

Special Issue

Agentic and Explainable AI for Secure and Trustworthy Industrial IoT: Advances in Cyber-Physical Systems, Wireless Communication and the Cloud-Edge-IoT Continuum

Message from the Guest Editors

Industrial IoT ecosystems are rapidly evolving through Industry 4.0, seamlessly integrating physical processes, computational intelligence, and communication across the cloud-edge-IoT continuum. At the core of this evolution lies Agentic AI—which encompasses intelligent systems characterized by autonomy, adaptability, and proactive decision making, essential for managing the complexity and dynamism inherent in modern industrial operations. Agentic AI facilitates the effective integration of CPSs, industrial communication protocols, sensor technologies, wireless networks, semantic communications, and emerging 6G technologies, ensuring synchronized collaboration under stringent real-time conditions. Nevertheless, the increasing dependence on autonomous AI-driven decisions presents significant challenges concerning transparency, security, and trustworthiness. As critical operations in industry become more reliant on AI agents, there is a compelling need to ensure that these systems are transparent, secure, and reliable. For detailed information, please visit [here](#).

Guest Editors

Dr. Sarder Abedin

Department of Computer and Electrical Engineering, Mid Sweden University, 851 70 Sundsvall, Sweden

Dr. Nishat I Mowla

Applied Digitalization, Industrial Systems at RISE Research Institutes of Sweden, Storgatan 73, 852 33 Sundsvall, Sweden

Deadline for manuscript submissions

closed (25 November 2025)



Sensors

an Open Access Journal
by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed



mdpi.com/si/236550

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](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

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)