TCSUH Special Seminar

Two-dimensional Thermoelectric Materials

Monday, August 7, 2017

HSC 102: 2:00PM – 3:30PM

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HOST: Dr. Z. Ren

ABSTRACT:

Thermoelectric materials, which can directly convert thermal energy to electricity, have been investigated widely as clean and sustainable energy materials. However, new thermoelectric materials with earth abundant and less toxic elements are required for large-scale applications. Two-dimensional materials, which have attacted great attention in the last decade due to their exotic physical and chemical properties, provide an exciting wonderland to discover novel thermoelectric materials. Herein, I will present our recent results on several two-dimensional materials, including MoS_2, WS_2, SnSe and GeSe. Different strategies, such as doping, nanosturcturing and alloying, have been sucessfully applied to improve the thermoelectric performance of these materials. Finally, I will discuss the connection between surface science and thermoelectric devices.

BIOGRAPHY:

Peng Jiang pursued bachelor degree (1998-2002) from Shandong University and Ph.D. degree (2002−2007) from Institute of Physics, Chinese Academy of Sciences (CAS). After 4 years of postdoctoral research (2007−2011) in Lawrence Berkeley National Laboratory, he joined Dalian Institute of Chemical Physics (DICP), CAS in 2011 and was promoted to full professor in 2012. His current research interest is thermoelectrics and surface science.

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