LRSM / MSE Joint Sponsored Lecture

LRSM

The Laboratory for Research on the Structure of Matter

When Optoelectronics Goes Organic: What does Si have to do with it?

Zakya H. Kafafi

University of Pennsylvania, Philadelphia, PA

On Sabbatical Leave from the National Science Foundation

Thursday, September 8, 2011
10:30am

Laboratory for Research on the Structure of Matter
Auditorium, coffee served in Reading Room @ 10:30
University of Pennsylvania
3231 Walnut Street, Philadelphia, PA 19104

The 21st century is witnessing a revolution in the area of electronics and photonics. Conventional silicon semiconductor technology is being challenged by potentially inexpensive, flexible, large-area and light-weight organic optoelectronic devices. The design and development of electro- and photo-active organics with the desired chemical and physical properties is critical in achieving high efficiency and stability in these devices. Significant progress has been made in developing organic light-emitting and carrier transport materials using organo-silicon compounds with enhanced electronic, optical and thermal properties for flat panel displays, solid state lighting and lasing. The talk will review the design of molecules using a building block based on a silacyclopentadiene (silole) ring or a spiro-linked silafluorene (spirosilabifluorene), and the development of organic light-emitting devices using these highly efficient solid state emitters and superior electron transporters.

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