

## 새로운 친수성 나노 몰드의 제조와 응용

홍난영, 이동훈, 김동표\*

충남대학교

(dpkim@cnu.ac.kr\*)

We fabricated novel hydrophilic micro/nano structures on Si substrates using a patented hydrophilic hybrid polymer with excellent processability by soft lithography methods such as the imprinting lithographic technique and micro transfer molding ( $\mu$ TM). Nanoscaled hydrophilic polymer patterns were fabricated with economic nanoscale CD, DVD and Blue ray Disc (BD) masters using imprint lithography. Novel hydrophilic micro/nano structures were fabricated on Si substrates using the hydrophilic hybrid polymer with excellent processability by soft lithography methods, such as the imprinting lithographic technique and micro transfer molding ( $\mu$ TM) even on the sub-micron level. Also, hydrophilic material was fabricated from the BD master by means of a nano scale mold. The PDMS mold was not possible to reproduce due to high viscosity, but the hydrophilic material pattern was reproduced accurately because of its low viscosity and low surface tension. So we successfully fabricated micro/nano inorganic replica structures using novel hydrophilic molds. Moreover, three-dimensional microstructures with hydrophilic properties are of interest for their possible use in areas such as optics, for example photonic band gap structures, and tissue engineering.