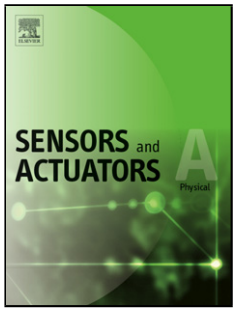

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Modeling, Fabrication, and Characterization of SiC

Concentrically Matched Differential Capacitance Output Pressure Sensors

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Highlights

- First time demonstration of a concentrically matched capacitive sensor with differential capacitance output
- A novel sensor design is proposed which consists of a concentric ring-shaped capacitor as a reference capacitor and a circular membrane which is variable capacitor responding to pressure changes.
- Detailed modeling, analysis, and optimization approaches for the proposed sensor are provided.
- Proof-of-concept results of the proposed design and characterization results both at room temperature, 100°C, and 180°C.
- Characterization results of an array of sensors to eliminate potential small capacitance issue.