

SEMINAR: Industrializing Colloidal Quantum Dot Image Sensors

ANDRAS PATTANTYUS-ABRAHAM

November 25, 2025

12:00 to 13:00

Elements Room

Abstract:

Colloidal quantum dot image sensors can now be purchased commercially. This talk will review the key elements to this progress and look at how the key parts of the sensor are optimized: the QD formulation, the photodiode, the read-out circuit, the camera and the imaging system. We will also look at what challenges still lie ahead when considering more applications, better reliability and higher volume markets, while keeping in mind competing technologies.

Biography:

Andras Pattantyus-Abraham has a PhD in Chemistry from the University of British Columbia, and worked on colloidal quantum dot (QD) photovoltaics with Ted Sargent at the University of Toronto. He joined Invisage Technologies to work on QD-based image sensors covering the visible and near-infrared. He joined Apple in 2017, where he became Senior Manager of QD R&D. In 2020, he transitioned to STMicroelectronics and became Director of Advanced Materials R&D for QD sensors, now focused on shortwave infrared (SWIR) sensing and imaging. In October 2024, he founded BestQD Solutions LLC to help accelerate the adoption of low-cost SWIR imagers. He has deep expertise in QD synthesis, quality control and QD-based optoelectronics design, processing, testing and SWIR application development.

Hosted by: Gerasimos Konstantatos