Special Issue

CMOS Integrated Circuits for Sensor Applications

Message from the Guest Editor

The development of CMOS technology during past several decades has stimulated many efforts to fabricate sensors directly on CMOS substrates. The attractive features of this approach include the miniaturization of the devices, low power consumption, batch fabrication at industrial standards, and low cost. Yet, sensor-specific materials and additional fabrication steps may be introduced as post-processing after the CMOS fabrication. From the other side, the monolithic integration of a sensor with the necessary circuitry allows for implementing both signal amplification and signal conditioning on the same chip. Hence, despite the limited number of IC compatible materials available to realize silicon integrated sensors, it is often possible using the interface circuitry to compensate all the limitations. This makes integrated sensors competitive with discrete sensors. Moreover, the quality and reliability standards of established industrial CMOS processes render single-chip systems very attractive for rapid commercialization. The goal of this Special Issue is to draw attention to both aspects of using CMOS technology for sensor integration.

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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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