Special Issue

Recent Advances in Magnetic GSR Sensor

Message from the Guest Editors

The GSR (Gigahertz Spin Rotation) sensor is based on the fact that a Co-based amorphous magnetic wire has a surface magnetic domain structure with circumferential spin alignment. Using a micro-coil wound around the wire, this sensor detects the change in magnetization caused by the fast spin rotation phenomenon that occurs when the GHz pulse is energized. The characteristics of the sensor include high sensitivity in the GHz range, sinusoidal output of the magnetic field, good linearity, low noise, and no hysteresis. Current projects in progress are research on the principle of GSR sensors, development of Co-based amorphous magnetic wire and micro-coil manufacturing technology, electronic circuits for GHz pulse driving, GSR device design, biomagnetism detection sensors, electronic compass gyros, and current sensors using GSR sensors for automotive application. This Special Issue is dedicated to the GSR sensor and its recent progress, as well as its outlook for future research and development.

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Deadline for manuscript submissions

closed (30 November 2023)

Sensors

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed

mdpi.com/si/91309

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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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