



**THE CHINESE UNIVERSITY OF HONG KONG**  
**Department of Electronic Engineering**

**SEMINAR**

**Towards High-Performance and Solution-Processed  
Light-Emitting Diodes Based on Quantum Dots**

By

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Date: 28 January, 2019 (Monday)

Time: 10:30 a.m.

Venue: Room 222 Ho Sin Hang Engineering Building

**Abstract:**

Quantum dots (QDs) are a unique class of emitters with size-tunable emission wavelengths, saturated emission colors, near-unity luminance efficiency, inherent photo- and thermal- stability and excellent solution processability. In the past few years, efficiency and lifetime of quantum-dot light-emitting diodes (QLEDs) achieved tremendous progresses. These encouraging facts foreshadow the commercialization of QLEDs, which promises an unprecedented generation of cost-effective, large-area, energy-saving, wide-color-gamut, ultra-thin and flexible displays. Here we review our activities associated with QLEDs, including material chemistry of charge-transporting layers and optimization and mechanism studies of prototype devices.

**References**

- (1) Dai, X.; Zhang, Z.; Jin, Y.; Niu, Y.; Cao, H.; Liang, X.; Chen, L.; Wang, J.; Peng, X. *Nature* 2014, 515: 96.
- (2) Dai, X.; Deng, Y.; Peng X.; Jin, Y. *Advanced Materials* 2017, 29: 1607022.
- (3) Lin, X.; Dai, X.; Pu C.; Deng, Y.; Niu Y.; Tong L.; Fang W.; Jin, Y.; and Peng, X. *Nature Communications* 2017, 8: 1132.
- (4) Zhang, Z.; Ye, Y.; Pu, C.; Deng, Y.; Dai, X.; Chen, X.; Chen, D.; Zheng, X.; Gao, Y.; Fang, W.; Peng, X.; Jin, Y. *Advanced Materials* 2018, 30, e1801387

**Biography:**

Dr. Yizheng Jin is a Professor of Chemistry at Zhejiang University, China. His research interests encompass material chemistry, device engineering and device physics of solution-processed optoelectronics. His research has resulted in over 50 journal papers. Prof. Jin received several awards, including National Natural Science Funds for Excellent Young Scholar, Chinese Chemical Society Award for Outstanding Young Chemist and Top 10 scientific advances of 2014 in China.



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