TRENT UNIVERSITY
PHYSICS & CHEMISTRY SEMINAR PROGRAM

WEDNESDAY, SEPTEMBER 30, 2015

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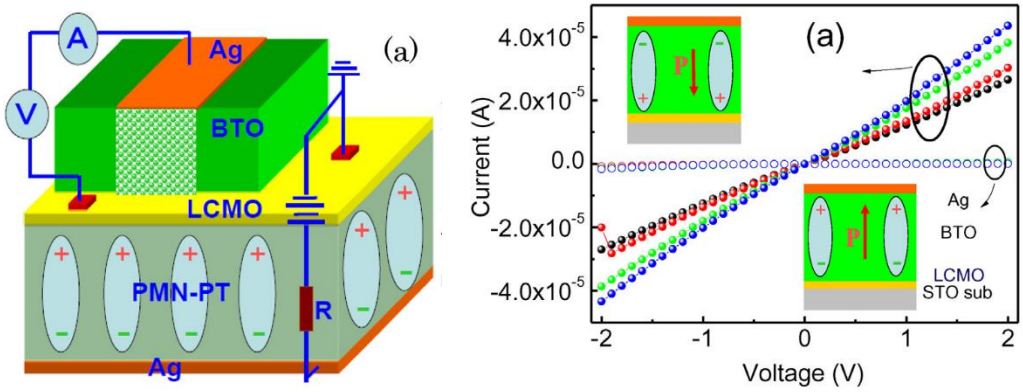
Polarization Related Resistive Switching in Ferroelectric Thin Films Capacitors

ABSTRACT

Resistive switching (RS) effects based on a correlation between ferroelectric polarization and conductivity might become of particular interest for nonvolatile memory applications, because they are not subjected to the scaling restrictions.

Dr. Wang will report on RS behaviors observed in his group of the past 3 years that is modulated by a reversal of ferroelectric polarization in heterostructures comprising of a ferroelectric layer and a semiconducting manganites film. Furthermore, employing field-effect structure with ferroelectric PMN-PT as substrate, they found that the resistive switching behaviors could be tuned *in-situ* by modulating the concentration of the carriers in the semiconductoring manganites layer. Possible mechanisms are discussed on the basis of the interplay of bound ferroelectric charges, charged defects in ferroelectric layer and mobile carriers in manganite layers. The giant RS effects observed may be of significance for memory devices by combing electronic conduction with magnetic, spintronic, and optical functionalities.



Dr. Shouyu Wang, (E-mail: shouyu.wang@yahoo.com), Ph.D Chinese Academy of Science 2005. His research has mainly focused on Multiferroic and ferroelectric thin films and ceramics, including growth, structural characterization, physical properties and device developments.

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All Welcome!