

# Innovation of gas sensing system for complex application environments

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Gas sensing technology for complex applications plays an essential role in public security, while it has been a challenging topic, hampered mainly by complex interfering gases and fluctuant temperatures and humidity in conditions with a low concentration of target gas [1]. The sensing application system based on MOS sensors has the advantages of highly sensitive and fast response, their success is limited by poor crossing selectivity and humidity, which results in low signal-to-noise ratio. Accordingly, we propose a differential catalytic conversion detection technique, and designed a simple, systematic, low-cost detection system for public security precaution. It follows that the proposed concept can effectively, accurately, and continuously working in the atmospheric environment independent of condition changes, and effectively obtain target information without relying on complex algorithms. Simultaneously, such a strategy can be applied to various demanding environments by replacing catalysts and detectors to eliminate the environmental interference that has long plagued sensor research.

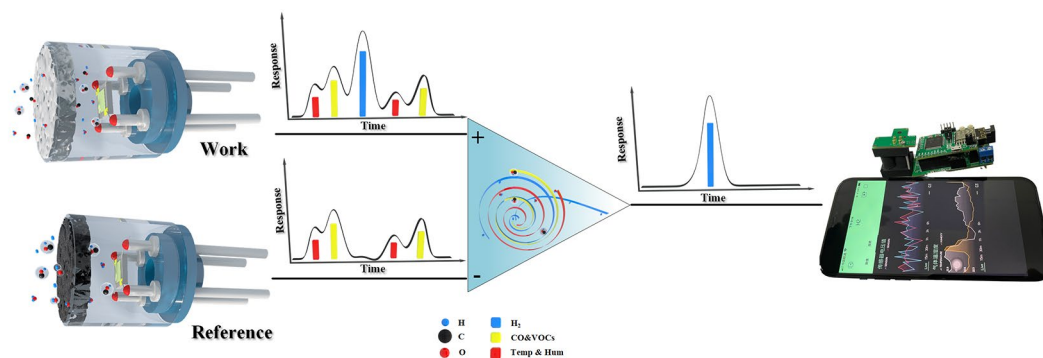


Fig. 1. Schematic drawing of differential sensing system with MOS sensor core

[1] B. Yang et al., ACS Sens. **5**, 1838 (2020).

