

## Fabrication Conducting Polymer Nanowires on Flexible Substrates by using Block Copolymer Nano-porous Templates

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In this study, we used polystyrene-block-poly (methyl methacrylate) copolymers (PS-b-PMMA) with PMMA cylindrical nano domains to make nano-porous structures oriented perpendicularly to the substrate. PS-b-PMMA was spin-coated onto a neutral brush modified by polystyrene-random-poly (methyl methacrylate) copolymers (PS-r-PMMA) layer attached to flexible substrates as polycarbonate(PC), poly(ethylene terephthalate)(PET). Nano porous templates with ~20nm diameter were made after UV irradiation followed by rinsing in acetic acid and ~10nm diameter was made just by rinsing in acetic acid. Hexagonally-packed nanowires of polypyrrole (PPy), poly(3,4-ethylenedioxythiophene) (PEDOT), poly(3-hexylthiophene) (P3HT) were synthesized by electrochemical-polymerization inside nano holes.