



PHYSICS COLLOQUIUM: Electronic Properties of Novel Materials – Photovoltaic, 2D Magnetic, and Topological Materials

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Date:

2/5/2021

Time:

10:30 AM-11:50 AM

Link:

Please email
snsgradstaff@ucmerced.edu
for Zoom link and passcode.

About The Speaker:

Chien received BS from National Taiwan Normal University in 2001. Then he moved to University of Tennessee, Knoxville, for Ph. D study and obtained the Ph. D degree in 2009 under the supervision of Prof. Ward Plummer. Soon after that, Chien worked in Argonne National Lab under Dr. John Freeland and Dr. Nathan Guisinger as a postdoc researcher between 2009-2011; and worked in Northwestern University under Prof. Mark Hersam as a postdoc researcher between 2011-2013. Starting 2013, Chien joined University of Wyoming as a tenure-track Assistant Professor and promoted to Associate Professor in 2019.

Abstract:

Electronic properties, such as the electronic band structures and the density of states, of a material are at the center of understanding the physical properties. For examples, it is directly related to the optical properties, magnetic properties, and transport properties of the materials. Thus, the understanding of the electronic properties provide the fundamental basis of understanding the materials of interests. In this talk, I would like to share the results of our recent and on-going works focusing on three material categories: (1) photovoltaic materials (organic photovoltaic, and organometallic halide perovskite materials); (2) magnetic materials (CrBr₃, Eu-Si nanowires, and EuO); and (3) topological materials (EuO, and 2M-WS₂). Scanning tunneling microscopy and spectroscopy (STM/S) is the main tool used to provide the nm-scale understanding of the electronic properties.

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