
Low-dimensional semiconductor luminescent materials and devices

Key Laboratory of Advanced Display and System Applications of Ministry of Education, Shanghai University, 149 Yanchang Road, 200072, China

Xuyong Yang

Email: yanxy@shu.edu.cn

Colloidal quantum dots/perovskites based light-emitting diodes (QLEDs/PeLEDs) have attracted extensive attention for lighting and display applications because of their excellent advantages, such as narrow emission bandwidth, color tunability, high brightness and low-cost fabrication techniques. The external quantum efficiencies (EQEs) for QLEDs/PeLEDs are catching up with those for commercial organic light-emitting diodes (OLEDs), thanks to the quantum efficiency improvement, the device configuration optimization as well as the deep understanding of electroluminescence principle. Despite the rapid advance in device performance has been achieved, the operational lifetime of these devices still cannot meet the requirements for practical applications. In this report, I will present our latest advances in improving performance and stability of high color-purity QLEDs/PeLEDs.



Short Bio:

Xuyong Yang received his PhD degree from Nanyang Technological University (Singapore). He is a professor of Shanghai University, China. His research focuses primarily on preparation of luminescent semiconductor nanomaterials such as quantum dots and perovskites, as well as their applications in light-emitting devices. He has published more than 100 first/corresponding author SCI papers in major scientific journals including Nature, Nature Communications, Joule, Advanced Materials, Angew. Chem. Int. Ed., Nano Letters, Light: Science & Applications, Chemical Society Reviews, etc.