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(57) Abstract :

The present disclosure introduces a Precise and Portable RF - Based Spectroscopic Sensor for Liquid Adulteration Measurement. It is a revolutionary innovation designed to address the critical issue of liquid adulteration in industries such as food and beverage. Utilizing RF-based spectroscopy and the Complimentary Split Ring Resonator (CSRR) approach, this sensor system offers a portable and efficient solution for detecting adulterants in liquid samples. It comprises of RF sensor 102, cavity 104, VNA circuit 106, controller 108, data logger 110, PC 112, display 114, connecting wire 116 and microfluidic channel 118. The system comprises an RF sensor aligned on the surface of the sample, a cavity for sample containment, and a VNA circuit for real-time analysis of scattering parameters. REFERENCE FIG 1

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