

Special Issue

Applied Metrology and Instrumentation for Emerging Technologies

Message from the Guest Editors

This Special Issue focuses on the intersection between instrumentation science and applied metrology, with particular emphasis on the design, implementation, and characterization of innovative instruments and measurement systems supporting these emerging domains. Of particular interest are contributions addressing novel experimental methods, advanced data acquisition and signal processing architectures, performance evaluation, uncertainty quantification, and metrological traceability. The Special Issue welcomes submissions that contribute to the development of measurement frameworks for XR systems, AI-enabled devices, neuroengineering applications, robotic platforms, and cyber-physical systems. Furthermore, studies that address sustainability metrics, environmental and human impact assessment, data ethics, and regulatory compliance—including alignment with the EU AI Act, Data Act, and GDPR—are highly encouraged. Interdisciplinary contributions demonstrating rigorous experimental methodologies and strong metrological foundations are particularly valued.

Guest Editors

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Deadline for manuscript submissions

31 July 2026



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About the Journal

Message from the Editor-in-Chief

The realization of dedicated instrumentation has always been a collateral aspect of experimental research. In addition, many groups dedicate efforts and resources solely to the development of new devices, sensors, equipment and large infrastructure, theoretical and numerical studies, and novel experimental methodologies. With *Instruments* we wish to address both established and emerging communities, also to favor the creation of innovative trans-disciplinary approaches. We see *Instruments* as an exciting high-impact journal that will soon hold a leading position in disseminating cutting edge scientific and technological research.

Editor-in-Chief

Prof. Dr. Antonio Ereditato

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