

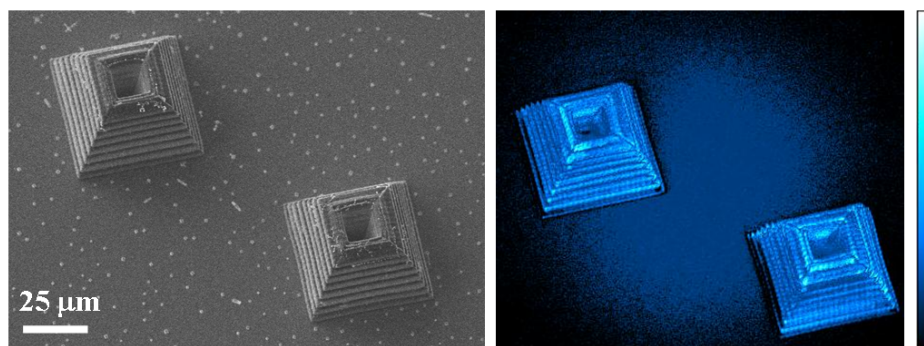
Co-sponsored by Electrical Engineering

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Characterization of Two-Photon Polymerization Using CARS Microscopy

Two-photon polymerization (TPP) is an enabling technology that allows fast prototyping of parts with sub-100 nm resolution. Due to its ability to fabricate microstructures with arbitrary three-dimensional geometries, TPP has been employed in diverse fields such as photonics, microelectronics, microelectromechanical systems, microfluidics, and bioengineering. However, no information is available to date that microscopically correlates the experimental conditions used in TPP with the properties of the ultimate microstructure. A study is presented where the distribution of polymer cross-linking in three-dimensional microstructures fabricated by TPP is visualized by means of nonlinear microscopy. In particular, coherent anti-Stokes Raman scattering (CARS) microscopy is employed to image polymer microstructures with chemical specificity. The characterization of the microstructures based on the acquired images permits rational optimization of the TPP process.



Host:
Prof. Yongfeng Lu
Department of
Electrical Engineering

Please Post

Friday, November 12, 2010
136 Jorgensen Hall, 1:30 p.m.—Refreshments following
855 North 16th Street, UNL City Campus