

## Topological Spin Seebeck Effect in Topological Insulator/Magnetic Insulator Heterostructures

Jing Shi, *University of California, Riverside*

Spin-momentum locked surface states in topological insulators plays a unique role in the magnon-electron relaxation process which results in efficient spin-charge voltage conversion. We demonstrate this effect in heterostructures of topological insulator,  $(\text{Bi}_x\text{Sb}_{1-x})_2\text{Te}_3$ , and magnetic insulator yttrium iron garnet under a temperature gradient. An unusually large spin Seebeck response is found as the Fermi level of the topological insulator is tuned into the band gap where the topological surface states dominate the transport. I will present our experimental results and interpretation in my talk.



**BIO:** Jing Shi is a professor in the Department of Physics and Astronomy of the University of California, Riverside and the Director of the DOE Energy Frontier Research Center on Spins and Heat in Nanoscale Electronic Systems (SHINES). He received his Ph.D. in Physics from the University of Illinois at Urbana-Champaign in 1994 and joined Motorola's Corporate Research Labs in Tempe, Arizona working on the research and development of MRAM in 1996. He became an associate professor at the University of Utah in 1999 and has been a full professor at UC Riverside since 2005.