

Special Issue on Emerging Trends in Advanced Sensor Applications

Call for Papers

Recent advances in sensor technologies have accelerated the development of intelligent systems for smart manufacturing, autonomous systems, biomedical engineering, environmental monitoring, energy systems, robotics, and the IoT. The integration of AI, machine learning, edge computing, and digital twins has significantly enhanced sensing capabilities and intelligent decision-making. Meanwhile, sensing technologies have become increasingly important in surface engineering, interface science, and tribology, enabling the monitoring of friction, wear, lubrication, corrosion, material degradation, and interfacial phenomena. These developments are driving next-generation sensor applications across both research and industry.

This Special Issue highlights emerging trends in advanced sensor applications that integrate sensing technologies with AI, autonomous systems, advanced materials, and intelligent engineering. Topics include AI-assisted sensing, multisensor fusion, intelligent signal processing, and system integration. Contributions on sensors for unmanned aerial vehicles (UAVs), unmanned ground vehicles (UGVs), robotics, smart manufacturing, healthcare, structural health monitoring, energy systems, and environmental monitoring are particularly encouraged. Research on sensing technologies for surface characterization, tribology, interface analysis, coating evaluation, corrosion monitoring, and predictive maintenance is also welcome.

The scope covers physical, chemical, biological, optical, thermal, and multifunctional sensors, together with their applications in intelligent systems. Topics include AI-enabled sensing, sensor fusion, edge intelligence, digital twins, wearable and flexible sensors, smart robotics, predictive maintenance, human-machine interaction, sustainable sensing, and intelligent monitoring. Both experimental and theoretical studies demonstrating innovative methods, prototype development, or practical applications are welcome.

The aim of this Special Issue is to provide an interdisciplinary platform for researchers in materials science, mechanical engineering, tribology, surface engineering, electronics, AI, and robotics. By integrating advanced sensing technologies with intelligent algorithms and engineering applications, we seek to promote innovative sensor solutions for manufacturing, healthcare, transportation, energy, environmental sustainability, and advanced materials.

Scope:

- | | |
|-------------------------|--------------------------|
| ● AI / Machine Learning | ● Interface Science |
| ● UAV / UGV | ● Tribology |
| ● Robotics | ● Predictive Maintenance |
| ● Smart Manufacturing | ● Digital Twin |
| ● Surface Engineering | ● Materials Science |

Submission due date: 31 December 2026

Publication date (planned): March 2027

Journal website: <https://sensors.myu-group.co.jp/>

Guest Editor: Shih-Chen Shi (National Cheng Kung University) and

Tao-Hsing Chen (National Kaohsiung University of Science and Technology)

Submit to: Online Manuscript Submission System (<https://myukk-org.ssl-xserver.jp/form/>)

(Attention)

As stated in Instructions to Authors in the Guidelines, the author(s) will be obliged to pay the publication fee upon the acceptance of the manuscript for publication (for example, JPY 178200 for 10 pages in *Sensors and Materials* format). If the quality of the English of your manuscript does not satisfy the journal standards, the authors should bear the proofreading fee (JPY 10000–40000), which will be charged with the publication fee.

If you have any questions, please feel free to contact the editorial staff at the address below.

Editorial Department of *Sensors and Materials*

MYU K.K.

1-23-3-303 Sendagi, Bunkyo-ku, Tokyo 113-0022, Japan

Tel: +81-3-3827-8549, Fax: +81-3-3827-8547

E-mail: myukk@myu-inc.jp

