Special Issue

Advanced Inertial Sensors: Advances, Challenges and Applications

Message from the Guest Editors

High-precision inertial sensors play vital roles in many fields, including Newtonian and relativistic gravity field measurements in space. Among them, electrostatic suspension inertial sensors have already been applied in a series of global gravity recovery satellites, and will continue to serve as the key payloads of the next-generation gravity missions, as well as space-borne gravitational antennas. Superconducting gravity gradiometers and atomic interferometers have unique advantages in high-precision gravitational gradient measurements, especially when applied to exploratory research in experimental relativity. Considering the demand for high or even ultra precision in future planned science missions, as well as the need for versatility and miniaturizations for survey missions, etc., there remain great but exciting challenges in the R&D of advanced inertial sensors. We welcom submissions on topics including, but not limited to, advanced measurement principles, new designs, technological breakthroughs (readout systems, controls, levitations, noise rejections, etc.), data analysis and processing, potential applications and related mission designs.

Guest Editors

Prof. Dr. Peng Xu

1. Center for Gravitational Wave Experiment, Institute of Mechanics, Chinese Academy of Sciences, Beijing 100190, China
2. School of Fundamental Physics and Mathematical Sciences, Hangzhou Institute for Advanced Study, UCAS, Hangzhou 310024, China
3. Lanzhou Center of Theoretical Physics, Lanzhou University, Lanzhou 730000, China.

Prof. Dr. Jungang Lei

Technical Director of Space Environmental Load Engineering Center, Lanzhou Institute of Physics, Lanzhou 730000, China

Deadline for manuscript submissions

closed (10 May 2025)

Sensors

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed

mdpi.com/si/180484

Sensors
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
sensors@mdpi.com

mdpi.com/journal/sensors

Sensors

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed

mdpi.com/journal/sensors

MDPI

About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering), Politecnico di Bari, Via Edoardo Orabona n. 4, 70125 Bari, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Ei Compendex, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Instruments and Instrumentation) / CiteScore - Q1 (Instrumentation)