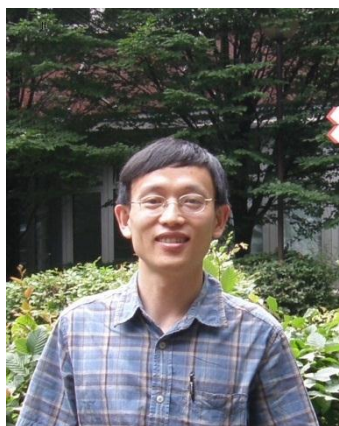




Pure spin current propagating in and detected by molecules



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

2017 11 13

3:30

**Venue: Room W563, Physics building, Peking University
563**

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).

1997 2001

Max-Plank

2007