

## Novel Microcontact Printing Technique for Multipatterning of Self-Assembled Monolayers

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In this article, we focus on the development of a laminated patterning technique for various types of self-assembled monolayer (SAM) by microcontact printing ( $\mu$ CP). Using this technique, three types of functional SAM with hydrophobic and hydrophilic surface properties are patterned selectively on a silicon wafer. After the line shape of hexadecanethiol ( $\text{CH}_3(\text{CH}_2)_{15}\text{SH}(\text{CH}_3)$ , HDT) is patterned on a Au substrate by  $\mu$ CP, the cross line pattern of 11-mercaptoundecanoic acid ( $\text{HS}(\text{CH}_2)_{10}\text{COOH}$ , 11-MUA) is transferred to the laminated Au substrate. Finally, the external area of the transferred SAM pattern on the sample is coated with dodecyltrichlorosilane ( $\text{C}_{12}\text{H}_{25}\text{Cl}_3\text{Si}$ , DTS). The surface property of each SAM is measured by lateral force microscopy (LFM). This laminated patterning technique enables the fabrication of bio-micro-electro-mechanical system (bio-MEMS) devices by  $\mu$ CP.

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