2007 NAMBE AWARDS

NAMBE BEST STUDENT PAPER AWARDS

Best Student Talk (T16) at 2006 NAMBE, Duke University
Joshua M.O. Zide, D.O. Klenow, S. Stemmer, G. Zeng, J.H. Bahk, W. Kim, S.L. Singer, D. Vashaee, Z.X. Bian, R. Singh, J.E. Bowers, A. Majumdar, A. Shakouri, and A.C. Gossard, "MBE growth of semimetallic ErAs nanoparticles epitaxially embedded within InGa(Al)As-based structures for efficient thermoelectric power generation" (Joshua is from University of California Santa Barbara)

Best Student Poster (P18) at 2006 NAMBE, Duke University
Brian Collins, L. He, F. Tsui, Y. Zhong, S. Vogt, and Y. Chu, "Effects of complementary doping on structure and magnetism of Co and Mn co-doped Ge magnetic semiconductor epitaxial films" (Brian is from the Univ of North Carolina)

2007 MBE INNOVATOR AWARD

Professor Norman K. Y. Cheng made extraordinary contributions to the research and development of molecular beam epitaxy technology for semiconductor heterostructure device applications including the invention of rotating substrate holder, the demonstration of the first GaInAs/AlInAs high electron mobility transistors (HEMT), and the formation of the first III-V-dilute nitride semiconductor alloy. In 1979, he joined Dr. A. Y. Cho's group at Bell Laboratories, Murray Hill, NJ, where he began research in MBE technology. His research led to the development of rotating substrate holder for extremely uniform MBE growth, which has become an indispensable component of MBE systems and is now a standard feature of every production MBE system. He developed materials technologies necessary for the rapid development of GaInAs/AlInAs HEMT technology. He first demonstrated the enhancement of electron mobility in modulation doped GaInAs/AlInAs/InP heterostructures and made the first GaInAs/AlInAs HEMT. Since 1987, he has been with the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign. At Illinois, he first demonstrated the formation of a dilute nitride III-V-N compound semiconductor alloy in which he also discovered a new phenomenon of a rapid band gap energy decrease with increasing nitrogen content. He invented a strain engineered growth technique, the strain-induced lateral layer ordering process, to form high-density nano-scale quantum wires for laser and IR photodetector applications. Recently, his group demonstrated the world fastest double heterojunction bipolar transistor (f_T ≥670GHz) using GaAsSb/InP type-II heterostructures.

2007 NAMBE YOUNG INVESTIGATOR AWARD

Sanjay Krishna is an Associate Professor of Electrical and Computer Engineering at the Center for High Technology Materials at University of New Mexico. Dr. Krishna was selected for his "contributions to the MBE growth and development of mid-infrared focal plane arrays using self-assembled quantum dots in a well (DWELL) design." Sanjay received his Masters in Physics from the Indian Institute of Technology, Madras in 1996, MS in Electrical Engineering in 1999 and PhD in Applied Physics in 2001 from the University of Michigan, Ann Arbor. He joined the University of New Mexico as a tenure track faculty member in 2001. His present research interests include growth, fabrication and characterization of self-assembled quantum dots and type_II InAs/InGaSb based strain layer superlattices for mid infrared detectors. Dr. Krishna received the Gold Medal from IIT, Madras in 1996. He received the best student paper award at the 16th NAMBE Conference in Banff in 1999, the 2002 Ralph E Powe Junior Faculty Award from Oak Ridge Associated Universities, the 2003 IEEE Outstanding Engineering Award, 2004 Outstanding Researcher Award from the ECE Department, the 2005 School of Engineering Junior Faculty Teaching Excellence Award and 2007 NCMR-DIA Chief Scientist Award for Excellence. Dr. Krishna has authored/co-authored more than 40 peer-reviewed journal articles, over 40 conference presentations, two book chapters and has one issued and five pending patents.