

## Development of molecular cryptography using polydiacetylene(PDA)

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The PDA liposome shows the color transitions from blue to red by external stimuli such as temperature, pH and ligand-receptor interactions, etc. In this study, the cryptography combined with PDA liposome and micro-patterned device was developed. At first, the mixture of 5mM PDA solution and 10% poly(vinyl alcohol) was dissolved in H<sub>2</sub>O and then was poured on the glass wafer. The glass wafer was patterned by SU-8 photoresist and microheater was spread as a source of thermal stress. When UV light was irradiated on the backside of the glass wafer for photopolymerization of diacetylene liposome, intense blue PDA pattern was appeared. After heating with microheaters, the pattern only turned from blue to red due to the thermal stress. This investigation opens new feasibility for fabrication of a confidential document.