

## Biomimetic Control of 3-Dimensional Micro- and Nano-Structure of Polypyrrole

김미미, 정은영, 조규진\*  
순천대학교 화학공학과  
(gcho@sunchon.ac.kr\*)

We would like to report a new method to control three-dimensional structures of polypyrrole with micrometer to nanometer sizes by mimicking nature. We simply prearranged primitive information on the surface of plate to control the micro- to nano-structures of polypyrrole under given reaction conditions. In this paper, the primitive self-controlled growth system was demonstrated using microphase separation of polymer and block copolymer as templates for the selective nucleation of pyrrole. For the effective growth of polypyrrole, oxidant (called a trigger) was immobilized only on the templates where the nucleated pyrrole was polymerized and grown to reach a high respect ratio of 3-dimensional polypyrrole pillars with micrometer or nanometer scales.