
OLED MATERIALS

Friday, May 25 / 9:00 10:20 am / Ballroom B

Chair:

Chishio Hosokawa, Idemitsu Kosan Co., Ltd., Chiba, Japan

Co-Chair:

Raymond C. Kwong, Universal Display Corp., Ewing, NJ, U.S.A.

**64.1: Invited Paper: Polarized OLEDs as Energy-Efficient (9:00)
Backlight for LCDs***S. Culligan, A. Chen, J. Wallace, C. Tang, S. Chen
University of Rochester, Rochester, NY, U.S.A.*

The design, synthesis, and characterization of glassy-liquid-crystal conjugated oligomers possessing essential features to the realization of highly efficient and strongly polarized organic light-emitting diodes will be discussed.

64.2: Highly Efficient Deep-Blue EL Devices (9:20)*M-H. Ho, Y-S. Wu, S-W. Wen, C. Chen
National Chiao Tung University, Hsinchu, Taiwan, ROC*

A deep-blue dopant (SK-1) based on a linked stilbene moiety has been designed and synthesized. When doped in the new stable blue host material, SK-1 achieved a luminance efficiency of 5.0 cd/A with a corresponding CIE_x of (0.14, 0.14) and an external quantum efficiency of 4.2%.

**64.3: High-Efficiency Phosphorescent White OLEDs Using
Red-Emitting Osmium Complex and Blue-Emitting (9:40)
Iridium Complex***C-H. Chang, C-K. Chang, C-L. Lin, Y-H. Lin, H-C. Su,
C-C. Wu
National Taiwan University, Taipei, Taiwan, ROC**L-S. Chen, W-W. Wu, Y. Chi
National Tsing Hua University, Hsinchu, Taiwan, ROC*

By using the unique properties of an efficient red-emitting osmium (Os) complex in combination with an efficient blue-emitting iridium (Ir) complex, WOLEDs with forward-viewing efficiencies up to 17% photon/electrons (36 cd/A, 28 lm/W) and total peak external efficiencies up to 28.8% (47.5 lm/W) will be reported.

**64.4: High-Performance OLEDs Based on a New Class of
Ir Complexes Bearing Pyrazine Structures in Their (10:00)
Ligands***S.Seo, H. Inoue, N. Ohsawa, S. Shitagaki, R. Nomura,
S. Yamazaki
Semiconductor Energy Laboratory Co., Ltd., Kanagawa,
Japan*

Novel Ir complexes having pyrazine structures in their ligands have been developed. The OLEDs based on these complexes demonstrated unique properties and high performance. In particular, the red OLED achieved an extremely high efficiency of 30 cd/A with CIE color coordinates of (x, y) = (0.65, 0.35), and the luminance half-decay time was estimated to be about 100,000 hours at an initial luminance of 1000 cd/m².

BREAK (10:20–10:40)**AUTHOR INTERVIEWS (12:00–1:00)**
