ELIZABETH L. KELLEY#, and EDWARD A. WOVCHKO, Department of Chemistry, West Virginia Wesleyan College, Buckhannon, WV, 26201**. CdSe-ZnS quantum dot light emitting diode fabrication.**

Quantum dot light emitting diodes (QD-LED) are considered to be the next advancement in display technologies. Quantum dot LEDs may improve the standard of LED technology by providing a purer color, cutting manufacturing cost, and having a higher efficiency than organic light emitting diodes. Efficiency of the QD-LED device may be improved by including a hole transport layer (HTL) and an electron transport layer (ETL) with the quantum dots sandwiched between the two. The emission wavelength depends on the size and composition of the quantum dots, and the device efficiency depends on the thicknesses of the HTL and ETL. Progress in the synthesis of CdSe-ZnS quantum dots and characterization using UV-Vis and fluorescence spectroscopy will be presented. Details of a LED device fabricated from CdSe ZnS quantum dots, 4,4,4-tris-(carbazol-9-yl)-triphenylamine (TCTA) as the hole transport layer, and titatinum (IV) butoxide as the electron transport layer will be reported. The peak wavelength in the visible spectral range and the turn-on voltage will also be presented.