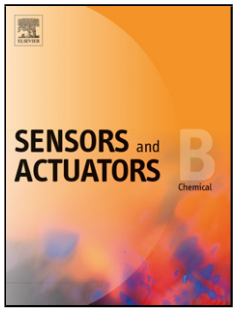

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Highly Selective Real-time Detection of Breath Acetone by Using ZnO Quantum Dots with a Miniaturized Gas Chromatographic Column

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Highlights

- We developed a portable breath acetone analyzer with high sensitivity and selectivity.
- The analyzer based on a sensor integrated with ZnO quantum dots and a miniaturized GC column.
- The analyzer can analyze a wide range of acetone concentrations without pre-concentration.
- The analyzer can be used for the analysis of small volumes of human breath (1 ml)
- The analyzer was used to perform breath analysis on volunteers who were on a ketogenic/normal diet.