

총회초청강연 | 7월 13일(목) 14:20~15:10 국제교류회관 대회의실



The Dawn of Organic Optoelectronics

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Organic synthetic polymers have invaded our daily lives because of their renowned mechanical properties, their light weight and their ability to be mass produced at low cost using various extrusion, coating and printing techniques. In recent years, advances in the synthesis and processing of conducting and semiconducting organic materials have fueled the emergence of a new technology that can potentially lead to low cost, flexible, and large area plastic chips.

This talk will review recent advances in organic molecules and polymers for organic optoelectronics. We will discuss the origin of nonlinear optical properties, charge transport, and light emission in conjugated organic materials with an emphasis on how structure at the nanoscale relates to various physical properties. Finally, we will review the latest developments in examples of applications, including organic electroluminescent devices for displays, and photovoltaic cells for power generation.

• Biograph

Bernard Kippelen was born and raised in Alsace, France. He studied at the University Louis Pasteur in Strasbourg where he received a Maitrise in Solid-State Physics in 1985, and a Ph.D. in Nonlinear Optics in 1990. From 1990 to 1997 he was Charge de Recherches at the CNRS, France. In 1994, he joined the faculty of the Optical Sciences Center at the University of Arizona. There, he developed a research and teaching program on polymer optics and plastic electronics. He holds seven patents and has co-authored over 120 referenced publications and eleven book chapters. He served as chair and co-chair of numerous international conferences on organic optoelectronic materials and devices. He is the co-founder of several spin-off companies, including NP Photonics, Inc. and LumoFlex, LLC.

Since August 2003, Bernard Kippelen is a professor at the School of Electrical and Computer Engineering at the Georgia Institute of Technology where his research ranges from the investigation of fundamental physical processes (nonlinear optical activity, charge transport, light harvesting and emission), to the design, fabrication and testing of light-weight flexible optoelectronic devices based on nanostructured organic materials. He serves as the Associate Director of the Center for Organic Photonics and Electronics and as the Associate Director of the Center MDITR, a Science and Technology Center funded by the National Science Foundation.