

Short Communication

Integrated Capacitive and Resistive Humidity Transduction via Surface Type Nickel Phthalocyanine Based Sensor

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This paper reports the study of an organic semiconductor nickel phthalocyanine (NiPc) based thin film surface-type integrated capacitive and resistive type humidity sensor. The capacitance and resistance of the fabricated devices were evaluated at room temperature in the relative humidity (RH) range of 35-95% and 35-75% RH, respectively. In general, an increase in capacitance and decrease in resistance of the Ag/NiPc/Ag sensor was observed with the rise in humidity level. Humidity dependent capacitance and resistance properties of this sensor make it attractive for use in humidity sensors. The response and recovery characteristic of the humidity sensor were also investigated.

Keywords: surface-type humidity sensor, capacitance, resistance, nickel phthalocyanine, environmental monitoring, humidity, organic semiconductor.

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