

Abstract Submitted
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Fabrication of Microlens Arrays on Layered Polymers Using Gray Scale mask¹ TOM ODER, CORY MERLO, MICHAEL MCMASTER, JOSHUA PETRUS, CAMRON BAGHERI, ANTHONY MAZZOCCO, MICHAEL CRESCIMANNO, Youngstown State University — Microlens arrays of different diameters ranging from 20 – 80 micrometers were fabricated on layered polymers using dry etching. The patterns of the arrays were first transferred onto a thick photoresist that was spin-coated on the polymers by a photolithographic process employing a gray scale glass mask. The final transfer of the array patterns to the polymers was carried using dry etching in a home-made reactive ion etching system. The optimized etch condition included a mixture of sulfur hexafluoride and oxygen. The etching process successfully exposed the individual sub-micron thick layers in the polymers. Physical characterization of the microlens arrays was done using atomic force microscope and scanning electron microscope. We will also present preliminary data of the optical characterization of the arrays that has so far been carried.

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