

# TcSUH BI-WEEKLY SEMINAR

## Prof. Zhifeng Ren

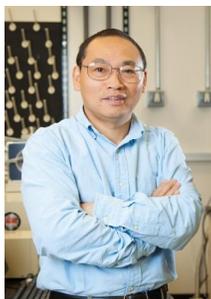
M. D. Anderson Chair Professor of Physics; Director,  
Texas Center for Superconductivity at the University of Houston

**Thursday, August 29, 2019**

Room 102, Houston Science Center

12:00 p.m. – 1:00 p.m.

## Challenges and Solutions to Energy Needs



**ABSTRACT:** Energy conversion, transport, and storage are some of the most challenging issues facing the world. How can we effectively convert energy between heat and electrical power? What is the best way to store the electrical energy? How do we cool the hot spots of the future power electronics? How do we create desalination to get pure water? In this talk, I will discuss our studies on water splitting to generate hydrogen, high performance thermoelectric materials for cooling and power generation, and also extremely high thermal conductivity (higher than  $1200 \text{ W m}^{-1} \text{ K}^{-1}$  at room temperature) to move the large amount of heat from the hot spot of electronic devices.

**BIO:** Zhifeng Ren, Ph.D., is an M. D. Anderson Chair Professor of Physics at the University of Houston, and the director of the Texas Center for Superconductivity at the University of Houston (TcSUH). He received the B.S. degree from Xihua University in 1984, M.S. degree from Huazhong University of Science and Technology in 1987, and Ph.D. degree from the Institute of Physics, Chinese Academy of Sciences in 1990. He has published more than 500 peer-reviewed journal papers and was awarded with more than 55 patents. He was ranked 49th of Materials Scientists among the 500,000 in the world based on impact of papers published in the decade from 2000 to 2010. He is listed as a 2018 Highly Cited Researcher in Physics. He received the 2008 R&D 100 Award, the 2014 Edith and Peter O'Donnell Award in Science from The Academy of Medicine, Engineering & Science of Texas (TAMEST), and the 2018 Humboldt Research Award from the Alexander von Humboldt Foundation. He was elected an APS fellow (2004), AAAS fellow (2005), and fellow of the National Academy of Inventors (2013).

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in attending this lecture should call 713-743-8213 as soon as possible.**