



Title: Noise signatures in novel correlated systems

Abstract: Correlated electron materials exhibit interesting electronic and magnetic phenomena as a result of the interplay of various degrees of freedom and this interplay gives rise to an array of potential applications from Mott-FET to magnetic storage. Electrical transport and conductivity fluctuation measurements in pure, single crystalline materials and devices help us understand the microscopic charge transport mechanisms within competing ground states as the phase diagram of these materials are explored. In this talk, experimental results from transport and conductivity noise measurements across metal-insulator and Neel transitions in a series of novel correlated materials will be presented.

Biosketch: Sambandamurthy Ganapathy graduated in 2000 from the Indian Institute of Science with a Ph. D. in experimental condensed matter physics. He then joined the Weizmann Institute of Science as a post-doctoral fellow in Professor Shahar's group to explore superconductor-insulator phase transitions in ultra-thin films. In 2004, he moved to the USA as a joint post-doctoral fellow in the groups of Professor Tsui (Princeton University) and Dr. Engel (National High Magnetic Field Laboratory) to study spectroscopic signatures across novel quantum Hall phases in semiconducting nanostructures. In 2006, he joined as an assistant professor in the Department of Physics, University at Buffalo (SUNY) where he is currently a professor and the department chair. His research group explores electrical transport in novel materials and quantum systems. He is the recipient of Sir Charles Clore fellowship award in Weizmann Institute and also the National Science Foundation's CAREER award in the USA.