

Journal of Medical Signals and Sensors (JMSS)

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Special Issue Invitation:

In addition to regular paper submission to JMSS, we are happy to invite the authors to submit their papers to the following special issue:

Special issue on *AI-Driven Development of Medical Devices: Evidence-Based Design and Clinical Efficacy Assessment*

The integration of artificial intelligence (AI) into the design, development, and evaluation of medical devices has ushered in a new era of personalized and intelligent healthcare. With advancements in machine learning, deep learning, and real-time data analytics, medical devices can now provide dynamic support for diagnosis, monitoring, and therapeutic interventions. However, the translation of AI-based technologies into clinically effective medical devices requires rigorous evidence-based development and systematic clinical efficacy evaluation to ensure patient safety, reliability, and regulatory compliance. This special issue aims to explore the end-to-end pipeline of AI-enabled medical device innovation, from algorithm design and data integration to device prototyping, validation, and clinical deployment. Emphasis will be placed on clinical trial designs, real-world evidence (RWE), performance benchmarking, and health outcomes evaluation. Submissions that bridge the gap between computational innovation and clinical impact are especially welcome. As the demand for regulatory-grade AI medical devices continues to grow, so does the need for robust methodologies that can demonstrate clinical validity, utility, and cost-effectiveness. This special issue encourages contributions that provide insights into regulatory frameworks, human-centered AI design, explainability, and multi-center validation of AI-driven devices across diverse clinical settings.

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Topics of inters:

- Potential topics include, but are not limited to:
- Evidence-based frameworks for the development and validation of AI-powered medical devices.
- Real-world studies and clinical trials assessing clinical efficacy, safety, and usability of AI integrated devices.
- Evaluation methodologies for AI algorithms embedded in diagnostic or therapeutic systems.
- Comparative studies between AI-enabled and conventional medical devices.
- Design and testing of wearable, implantable, or portable AI-assisted medical technologies.
- Human-AI interaction and clinical workflow integration of AI-powered devices.
- Regulatory considerations and approval pathways (e.g., FDA, CE) for AI medical technologies.
- Bias mitigation, fairness, and explainability in AI-driven medical device systems.
- Integration of multi-modal clinical data (e.g., imaging, biosignals, genomics) into intelligent device platforms.
- Economic evaluation and health technology assessments (HTA) of AI medical devices.

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Important Dates:

- ✓ Submission deadline: March 31, 2026
- ✓ Author notification: May 31, 2026
- ✓ Revised papers due: June 30, 2026
- ✓ Final notification: July 30, 2026
- ✓ The Publication of the special issue will as per the policy of journal

The authors should register in <https://review.jow.medknow.com/jmss> to submit their work to JMSS. It's a self-explanatory and simple two-step process.

NOTE: Authors should mention in the cover letter which special issue their article is related to.