Special Issue

Advances in Acoustic Wave Biosensors

Message from the Guest Editor

Acoustic wave devices have been used in materials characterization and in chemical and biological sensing for quite some time. Rayleigh wave surface acoustic wave (SAW) devices have been demonstrated in gas phase chemical sensing. Shear horizontal wave propagation in suitable cuts of piezoelectric materials has since allowed for liquid phase operation and construction of label-free biosensors using SAW devices. At higher frequencies of operation, SAW devices are much more sensitive as biosensors. Other types of acoustic waves generated in piezoelectric materials such as acoustic plate mode (APM) and flexural plate mode (FPM) have also been tried as chemical and biological sensors in the literature to a lesser extent. Theoretical understanding of these devices has progressed via modeling, including finite elements. Many advances in sensing materials and schemes have been described recently. All of these types of advances in the use of acoustic wave devices in biological sensing are welcome as contributions to this Special Issue of Sensors and are invited from researchers around the world.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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