

Structural Color Changing Sensors

OTT ID #1610

APPLICATIONS

Sensor that is real-time and continuous, for humidity, organic vapors, pressure, mechanical force, light, temperature, or specific chemical species.

TARGET PROBLEMS

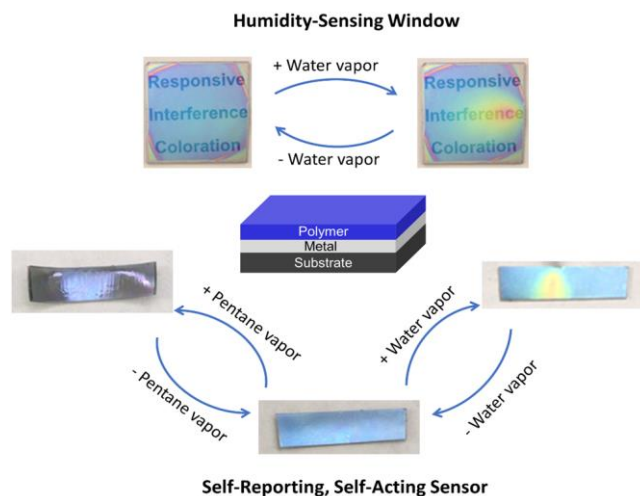
Manufacturing methods to generate structural color (i.e. physical structures) are generally tedious and costly, resulting in limited commercial use. In addition, available films are rigid, lack organic based materials, and may be subject to environmental degradation. The commercial electronic-based humidity sensors are expensive and require power. The commercial paper-based humidity sensors use cobalt chloride, which are cheap and do not require power, but have several major issues: toxicity (cobalt chloride is toxic); non-real-time sensing; limited reliability and shelf life.

KEY BENEFITS

- Lower cost
- Zero power consumption
- Flexible material
- Good processability
- Excellent corrosion resistance
- Light weight
- Fast, dynamic, and reversible response
- Spatial and temporal resolution

TECHNOLOGY

This invention uses a layering technique which exhibits structural color, specifically, the light response of a structure involving a versatile polymer layer backed by a thin versatile metal layer on a substrate.



INTELLECTUAL PROPERTY

PCT Application filed November 2019. This technology is part of an active and ongoing research program and is seeking partners for development of the final product. It is available for developmental research support/licensing under either exclusive or non-exclusive terms.

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Please reference: OTT ID 1610