



Friday February 7th, 2014
4:10 – 5:00 pm, EPS108

“Sr_{2-x}VMoO_{6-y} Double Perovskites: a New Generation of SOFC Anodes”

Dr. Nick Childs, MSU Physics

Abstract:

Fuel cells are an attractive power source due to their ability to efficiently convert chemical energy stored in fuel directly into electricity. The high operational temperature of Solid Oxide Fuel Cells (SOFCs) allows for the ability to reform hydrocarbons at the anode providing for fuel flexibility, an advantage over other types of fuel cell technologies. However, the high operational temperature of SOFCs places limitations on materials selection. An investigation into the limitations of the currently used anode cermet material and the electrical properties of an alternate perovskite material, Sr(2-x)VMoO(6-y), will be discussed. The measured electrical conductivity for this new material is 1.5 to 3 times that of the current state of the art anode material, Ni-YSZ, in a reducing atmosphere at 850 oC. The measured values also make it a candidate for having the highest electrical conductivity of any known oxide at room temperature.

Host:

Jiong Qiu

******Refreshments served in the EPS second floor lobby at 3:45******