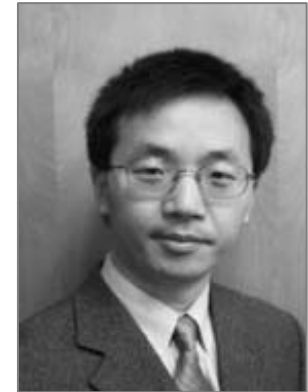


*Les Séminaires de la Fondation
"Nanosciences aux limites de la Nanoélectronique"*

**Mardi 6 Juillet 2010
à 10h**

Samuel S. Mao

Lawrence Berkeley National Laboratory
University of California at Berkeley



Présentera un séminaire intitulé :

**"Nanostructured Organic Light-Emitting Diodes
for Energy Efficient Lighting "**

Maison MINATEC – Petit Salon
RdC de la Maison des Micro et Nano Technologies
3 parvis Louis Néel, Grenoble

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Nanostructured Organic Light-Emitting Diodes for Energy Efficient Lighting

Lighting represents one-fifth of the electricity consumption. The U.S. Department of Energy has set an ambitious goal to develop advanced solid-state lighting technologies that, compared to conventional lighting approaches, are much more energy efficient, longer lasting, and cost competitive.

One of the primary energy efficient solid-state lighting technologies is based on organic light-emitting diodes (OLEDs), which differ fundamentally from today's incandescent and fluorescent devices. Although significant progress has been made since the invention of OLEDs some twenty years ago, the technology has yet to reach the full potential of solid-state lighting.

In this talk, challenges involved in OLED development will be identified and experiments exploring high efficiency OLEDs will be discussed. In particular, OLEDs incorporated with micro- and nano-structures for enhanced charge injection and light extraction have demonstrated significantly improved performance. A nanoscale organic-inorganic hybrid approach based on semiconducting quantum dot-polymer composites will also be examined.

The talk will conclude with a brief introduction of a suite of other energy technologies that the speaker is currently studying.

Biography

Dr. Samuel Mao is a career staff scientist of Lawrence Berkeley National Laboratory and an adjunct professor at the college of engineering of the University of California at Berkeley.

He obtained his Ph.D. degree in Engineering from the University of California at Berkeley in 2000. He is currently leading a multidisciplinary research team studying ultrafast energy conversion processes and developing clean energy technologies based on nanoscale materials and structures.

Dr. Mao has published over 70 peer-reviewed articles and five invited book chapters, and delivered more than 40 invited talks at various international conferences. As the inventor of twelve technology patents, he is instrumental in establishing high technology ventures at the Silicon Valley.

Dr. Mao has served as a technology committee member, national laboratory observer, and program review panelist for the U.S. Department of Energy.

Dr. Mao was a co-founder and organizer of the First International Energy Nanotechnology Conference, and the First International Symposium on Transparent Conducting Materials.

He will be a general chair of the Materials Research Society annual meeting in spring 2011, the largest materials science event encompassing 50 parallel symposia with about 5000 presentations.