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Polymer Films with Enhanced Light Emission[1] ADAM THOMAS, ZAC BARCIKOWSKI, MARIAN TZOLOV, Lock Haven University of Pennsylvania — Organic and polymer emitting diode degradation and efficiency are the main problem for industry in commercializing them as a product. This research focused on improving the efficiency of these devices with the main goal of tuning the emission spectrum of certain polymers to emit white light. By layering two polymers during the spin coating process of the device, the photoluminescence (PL) of the particular device was enhanced depending on the polymers we placed down and in particular order. This enhancement however did not occur when the same set of polymers that improved PL were mixed together in solution and then spin coated onto the device. The double layer structures with improved PL were evaluated using PL emission, excitation and optical absorption spectroscopy tests to determine how the polymers were interacting with each other. It was found that two polymers in one orientation would improve PL but wouldn't improve PL if the same polymers were spun in reverse order. As well as the second layer of polymer did not emit its own color but enhanced the under lying polymer layer.

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