UNIVERSITY of HOUSTON

TEXAS CENTER FOR SUPERCONDUCTIVITY

TcSUH BI-WEEKLY SEMINAR

Prof. Jae-Hyun Ryou

Associate Professor, Department of Mechanical Engineering
Materials Science and Engineering Program
Texas Center for Superconductivity at the University of Houston (TcSUH)
Advanced Manufacturing Institute (AMI)

Thursday, February 21, 2019

Room 102, Houston Science Center
12:00 p.m. – 1:00 p.m.

RSVP for sandwich/chips: bdherndo@central.uh.edu

Multifunctional Flexible Semiconductor Materials and Devices for Photonic, Electronic and Energy Applications

ABSTRACT: The presentation will cover various topics of flexible photonic, electronic, and energy devices based upon Group IV and III-V semiconductors and their structures, including (1) direct growth of high-quality single-crystal-like semiconductor thin films on low-cost flexible metal tapes such as GaAs, Si, and GaN, (2) flexible high-performance photovoltaic solar cells, thin-film transistors, and high-electron-mobility transistors on the metal tapes, (3) multi-functionality of flexible Group III-nitride heterostructures and their electronic and photonic devices, and (4) piezoelectric generators and sensors for self-powered wearable systems.

BIO: Jae-Hyun Ryou received the B.S. and M.S. degrees in metallurgical engineering from Yonsei University, Seoul, Korea, and the Ph.D. degree in materials science and engineering in the area of solid-state materials from the University of Texas at Austin. Before joining University of Houston, he had several R&D positions in both industry and academia, with Honeywell Technology Center (HTC) and Honeywell VCSEL Optical Products, Plymouth, MN, as a Research Scientist and with the Center for Compound Semiconductors at the Georgia Institute of Technology, Atlanta, as a Principal Research Engineer. With research interests in semiconductor materials, nanostructures, and quantum devices, he has been developing new-concept material structures and devices for photonic, electronic, and energy applications through materials/device structure modeling/design, epitaxial materials growth by chemical vapor deposition and physical vapor deposition, and fabrication process innovations. He has authored or coauthored 6 book chapters of books, ~200 technical journal papers, and ~250 conference presentations, and holds 9 U.S. patents. He is a member of the Materials Research Society (MRS) and a senior member of the Institute of Electrical and Electronics Engineers (IEEE) and the Optical Society of America (OSA) and. He served as an associate editor of Optics Express (fields of solid-state lighting and photovoltaics) of the OSA.

Persons with disabilities who require special accommodations in attending this lecture should call 713-743-8213 as soon as possible.