

Abstract Submitted  
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**Solution based cathode deposition for polymer light emitting devices** MARIAN TZOLOV, STEPHEN SWIONTEK, Department of Physics, Lock Haven University of PA — We report on a method for deposition of cathodes for polymer light-emitting devices (PLEDs), which is fundamentally different than the widely used thermal evaporation of metals. The thermal evaporation is well established in the industry but is very different than the solution processing of the rest of the PLEDs. It requires much more sophisticated equipment and much longer processing time than the solution processing. The metal evaporation requires temperatures around 1000°C with all following requirements for materials handling. Proposing a method alternative to the already well-established thermal evaporation technique is a challenging task, and we are demonstrating only the principal feasibility of a solution based deposition of the cathodes. It is based on electroless deposition of silver. The process is compatible with the solution processing of the rest of the device and allows to finalize the entire device using solution based processes. We demonstrate the most representative current-voltage characteristics, emission spectra, stability tests, and microstructure of the newly developed electrode. These initial experiments demonstrate the feasibility of the proposed method and point avenues for further improvement.

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