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# IAPME Seminar

## Perovskite Nanocrystals for Next-Generation Display Technologies



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Venue: N23-4018

Time: 16:00 - 17:00

Hosted by: Prof. Guichuan XING

### Abstract

Metal halide perovskites (MHPs) has attracted great attention as a promising light emitter for next-generation display application because of their exceptionally high color purity (FWHM ~ 20 nm) and low cost. Although a lot of strategies have been reported, electroluminescence efficiency and stability of MHP still lag behind existing light-emitting diodes (LED). In this talk, we will explore the unique benefits and approaches in utilizing MHPs for display technologies, focusing on innovative nanostructures and material strategy in precisely engineered colloidal perovskite nanocrystals (PNCs) for high luminous efficiency in perovskite light-emitting diodes (PeLEDs). Also, advantages and strategies for commercialization of MHP will be delivered.

### Biography

Tae-Woo Lee is a professor in the Department of Materials Science and Engineering at Seoul National University, Korea. He received his Ph.D. in Chemical Engineering from Korea Advanced Institute of Science and Technology (KAIST), Korea, in 2002. He joined Bell Laboratories, Lucent Technologies, USA, as a postdoctoral researcher in 2002 and then worked at Samsung Advanced Institute of Technology as a member of the research staff (2003–2008). He was an assistant and associate professor in the Department of Materials Science and Engineering at Pohang University of Science and Technology (POSTECH), Korea, until August 2016. He has won many valuable awards. He is author and co-author of 280 papers in high-impact journals including Science, Nature, Nature Photonics, Nature Nanotechnology, Nature Biomedical Engineering, Science Advances, Nature Communications, Joule, PNAS, Energy and Environmental Science, and Advanced Materials. He is also the inventor or co-inventor of 423 patented technologies. He currently serves as an editorial board member on the Journals such as Advanced Materials (Wiley), FlatChem (Elsevier), EcoMat (Wiley), Chem & Bio Engineering (ACS), Materials Today Electronics (Elsevier), Nano Convergence (Springer), and Semiconductor Science and Technology (IOP), and as an associate editor in Organic Electronics (Elsevier). His research focuses on organic, organic–inorganic hybrid perovskite, and carbon materials, and their applications to flexible electronics, printed electronics, displays, solid-state lightings, solar energy conversion devices, and bioinspired neuromorphic devices.