

Journal of
Photonics for Energy

**Organic Light-Emitting
Materials and Devices XV**

Editors

Franky So

Chihaya Adachi

21–23 August 2011
San Diego, California, USA

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SPIE Proceedings Volume 8115



Organic Light Emitting Materials and Devices XV, edited by Franky So, Proc. of SPIE Vol. 8115, 811501 · © 2011 SPIE ·
CCC code: 0277-786X/11/\$18 · doi: 10.1117/12.924134

This volume includes papers presented at SPIE conference 8115 “Organic Light-Emitting Materials and Devices XV,” San Diego, California, August 2011. It includes additional papers relevant to these topics that were not presented at the conference. Papers were peer reviewed and published as special sections of the *Journal of Photonics for Energy*. These journal articles reflect the work and thoughts of the authors. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Journal of Photonics for Energy

ISSN: 1947-7988

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Proceedings of SPIE

ISSN: 0277-786X

ISBN:

Volume 8115: 9780819487254

Volume 8116: 9780819487261

Published by

SPIE—The International Society for Optical Engineering

P.O. Box 10, Bellingham, Washington 98227-0010 USA

<http://www.spie.org>

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Printed in the United States of America.

Journal of Photonics for Energy

Article Numbers: Each paper is designated by a unique six-digit article number. Use of article numbers in place of traditional page numbers allows articles to be fully citable as soon as they are published online. References to papers in this special section should be cited using the format shown in the following example:

J.-H. Jou et al., "Organic light-emitting diodes with roll-up character," *J. Photon. Energy* 2, 021208 (2012).

Organic Light-Emitting Materials and Devices

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Guest Editorial: Organic Light-Emitting Materials and Devices

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Since the introduction of organic light-emitting diode (OLED) displays for smart phones by Samsung three years ago, the use of OLED displays for mobile devices has taken off. Today, active-matrix OLED (AMOLED) displays are widely used in many smart phones as well as tablet devices. This year, Samsung and LG have demonstrated their 55-in. OLED televisions, and both companies announced that these products will be commercialized later this year. Since then, there has been a lot of excitement generated and several other display companies have made similar announcements regarding the OLED TV product roadmaps. While OLED TVs are being commercialized, there are still many fundamental issues that need to be addressed, such as the stability of blue OLEDs and light extraction. If the commercialization of OLEDs for flat-panel displays is considered as the first wave of organic electronics, the second wave will naturally be OLEDs for solid-state lighting. In order to take OLEDs to the next level, further development in OLED materials and devices is needed. Efficient phosphorescent emitters, stable and high-bandgap host materials, and efficient carrier transport materials are critical to the development of OLED materials. In the area of devices, further understanding of loss mechanisms and device degradation mechanisms is also very important. For lighting applications, almost 75% of the photons generated are lost, and novel approaches to enhance light extraction are vital.

In this special section, papers related to these topics are assembled. These papers are based partially on talks and posters given at the conference on Organic Light-Emitting Diodes XV at the SPIE Optics + Photonics meeting held in San Diego in August 2011. We believe that readers will find this volume especially interesting.