SPIE KAUST student chapter
annual report
Officers

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Vice President: Ting-You Li (tingyou.li@kaust.edu.sa)
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Current student members

- Chun-Ho Lin
- Ting-You Li
- Kang-Ting Ho
- Hui-Chun Fu
- Aditya Prabaswara
- Juan Sebastian Totero Gongora
- Hassan Oubei
- Kuan-Sheng Ho
- Nasir Alfaraj
- JianWei Liang
- Edgars Stegenburgs
Activities

- **12.03.2015** International Year of Light at KAUST
- **01.30.2016** SPRING GROUP EXPO
- **01.31.2016** Seminar and Breakfast Meeting with Prof. Gabriel Rebeiz
- **02.25.2016** Salon talk with Professor Mei-Yin Chou
- **03.16.2016** Forum with Dr. Shu-jen Han
- **04.21.2016** Seminar and salon meeting with Prof. QiangFei Xia
- **05.20.2016** Seminar and lived experience forum with Prof. Jer-Shing Huang
- **06.21.2016** Salon talk with Prof. Yuhwa Lo
The International Year of Light (IYL) Open Day event took place at KAUST on **December 3, 2015**. The event was designed to celebrate light’s impact on human welfare as well as the importance of light as one of the most challenging field of research in contemporary science. The Open Day Exhibition showcased the latest technological developments in light research, with special emphasis on photonics and LED-based technologies and the innovative applications that they will bring to the energy and communication sectors in the future.

SPIE KAUST student chapter also present the conceptual design as well as the realization of the scientific route the alternated posters, videos and experimental stations about light research.
2015 International Year of Light at KAUST
12.03.2015 International Year of Light at KAUST
The Expo features:

- Graduate student groups
- Services on campus
- Launch of new App for Student Life Forum
- Launch of new Facebook site for graduate students
01.31.2016 Seminar and Breakfast Meeting with Prof. Gabriel Rebeiz

DR. Gabriel Rebeiz is Distinguished Professor and Wireless Communications Industry Endowed Chair at UCSD: IEEE Fellow, Kuwait Prize for the Advancement of Science, IEEE Daniel Nobel Field Award, NSF Presidential Young Investigator, URSI Koga Gold Medal, MTT Microwave Prize (twice), MTT Distinguished Educator, IEEE Antennas and Propagation John D. Kraus Award and the Harold Wheeler Award, Amoco Teaching Award given to the best undergraduate teacher - University of Michigan, Jacobs ECE Teacher of the Year at UCSD.
Research Interests

The objectives of our research have been to investigate the electronic structure of condensed matter, and to study its effects on the structural and dynamical properties of materials. For systems with translational symmetry, calculations are performed from first principles with no adjustable parameters. This has been made possible by advances in computational methods developed in the past decades. When these first-principles calculations are not feasible in some larger and more complicated systems, model calculations are used to identify the important features. The purposes of these studies are to provide unambiguous explanations for various interesting phenomena observed experimentally in clusters, solids, and surfaces, and to make reliable predictions of new material properties from microscopic quantum theories.

Our theoretical efforts can be classified into two categories: (1) the study of the electronic and dynamical properties of technologically important materials, and (2) the development of new algorithms and calculational methods in studying materials properties using quantum mechanics. Detailed descriptions of specific projects are:

Honors and Awards:

Alfred P. Sloan Research Fellowship, 1990-92
David and Lucile Packard Fellowship, 1990-95
Presidential Young Investigator Award, National Science Foundation, 1991-96
Sigma Xi Young Faculty Award, Georgia Institute of Technology, 1993
Institute Fellow, Georgia Institute of Technology, 1994-99
Fellow, American Physical Society, 2002
ADVANCE Professor of Science, Georgia Institute of Technology, 2002-06
College of Sciences Ralph and Jewel Gretzinger Moving Forward School Award, 2009
03.16.2016 Forum with Dr. Shu-jen Han

