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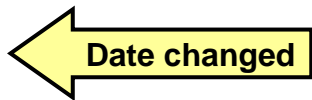
**Approaches for Enhancing the Performance of  
Organic Optoelectronic Devices**

*by*

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~~Date: August 20, 2007 (Monday)~~

Time: 3:30 p.m. - 4:30 p.m.

Place: Room 128, Science Centre North Block, CUHK, Shatin

ALL INTERESTED ARE WELCOME  
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**Abstract**

Organic optoelectronics have evolved into a dynamic field of applied research and industrialization. Various applications ranging from organic displays, organic solid state lighting, to integrated sensor systems are expected to produce a bright future for organic optoelectronic devices. To meet the realistic specifications for commercialization, improvements on the device performance are definitely needed. Here, we review our recent progress in the fields of organic light-emitting devices (OLEDs) and organic photovoltaic (OPV) devices. In particular, effective approaches for improving the performance of tandem OLEDs, white OLEDs and OPV devices will be discussed. Systematical study of the influence of the n-type layers in the connecting unit on the performance of tandem OLEDs was done. Device characteristics are found to be insensitive to metal work functions, but depend on the electrical conductivity and optical transparency of metal-doped layers. Highly efficient white OLEDs have been achieved by either doping with higher drift mobility materials or the use of exciplex formation. For OPV devices, doping techniques of either metallic dopants or fluorescent dyes are utilized. With an optimized device structures, the power conversion efficiency increases 3 - 5 times higher than that of standard bilayer OPV devices.

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