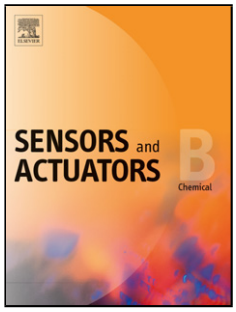

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Robust, flexible, sticky and high sensitive SERS membrane for rapid detection applications

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Highlights

- An adhesive and flexible SERS substrate on the basis of highly transparent fluorescent quantitative PCR sealing membrane (HTFQ-PCR-M) SERS substrate.
- HTFQ-PCR-M SERS substrate has several advantages, including adhesiveness to capture sample, uniformity of Raman enhancement effect, good sensitivity and thermal stability for SERS detection.
- The Raman Limit of detection of R6G could be as low as 10^{-10} M and the enhancement factor was about 10^7, it can directly collect thiram pesticide residues on the peel of fruit and do SERS measurement.
- Thermal stability of HTFQ-PCR-M SERS substrate guarantees the consistency of SERS activities at 90℃ and room temperature.

Abstract

Up to date, many efforts have been done to improve the performance of surface-enhanced Raman scattering spectroscopy (SERS) substrates, but the fabrication of a stable, sensitive and uniform SERS substrate in a simple way also