Dr. Shu-Jen Han is a manager and Research Staff Member at the IBM T. J. Watson Research Center. He holds a Ph.D. in Materials Sci. & Eng. and Ph.D. minor in Electrical Engineering from Stanford University (2007), and a B.S. from National Tsing-Hua University, Taiwan. His Ph.D. work addressed increasing need for low cost medical diagnostic tools with high sensitivity for point-of-care testing. The developed magnetic biochip technology has been successfully employed in many applications, such as HPV genotyping, multiplex proteomics, and protein kinetics study, and became a core technology of a VC-funded startup. His current research activities encompass the heterogeneous integration using low-dimensional carbon nanomaterials to develop novel nanodevices and circuits. His strong determination of pushing nanoelectronics beyond preliminary device level into circuit and system level allows the demonstrations of the most advanced graphene integrated circuit as well as large-scale carbon nanotube logic. He has authored or co-authored over 70 technical publications and holds more than 50 US patents with more than 30 pending, and was appointed as IBM Master Inventor. He also recevied IBM Outstanding Technical Achievement Award and IBM Research Division Award for his contributions in carbon nanoelectronics.
Bio:
Dr. Xia is an associate professor of Electrical & Computer Engineering at UMass Amherst. Before joining UMass in Oct. 2010, he spent 3 years as a research associate at Hewlett-Packard Laboratories (HP Labs). While at HP Labs, he demonstrated the first 3D hybrid memristor-CMOS integrated circuit with reconfigurable logic functions. He received his Ph.D. in Electrical Engineering in 2007 from Princeton University, where he was a recipient of the Guggenheim Fellowship in Engineering (a graduate fellowship from Princeton).
Dr. Xia’s research interests include post-CMOS nanodevices, device physics, integrated nanosystems, and enabling nanotechnologies. He has published more than 50 papers in peer-reviewed journals and has given over 70 keynote, invited or contributed presentations at peer-reviewed scientific conferences, and 27 invited seminars in US and international institutions. He holds 18 US patents with several more patents pending. His work has been featured in Nature Nanotechnology, Technology Review, New Scientist, EE Times, Small Times, and The Washington Post, etc. He received a DARPA Young Faculty Award (YFA) (2012), an NSF CAREER Award (2013) and the Barbara H. and Joseph I. Goldstein Outstanding Junior Faculty Award from UMass Amherst (2015).
05.20.2016 Seminar and lived experience forum with Prof. Jer-Shing Huang

JSH Group is currently at the Department of Chemistry at National Tsing Hua University in Taiwan. Our research focuses on the Engineering of Nanoscale Light-matter Interaction. We design, fabricate and characterize nanostructures in order to sculpt optical field for specific photochemical and photophysical interactions.
Yuhwa Lo received his PhD in electrical and computer engineering from UC Berkeley in 1987. He worked at Bellcore as a member of technical staff from 1988-1990, at Cornell University as an assistant and associate professor from 1991-1999, and at UCSD as a professor since 2000. He is the Director of the UCSD Nano3 Facility and also the Director of the NSF National Nanotechnology Coordinated Infrastructure (San Diego Site).

He leads a group of 22 PhD students and postdocs conducting research on nanodevices, nanophotonics, and biomedical devices and systems. He has (co)founded 4 companies and is currently serving the scientific advisory board of 5 biotech companies. He has (co)authored over 400 technical publications and (co)authored and edited 10 books and book chapters. He was awarded 35 patents, many of which were licensed to industry and successfully commercialized. He received NSF CAREER award, multiple teaching awards, several best paper awards, CCAT (Center for Commercialization of Advanced Technology) award, and NASA Innovation award. He is a fellow of the Optical Society of America (OSA) and the Institute of Electrical and Electronics Engineers (IEEE).
Future activities plans

- As a newly established student chapter, we plan to support one officer to the Leadership Workshop in SPIE Photonics West 2017 or SPIE Optics + Photonics 2017.
- Spring group expo (January) and Fall group expo (August) to promote our chapter and invite new student to join us.
- Keep invite speaker to share their experience with our student members.

Financial information

- This is the first year of SPIE KAUST student chapter. Up to now, all the expense of activities (speaker’s traveling, snack, drink and others) are covered by KAUST graduate affair and CEMSE department.