



Quantum Dot Light-Emitting Diodes: Innovations and Applications

Guest Editors:

Dr. Chengzhao Luo

School of Optoelectronic Science
and Engineering & Collaborative
Innovation Center of Suzhou
Nano Science and Technology,
Soochow University, Suzhou
215006 China

Dr. Chenghao Bi

Qingdao Innovation and
Development Base, Harbin
Engineering University, Qingdao
266500, China

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Message from the Guest Editors

Quantum dot light-emitting diodes (QD-LEDs) are one of the most promising self-luminous displays in terms of luminous efficiency, wavelength tunability and cost. Future applications using QD-LEDs range from wide color gamut and large screen displays to augmented/virtual reality displays, wearable/flexible displays, in-vehicle displays and transparent displays, which require high performance in terms of contrast, viewing angle, response time and power consumption. The theoretical efficiency of a single component is achieved by customizing the QD structure and optimizing the charge balance in the charge transport layer to improve efficiency and lifetime. The maximum external quantum efficiency and lifetime of QD-LEDs have now taken a quantum leap and are increasingly eligible for commercialization. However, many challenges remain for the key factors determining the performance of QD-LEDs, such as the emitter, hole/electron transport layer and device structure.

This Special Issue invites contributions describing the latest advances in quantum dot light-emitting diodes. All theoretical, numerical and experimental papers are accepted.

