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Self-Consistent Field Simulation of Block Copolymer Thin Films Located on Topographic Pattern JUNG GUN BAE, Nano-Structuered Complex Fluids Lab, School of Chemical and Biomolecular Engineering — Motivated by recent experiments of directed self-assembly of AB diblock copolymer(BCP) thin film induced from patterned substrates, there is need to compare with simulation. We employ self-consistent field theory(SCFT) simulation which is known as well fitted. Especially, we investigated the effect of each roughness factors, such as period and depth of eroded line patterns. The higher-order accurate and stable pseudo-spectral method is adopted to numerically solve the SCFT equations and appropriate cavity function is also employed to represent the square wave patterns. There is some correspondence between the orientation of BCP micro-domain and roughness factors. We can examine the critical condition that occur inversion between parallel and perpendicular orientation of BCP on patterned substrates.

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