



Yale Institute for Nanoscience
and Quantum Engineering

SPECIAL YINQE SEMINAR

Friday- February 15, 2013

12:00 to 1:00 p.m.

Becton Seminar Room

Light lunch will be served at 11:45 a.m.

Zhenqiang Ma

University of Wisconsin-Madison

“Transferrable semiconductor nanomembrane: its history, present and future”

Rigid semiconductors have dominated electronics industry and have changed our life for several decades. While they offer superior performance and high packing density, the rigidity often makes them hard to be implemented in many applications, such as very large-area, conformal, easy-to-bend and space-limited systems, and particularly bio-implantation systems. Traditional flexible electronics employing organic semiconductors, amorphous and polycrystalline silicon can fulfill some of these applications, but lacking the high performance that is needed in many of the advanced systems. Single-crystalline semiconductor nanomembranes that are released from various semiconductors are mechanically bendable, stackable, strainable, transferrable and conformal to any flexible and rigid substrates, with equivalent electronic properties as their bulk counterparts. These unique properties of semiconductor nanomembranes provide us with the unprecedented opportunities to develop a wide range of new types of electronic devices for micro/nano/power electronics, way beyond flexible electronics, but optoelectronics, photonics and energy conversion devices etc. In this talk, I will present our recent research in some of these areas after briefly outlining the overall research program currently on-going in my group. Future research directions along the various paths will be outlined.

HOST: T.P Ma