

Special Issue

Advancements in PET Instrumentation and Sensor Technologies for Enhanced Disease Diagnosis

Message from the Guest Editors

Positron emission tomography (PET) continues to redefine the landscape of molecular imaging, enabling highly sensitive and specific detection of disease processes at the cellular and molecular levels. Recent breakthroughs in sensor technologies and instrumentation, including novel scintillator materials, advanced photodetectors, and sophisticated signal acquisition methods, are rapidly enhancing PET system performance, image resolution, and diagnostic accuracy. This Special Issue invites original research articles and comprehensive reviews focused on the latest developments in PET detector design, sensor integration, system architectures, and application-driven instrumentation. We encourage submissions exploring the synergy of PET with AI-based image analysis, and hybrid or organ-targeted imaging systems, as well as studies translating these advancements into clinical solutions for oncology, neurology, cardiology, and beyond. By assembling leading contributions from the fields of physics, engineering, medical imaging, and data science, this Special Issue aims to accelerate innovation in PET technology and foster its clinical impact on global health.

Guest Editors

Dr. Alla Reznik

Physics Department, Lakehead University, 955 Oliver Road, Thunder Bay, ON P7B 5E1, Canada

Dr. Oleksandr Bubon

Physics Department, Lakehead University, 955 Oliver Road, Thunder Bay, ON P7B 5E1, Canada

Deadline for manuscript submissions

1 July 2026



Sensors

an Open Access Journal
by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed



mdpi.com/si/256685

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

[mdpi.com/journal/
sensors](https://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](https://mdpi.com/journal/sensors)



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
Department of Electrical and Information Engineering, Politecnico di
Bari, Via Orabona 4, 70126 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)