

**ORGANIC LIGHT EMITTING DIODES.** *Matt Holland, and Dr. Santosh Kurinec\*,  
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Organic light emitting diodes (OLED) are generating a lot of research in display technology as well as in integration of electrical and optoelectronic components. The conducting polymers can be used to construct organic transistors, active light emitting devices and optical devices, including wave guides and diffractive optics. The biggest benefit of organic over traditional inorganic LEDs is the lower cost of manufacturing. This project focuses on an introduction to organic light emitting devices.

The objective of this project is to introduce the operating mechanism of OLED devices which includes carrier transfer and recombination in organic polymers, discuss the fabrication techniques, structure and materials used in building OLEDs and investigate the electrical properties of working OLED devices.

Three OLED devices of varying colors were manufactured at Eastman Kodak research facilities, each with four  $0.1\text{cm}^2$  luminous regions. Electrical and optical testing was performed at Eastman Kodak and Rochester Institute of Technology. The three OLEDs have average peak wavelengths of 442.5nm, 519.3nm, and 628.2nm. Their electrical turn-on voltages are 1V, 0.78V and 2V, respectively.