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**Complex Refractive Index Structures in a Holographic Photopolymer Optimized for Optofluidic Devices** BENJAMIN CERJAN, ANDREW PETERSON, MARTHA-ELIZABETH BAYLOR, Carleton College — We present complex refractive index features in a thiol-ene / methacrylate-based holographic photopolymer. Our photopolymer can fabricate coplanar optical features and fluid channels using three optical exposures. Previously with this material, we have fabricated linear multi-mode waveguides and 90-degree crossings of an optical waveguide and integrated fluidic channel. We now are using a simple photolithography system at 405 nm to create more interesting index structures. In this poster we present demonstrations of a variety of index structures (e.g., single mode waveguides, diffraction gratings, etc.) and explore the limitations of fabricating these structures.

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