

**SUMMARY** Photonics engineer with 8 years experience developing award winning materials for solid-state lighting and defense applications. Interested in diversifying skills within optics and photonics industry.

**EDUCATION** **Universitat Politècnica de Catalunya, Barcelona, Spain** **August 2013 - September 2014**  
**International Master of Science in Photonics**

**University of Colorado, Boulder, Colorado, USA** **August 2012 - December 2012**  
**Continuing Education in Electrical Engineering**

**Georgia Institute of Technology, Atlanta, Georgia, USA** **August 2002 - December 2007**  
**Bachelor of Science in Materials Science and Engineering**

**EXPERIENCE** **CD6, Barcelona, Spain** **May 2014 - September 2014**  
**Remote Sensing Engineer**

- Evaluated radiometric performance of LIDAR remote imaging in an underwater environment.
- Numerical results were verified, and the software was delivered to the customer on time.

**Phosphor Tech Corporation, Lithia Springs, Georgia** **January 2005 - July 2012**  
**Materials Engineer Task Manager**

*Manager*

- Met project goals for energy efficient lighting that received Illuminating Ideas Award by DOE.
- Rail gun sensor defense project led to a commercialization phase of a calibrated temperature sensor in collaboration with an interdisciplinary team of contractors.
- Supervised international interns in a nanophosphor research program.

*Engineer*

- Improved LED extraction efficiency via refractive index gradient of layered phosphor. Applied spectroscopy for in-situ monitoring of electrophoretic phosphor deposition.
- Successfully demonstrated manufacturing scalability of phosphors by building an automated continuous system complete with reducing gases and oxygen sensors.
- Developed medical imaging phosphor screens for digital X-rays. Optimized manufacturing procedures to decrease cost by 80% while increasing efficiency and overall performance.
- Automated colloidal quantum dot growth for superior quality control of ZnSe nanophosphor.

*Scientist*

- Designed and synthesized a sample space of 250 phosphors for LED white light color rendering.
- Increased luminaire phosphor lifetime by 120% with CVD and colloidal chemistry.
- Material analysis of phosphor and nanoparticles included quantum efficiency (QE), color rendering index (CRI), Correlated Color Temperature (CCT), stability, particle size, zeta potential.

*Marketer*

- Team work contributions to SBIR proposals led to funding on various projects.
- Built www.phosphor.com which continues to drive new sales through online purchases.
- Volunteered to synthesize photonic crystals by colloidal chemistry, photolithography, ALD.

**SKILLS** **Software:** Matlab, HTML, LaTeX, SpectraSuite, Program Design, Office  
**Lab:** PID Furnace Control, Acetylene Torch, Delsa Nano Certificate, SEM, Profilometry, Microscopy  
**Optics:** Integrating Spheres, Spectrometers, Fiber Optics, Lasers, PMTs, Filters, Oscilloscopes, Polarizers  
**Languages:** Native English, Elementary Spanish

**HONORS**

- DOE's 2010 Illuminating Ideas Award For Significant Achievement in Solid-State Lighting R&D
- Herald and Founding Father of Sigma Pi at Georgia Tech
- Professional Member of SPIE

**PUBLICATIONS** (1) Morris T. Master's Thesis, Universitat Politècnica de Catalunya (2014)  
*Radiometric simulation of LADAR imaging for underwater environments*

(2) Summers, et al. Materials Science Forum Vols. 654-656 (2010) pp 1130-1133  
*Nanocrystalline Phosphors for Lighting and Detection Applications*

(3) Menkara, et al. Optical Society of America 19 Issue S4 pp. A972-A981 (2011)  
*Development of nanophosphors for light emitting diodes*