

PROCEEDINGS OF SPIE

# Organic and Hybrid Light Emitting Materials and Devices XXIII

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Editors

11–13 August 2019  
San Diego, California, United States

Sponsored and Published by  
SPIE

Volume 11093

Proceedings of SPIE 0277-786X, V. 11093

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

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Author(s), "Title of Paper," in *Organic and Hybrid Light Emitting Materials and Devices XXIII*, edited by Chihaya Adachi, Jang-Joo Kim, Franky So, Proceedings of SPIE Vol. 11093 (SPIE, Bellingham, WA, 2019) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510628793

ISBN: 9781510628809 (electronic)

Published by

SPIE

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

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

[SPIE.org](http://SPIE.org)

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Organic light-emitting diodes (OLEDs) are solid-state light sources made of organic semiconductor (OSC) materials. Various functional materials help to facilitate the conversion of injected charges into emitted photons at the maximum possible efficiency and further are assembled specifically to realize the desired emitted color—be it monochrome or broadband emissions for displays or solid-state lighting (SSL), respectively. The materials used can be both small molecules (Tang and VanSlyke, 1987) and polymers (Burroughes et al., 1990), where any possible combination of the two material classes. The photo- and electroluminescent properties of the hybrid materials at room temperature have been investigated. It has been established that, as the synthesis duration of the bulk hybrid materials increases from 5 to 60 min, a photoluminescence maximum shifts to a short-wavelength domain from the value typical of pure  $\text{Ir}(\text{Meq})_3$  by 40, 15, and 10 nm for  $\text{Alq}_3$ ,  $\text{Gaq}_3$ , and  $\text{Inq}_3$ , respectively. Keywords. metal complexes organic luminophors polymorphism hybrid materials electroluminescence. Original Russian Text © R.I. Avetisov, O.B. Petrova, A.A. Akkuzina, A.V. Khomyakov, R.R. Saifutayarov, A.G.