

Roll-to-Roll Nanofabrication Technologies with Applications in Display and Organic Photovoltaics

This talk will describe roll-to-roll patterning based fabrication technologies developed at the University of Michigan and their applications. These processes are developed to address the need for large area, scalable manufacturing of photonic elements for display and solar cell applications, including wire grid polarizers and plasmonic color filters to increase the efficiency of LCD displays; metallic wire grid transparent conductors as potential ITO replacement, as well as a new coating process for organic polymer solar cells that can produce optimized donor/acceptor nanodomains and improve the power conversion efficiency.

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L. Jay Guo is a professor of Electrical Engineering and Computer Science at the University of Michigan, with joint appointment in Mechanical Engineering, Macromolecular Science and Engineering, and Applied Physics. He has over 120 refereed journal publications, and more than 10 US patents and a number of pending patent applications. Many published work from his lab have received numerous media reports. His group's researches include polymer-based photonic devices and sensor applications, organic photovoltaics, plasmonic nanophotonics/metamaterials, nanoimprint-based nanomanufacturing technology and applications. He received PhD in Electrical Engineering from the University of Minnesota in 1997.