

Control of block-copolymer ordering via photo-thermal gradients

Kevin Yager
Brookhaven National Laboratory

Abstract:

Block-copolymers are macromolecules that self-assemble into well-defined nanostructures due to micro-phase-separation of the blocks. These materials hold great promise for the rapid formation of nanomaterials. Key to realizing this promise is the development of scalable processing methods that can order materials rapidly, as well as bias self-assembly to produce desired structures. This talk will discuss the use of thermal fields to direct ordering of block-copolymers, including recent development of a photo-thermal system for inducing sharp thermal gradients. We demonstrate rapid annealing of block-copolymers, with the possibility of controlling the orientation of the morphology.