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## Developing high sensitivity strain sensor for intraocular pressure (IOP) monitoring

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This study presented a Wheatstone-bridge-configuration-based soft contact lens for the measurement of intraocular pressure (IOP). The smart soft contact lens is worn on a cornea; the curve of the lens will change according to the fluctuation of the pressure in the eyeball. The designed curvature of contact lens corresponds substantially to that of the cornea. But the sensors, or named as gauges, as the work component of the sensor, were fabricated via MEMS fabrication process on flatten substrate. Gauges transferred via conventional approach cannot effective fit the complicated structure or transfer the maximum deformation of cornea. In addition, we proposed a novel idea for releasing and embedding the sensor in non-planar substrates. We chose a copper foil as the substrate for fabricating strain sensor in MEMS as it is flatten, flexible, inelastic and can be easily etched. Copper was etched into special shape with gauge pattern on it. Then the gauge is embedded in prefabricate soft substrates. The strain sensor was released since all the rest of copper was fit to the mold morphology and sequentially be etched. This process provides a soft method to transfer sensors from plant substrate to curved surface.

### Biography

Weihua Pei has completed his PhD from The Institute of Semiconductors, CAS and Postdoctoral studies from Department of Biomedical Engineering, Qinghua University and Max Plank Institute for Microstructure Physics. His research area is focused on neural interface device and applications and he has published more than 30 papers in reputed journals.

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