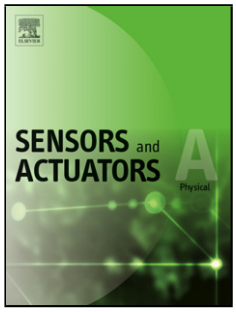

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Exploitation of an integrated microheater on QCM sensor in particulate matter measurements

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Highlights

- A grease coated QCM sensor with an integrated microheater developed to detect particulate matters is presented.
- Experimental results of particulate matter measurements, performed at two controlled working temperature of grease coating, are reported and discussed.

Abstract

Most QCM-based devices devoted to PM measurement use substrates of various kinds to collect and retain particles. The novelty of this work is the possibility to use an integrated microheater actuator to change the substrate collecting features during the particulate adsorption. In fact, this paper presents preliminary results about the exploitation of a HQCM (Heated Quartz Crystal Microbalance) in particulate matter (PM) measurements. HQCM is a 10 MHz quartz crystal microbalance with a microheater and a resistive temperature detector (RTD) implemented on its