Fall 2013 Course Announcement

EEE 598 ADVANCED PHOTOVOLTAICS

Professor Meng Tao (meng.tao@asu.edu)

Solar energy will no doubt become our main source of energy by the end of this century, but how big a role will photovoltaics play in this new energy infrastructure? There are fundamental bottlenecks for current photovoltaic technologies to become a noticeable source of energy: material availability, energy input, cost, efficiency, and even public acceptance of the unpredictable energy source. This course will explore some of these bottlenecks and focus on potential solutions. Example topics to be covered include: The grand energy challenge. Wafer silicon photovoltaic technology. III-V tandem cells. Efficiency limits. Resource limitations to terawatt photovoltaics. Earth-abundant materials for photovoltaics. Terawatt low-cost wafer silicon photovoltaics. It is intended to expose students to some of current focuses in photovoltaic research and commercialization.

Prerequisite: Entry-level course on solid-state electronics or photovoltaics such as EEE 498 Solar Energy, EEE 352 Properties of Electronic Materials, or EEE 436 Fundamentals of Solid-State Devices

Time: Tuesdays and Thursdays 9 – 10:15 am