

Abstract Submitted  
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**Toward Three-Dimensional MEMS Fabricated by Multiphoton Absorption Polymerization** RICHARD FARRER, CHRISTOPHER LAFRATTA, Merkert Chemistry Center, Boston College, TOMMASO BALDACCHINI, Division of Engineering and Applied Sciences, Harvard University, MICHAEL NAUGHTON, Department of Physics, Boston College, JOHN FOURKAS, Merkert Chemistry Center, Boston College — The use of multiphoton absorption polymerization (MAP) to produce three-dimensional structures with sub-micrometer resolution has garnered attention recently. While many of these polymeric systems are quite impressive, the functionality of a purely polymeric structure is quite limited. We have developed a method by which metal can be deposited selectively onto an acrylic polymer structure that has been fabricated *via* MAP. Post-polymerization chemical modification of the polymer provides moieties that have the ability to reduce metal ions or bind metal ions and/or metal nanoparticles. Additional electroless enhancement of the metal produces a conductive structure. This method provides a means to produce three-dimensional micro-electro-mechanical systems by way of MAP.

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