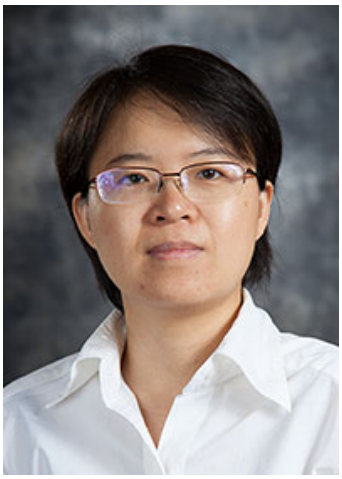
# TcSUH Bi-Weekly Seminar

## Understanding Materials with In Situ Transmission Electron Microscopy




### Prof. Shuo Chen

Assistant Professor of Physics, Dept. of Physics, and TcUH PI


**Thursday, January 17, 2019**

Room 102, Houston Science Center
12:00 p.m. – 1:00 p.m.


**Abstract:** Materials' properties are determined by their structures. Transmission electron microscopy (TEM) has been a powerful tool to provide detailed structural information of materials down to atomic level. Moreover, researchers are keen to study the structures of materials under dynamic and operational conditions. Consequently, "Seeing is believing" has motivated the development of in situ TEM. Various stimuli, such as mechanical force, electrical field, and elevated temperatures have been incorporated into TEM and enabled the in situ capabilities. In this presentation, I will introduce the principle of TEM and development of in situ TEM. I will present our in situ TEM work on carbon nanotubes, $TiO_2$ nanotubes, and $Sb_2Te_3$ nanoparticles, etc. to elucidate our in situ TEM capability on electronic and battery materials. I also welcome your inputs on potential projects to best utilize our in situ TEM.


**Bio:** Dr. Chen is an assistant professor in the Department of Physics at the University of Houston. She obtained her B. S. in Physics from Peking University in China in 2002 and then Ph. D. in Physics from Boston College in 2006. Her research focuses on materials physics, especially synthesis and in situ electron microscopy of nanostructural materials for energy conversion and storage, such as thermoelectric materials, electrocatalysts, and batteries. Dr. Chen has published more than 100 papers with an H index of 46. Dr. Chen is the recipient of the Robert A. Welch Professorship.

***Persons with disabilities who require special accommodations to attend this lecture should call (713) 743-8213.***