼, 西563会议室

Abstract

The Hanle effect is the most important proof of spin injection in a medium. It was claimed to be discovered in the pure spin current transport through polymers in 2014,^[1] evidencing by an unusual angular dependence of the inverse spin Hall effect (ISHE). We found that this unusual angular dependence, however, appears when the microwave magnetic field is neither fully perpendicular to nor fully within the sample plane. This result excludes the presence of the Hanle effect. In the second part of the presentation, we clarify the physical origin of the dc voltage generation in a bilayer of a conducting polymer film and a micrometer-thick YIG film under the ferromagnetic resonance and/or spin-wave resonance condition. The previous attributed mechanism, the ISHE in the polymer,^[2] is excluded by two control experiments. We demonstrate that the dc voltage is caused by the Seebeck effect in the polymer induced by the nonreciprocal magnetostatic surface spin wave propagation in YIG.

1. S. Watanabe, K. Ando, K. Kang, S. Mooser, Y. Vaynzof, H. Kurebayashi, E. Saitoh, and H. Sirringhaus, *Nat. Phys.* **10**, 308 (2014).
2. K. Ando, S. Watanabe, S. Mooser, E. Saitoh, and H. Sirringhaus, *Nat. Mater.* **12**, 622 (2013).

About the speaker

吴镒。分别于1997年和2001年获得复旦大学物理学系理学学士学位和凝聚态物理专业博士学位。研究生期间曾到香港科技大学和德国Max-Planck微结构物理研究所短期访问。分别在美国犹他大学和加州大学河滨分校物理系先后从事博士后和助理专家研究。2007年后到南京大学工作。主要开展自旋电子学的研究。曾获得“新世纪优秀人才支持计划”和“优秀青年基金”支持。