

# Miniaturized Pressure Sensor



A practical implementation of a flexible and transparent capacitive sensor is disclosed. The results show that, while PDMS is an inherently nonlinear material, linear behavior with minimal hysteresis can be obtained over an appropriately small range of operation. Moreover, high resolution has been achieved during these tests.

## The Invention

A soft, miniaturized, transparent, capacitive pressure sensor. It is made of micro-patterned PDMS, with exceptional flexibility. Ideal for "smart skin" applications.

## Market Need

The pressure sensor finds applications in:  
Oil & Gas industry- Wellhead Instrumentation, Offshore, Gas Compression, Storage Tank, Pipeline Monitoring, and Sub-sea conditions.  
Power Generation- Turbine Valve and Boiler Controls, Gas Flow Measurements, Turbine Balancing, Steam Pressure Measurements, Micro-Turbines for Standby Power.  
Industrials segments- such as in-situ pressure sensing a roll-to-roll printing, coating, lamination, and other processing.

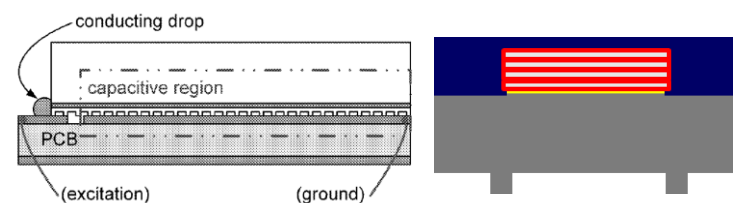
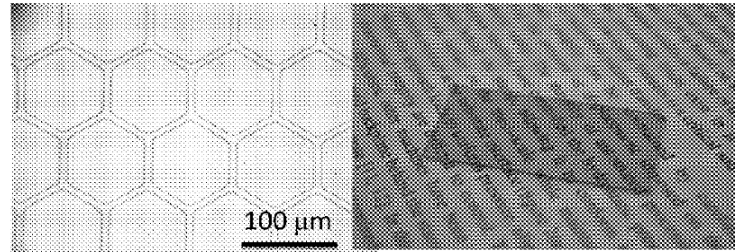
## Competitive Advantage

This sensor is an ideal one for in-situ pressure sensing. Five main advantages make the new sensor so unique. These are

- Flexible (elasticity modulus  $\sim$  3MPa)
- Very Small (a MEMS product)
- Transparent (made of PDMS)
- Linear Behavior (minimal hysteresis)
- High resolution ( $\sim$  1Pa)

## Readiness for Market / Looking for a Development Partner

This is a lab-demonstrated technology. It is beyond the proof-of-concept level. A commercial partner is needed.



## Patent Protection

This technology is covered by the pending US patent application number US13/956702.

## About KFUPM

King Fahd University of Petroleum & Minerals is a leading educational organization for science and technology. KFUPM Innovation Center is the IP management and technology licensing office tasked with taking innovation from lab to market place.

For further information please contact:  
Email: [ip-license@kfupm.edu.sa](mailto:ip-license@kfupm.edu.sa)  
Telephone: +966-13-860 7811