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**Self-Assembled Polymer Nanostructures Formed from Homopolymers Induced by UV and Solvent Exposure** MINGDI YAN, SAILAJA CHADA, Department of Chemistry, Portland State University, BRADFORD PAIK — The fabrication of polymer nanostructures by self-assembly becomes an important lithography patterning technique, and much work has been focused on block copolymers. Here we report an alternative approach to self-assembled polymer nanostructures using homopolymers. It involves a simple process of illuminating a polymer thin film followed by solvent exposure. Periodic patterns were obtained on various substrates, the shapes and sizes of which depending on the molecular weight and solution concentration of the polymer, and the irradiation time. The photochemistry of polymers will be discussed and films characterized. The mechanism of the nanostructure formation will be elucidated.

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