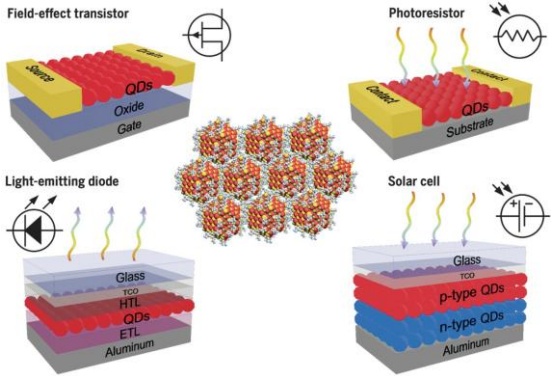
Colloidal quantum dot and perovskite optoelectronic materials devices: from infrared sensors to solar photovoltaics

Argonne NATIONAL LABORATORY | APS

Ted Sargent

Wednesday, March 5
2:00 p.m.
Bldg. 402 | APS Auditorium



Solution-synthesized and solution-processed materials, such as colloidal quantum dots and perovskites, are seeing continued interest as materials in optoelectronics. I will review progress in CQD synthesis and materials processing especially in the context of NIR and SWIR photodetectors and image sensors. I will discuss advances in perovskites as materials for single-junction photovoltaics as well as tandems, including with silicon, focusing on materials interface issues and durability science.

Ted Sargent is the Lynn Hopton Davis and Greg Davis Professor at Northwestern University's Department of Chemistry and Electrical and Computer Engineering, where he focuses on renewable energy and optoelectronics. From 1998 to 2022, he was a professor and Vice President for Research and Innovation at the University of Toronto. He is a Fellow of the Royal Society of Canada, the American Association for the Advancement of Science, the Institute of Electrical and Electronics Engineers, and the Canadian Academy of Engineering.

Sargent is Director of the Trienens Institute, Northwestern University's energy and sustainability institute. He is a Fellow of the US National Academy of Inventors, NAI.

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