

Abstract Submitted
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Cathodes with modified morphology for polymer light emitting devices¹ JACOB COX, MARIAN TZOLOV, Lock Haven University of PA — This work is the result of a junior year research project on fabrication and characterization of Polymer Light Emitting Devices (PLEDs). The PLEDs were created on top of indium tin oxide coated glass substrates, starting with a 60 nm thick hole injection layer, followed by an 80 nm layer of PPV-MEH polymer. The structures were finalized by a thermally evaporated aluminum film acting as the cathode for the device. We have concentrated on modifying the structure and morphology of the aluminum cathode in conjunction with the variation of the polymer film thickness. The devices were tested using current- voltage and light-voltage characteristics, light emission spectroscopy, device lifetime testing, profilometry, and optical microscopy of device degradation. The structure of the aluminum films was evaluated by SEM imaging. The results from this complex study showed a correlation between the morphology of the metal electrodes with the performance of the PLEDs.

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Marian Tzolov
Lock Haven University of PA

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