



SOLAR QUEST

SEMINAR ANNOUNCEMENT

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ENERGY RELATED APPLICATIONS OF GROUP III-NITRIDE MATERIALS

DATE: Wednesday, February 17, 2010

TIME: 15:30 pm – 16:30pm

PLACE: Lecture Room, Building 4, 2nd Floor

ABSTRACT

Group III-nitride semiconductors and their alloys have become an increasingly important part of the optoelectronic and electronic industry. It has been generally accepted for more than 20 years that the band gaps of the nitrides cover the spectral range from red in InN to deep ultraviolet in AlN. I will present results of our work showing that the energy gap of InN is only 0.64 eV expanding the range of the nitride band gaps into infrared part of the spectrum. This discovery offered an interesting opportunity of using group III-nitride alloys for multijunction solar cells. I will discuss the progress on the synthesis of group III-nitride alloys in the whole composition range and challenges in controlled doping of In-rich alloys. Most recent results on the design and performance of InGaN/Si hybrid solar cells will be presented and the prospects of using band gap engineering for new photovoltaic and photoelectrochemical solar power conversion devices will be discussed.

Solar Quest Host: Assoc. Prof. Yoshitaka Okada, ext. 56501

