

## Microfluidic Pressure Sensor Using Colloidal Crystal Embedded PDMS Membrane

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The microfluidic sensor that senses the pressure inside the microfluidic channel is important because knowing the pressure of the fluid inside the channel can predict the flow characteristics of the fluid. Conventional microfluidic pressure sensors have used mechanical or electrical signals which requires high cost, large size of device and external power. To overcome these limitations, we introduce microfluidic pressure sensor using colloidal crystal embedded PDMS membrane on PDMS micro-channel. The membrane can be deformed by the pressure inside the channel, and it senses the pressure through the change of colloidal crystal reflectance due to deformation. Therefore, we can detect changes in pressure inside the channel in real-time.