



**sensors**



*Special Issue Reprint*

## **RFID-Enabled Sensor Design and Applications**

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The dissemination of radio frequency identification (RFID) technology results primarily from the progress in the field of integrated electronics technology, as well as from our better understanding of the phenomena that determine the principles of the wireless transmission of information and energy at a distance. Until recently, RFID transponders were used only as electronic tags for marking objects. At present, these radio devices are becoming integrated into sensors of various physical quantities in order to monitor the operating state of marked objects, as well as to gather information on their working environment. On this basis, innovative applications of RFID transponder sensors can be developed towards distributed IT systems, and their implementation can be achieved in various areas of socio-economic activity (e.g., Internet of Things, Industry 4.0, smart homes and cities, smart agriculture, e-healthcare, retail and supply chain). The progress in RFID transponder sensors also stimulates the availability and continuous improvements in low-power energy-efficient integrated circuits. The combination of these advancements with the ability of energy harvested from various sources present in the surrounding environment makes the construction of autonomous battery-free systems possible. Additional development factors include the integration of transponder sensors with marked objects, as well as their use as semi-finished products in technological processes unrelated to electronic systems (e.g., textronic systems and product packaging).



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