

Nanoscale Fluoropolymer Pattern Fabrication by Capillary Force Lithography for Selective Deposition of Copper

백장미, 이 린, 성명모

한양대학교 화학과

The present work deals with selective deposition of copper on fluoropolymers patterned silicon (111) surfaces. The pattern of fluoropolymer was fabricated by nanoimprint lithography (NIL) and plasma reactive ion etching (RIE) was used to remove the residuals layers. Copper was electrochemically deposited in bare Si regions which were not covered with fluoropolymers. The patterns of fluoropolymers and copper have been investigated by scanning electron microscopy (SEM). In this work, we used two deposition methods. One is galvanic displacement method and another is electrodeposition. Selective deposition works in both cases and it shows applicability to other materials. By optimization of the deposition conditions can be achieved therefore this process represents a simple approach for a direct high resolution patterning of silicon surfaces.

Keywords: selective deposition, lithography, nanoscale, nanowire, copper