MEETING NOTICE & INVITATION
Pacific Northwest Chapter • Society for Information Display

# *Quantum Dots as On-chip Downconverters for Displays*


## Juanita Kurtin

CTO and co-founder of Pacific Light Technologies


**Thursday, April 24th at 6:00 P.M.**

PLANAR Systems (headquarters)
1195 NW Compton Dr.
Beaverton, OR 97006  (503) 748-1100

### Abstract


Quantum dots (QDs) are finally delivering on the promise of bringing wide color gamut and high efficiency to displays in consumer electronic devices with their recent advent in several display products. For the first time, low-cost LCD displays can expand the color gamut well beyond the sRGB standard to rival the more costly and power-hungry OLED display. This is made possible by the narrow emission spectra of the QD emitters that result in the dual benefits of moving the primaries closer to the edges of the monochromatic locus of the color chart while reducing light leakage through adjacent filters, in combination with the ability to choose any desired emission wavelength. However to date QDs have only been successful as an off-chip optical element rather than as on on-chip replacement for phosphors, which increases the expense and decreases the flexibility of a QD solution for displays. This is due to the temperature, radiant flux, and environmental demands of the on-chip architecture that in the past have exceeded the capabilities of quantum dot materials. Pacific Light Technologies (PLT) has now developed a patented nanomaterial design that for the first time makes on-chip applications accessible by quantum dots, thereby bringing the benefits of spectral control, high-efficiency, and high color-rendering that quantum dots enable to a much larger market. This talk will present our recent progress in on-chip application and testing of quantum dot downconverters, covering materials that emit in the range from green to red wavelengths.


### Speaker Biography

Juanita Kurtin is the CTO and co-founder of Pacific Light Technologies, a start-up company delivering high quality nanomaterials to the lighting and display markets as a replacement for conventional phosphors. She has a background in the research of nanomaterials for various device applications, including transistors, solar cells, and light emitting diodes.

Prior to starting PLT, Dr. Kurtin was the VP of R&D at SpectraWatt, a solar cell manufacturing company which was spun out of Intel, where she developed the technical vision for the company.

Dr. Kurtin obtained her BS degree in Chemistry from the Massachusetts Institute of Technology, and her PhD in Physical Chemistry from the University of California at Berkeley, studying with quantum dot pioneer Dr. Paul Alivisatos

**Seminar**

The Seminar is free. Please join the speaker for a no-host dinner after the seminar. Directions to the restaurant will be provided at the seminar. Non-Members are welcome. RSVP to Gary Johnson at Gary.Johnson@tek.com or (503) 627-1985. Please indicate if you plan to participate in the dinner.

The Pacific Northwest Chapter of the Society for Information Display was established for the following purposes:

- To support the activities and purposes of SID.
- To encourage and contribute to the scientific and educational advancement in the field of information display and to promote its use.
- To provide forums for the exchange and dissemination of ideas and knowledge relating to the field of information display.

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