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Polymer-Based Photonics

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From plastic solar cells to plastic light emitting diodes. From plastic transistors to plastic lasers. Advances in organic materials over the last several years, has resulted in the promise for more competitive polymer-based optical, electronic and electro-optic devices. Devices based on polymeric materials offer the potential for very large area, lightweight, flexible circuits with simpler and less expensive fabrication. Device properties can also be tailored through materials engineering. On a more futuristic topic, researchers at the Air Force Research Laboratory are currently utilizing deoxyribonucleic acid (DNA), derived from salmon sperm, to process materials with both the desired optical and electromagnetic properties for electro-optic devices. In addition, the DNA being used is derived from waste product, is abundant, is inexpensive and is a green material.