

Conducting Polymers for Wiring Micro-to Nanojunctions

정민훈, 양희택, 조규진*
순천대학교 화학공학과
(gcho@sunchon.ac.kr*)

Recently, to avoid some of the inherent difficulties in metals with photolithographic procedures, and to overcome the costs of processing and the limitations of the serial nature of EBL, researchers have devised nonphotolithographic patterning techniques with conducting polymers to achieve wires less than 50 nm in diameter, including nanoimprinting, microcontact printing, and other “soft lithography” methods. Although all of methods discussed are not directly applicable in wiring micro- to nanojunctions, they are included to show how wiring has been developed from a simple patterning of conducting polymers. In the first section, techniques based on microphase separation of block copolymers as templates are reviewed. These rely on the regioselective growth of polypyrrole along the way of one domain of microphase separated thin films of block copolymer. In the second section, a new method in the fabrication of wires using a new conducting block copolymer [poly (thiophene-*b*-ethyleneoxide)] is introduced. This method uses the substrate-segment interactions that significantly influence the microdomain ordering in diblock copolymer films.