Ultra-thin PDMS layer for various applications

김연상*
이화여자대학교
(younskim@ewha.ac.kr*)

We demonstrate a new strategy to achieve an anti-adhesion surface for the simple fabrication of nanostructures with high fidelity which is applicable to all types of molds. In unconventional lithography, the adhesion release is affected by various effects such as surface energy, storage and loss moduli, etc. Although perfluoro-groups have the lowest surface energy, the adhesion energy, represented by peel fracture energy, of an intrinsic PDMS surface is lower than that of a surface treated with perfluoro-groups. Here in, we present the novel surface treatment of various hard and soft molds with PDMS, which has good surface properties for the molding like normal PDMS mold. Also, we introduce various applications of ultra thin PDMS layers such as a highly transparent super-hydrophobic surface, the fabrication of a pentacene guide line for high mobility OTFT and a new LC orientation layer for advanced LCD.