



Ultra-precise MEMS based Bio-sensors

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Abstract:

In recent years, there has been a growing interests in the development and implementation of innovative solutions in the form of a miniaturised bio-sensors. In this regard, in the MEMS community emphasis has been given to design and fabricate highly sensitive, miniaturised biosensors. These bio-sensors are used for detection and measurement of either single and/or multianalyte/s at lower cost, size, weight, and power consumption. This talk attempts to review the state-of-the art MEMS sensors used for bio sensing applications. A device architecture based on the array of weakly coupled micromechanical resonators are reported. Owing to the weak coupling between the resonating elements in an array make these devices ultra-high sensitive to analytes/biomolecules. Due to the highly-precise output of such bio-sensors, resolution in the range of sub-actogram is also possible using such devices. Furthermore, role of these new class of MEMS resonant biosensors operating at ambient temperature and/or pressure is also studied.



Biography:

Vinayak Pachkawade currently is an independent researcher engaged in activities such as technology incubation, collaborations for R & D, peer networking, writing grant proposals, etc. He holds the Ph.D. in Engineering and Technological Science from the University of Liege, Belgium. His current research interests include state-of-the-art fabrication methods to develop microstructures, nsducers, and sensors for a range of applications in interdisciplinary research,potential CMOS-MEMS platform for sensor and electronics integration, etc.

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