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Abstract
The tactile sensor has flexible characteristic that it can be applied in the application with the human body physiological monitoring for example，pulse, heartbeat, blood pressure. However the piezoelectric-type tactile sensor sensitivity needs to be improved. Therefore we introduce the concept of structural electrode for enhancement of the sensitivity of piezoelectric tactile sensor and fabricated structure by MEMS process.
A sandwich structure for flexible tactile sensor consists of top and bottom soft substrates made of Polystyrene, and in between of two soft substrates a piezoelectric thin film, PVDF, and patterned different area, are utilized as sensing material and microstructures, respectively and used shaker and force sensor.
We design our experiment of tactile sensing system. The signal of a contact pressure to the tactile sensor are sensed and processed in the DAQ System. Finally the signals are integrated for taking the force profile. The processed signals of the output of the sensor are visualized on LabVIEW in personal computer in real time. A rudimentary tactile object image measurement procedure for applied loads has been devised to recognize the silhouette of a sharp edge, square, ,circle, the shape and force distribution of the contact object are obtained using two and three-dimensional image in real time.
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