IEEE Sensors Council

CALL FOR PAPERS

Special Issue on
Non-contact Electromagnetic Sensing

The field of non-contact electromagnetic sensing has made significant strides in recent years. Emerging applications include microwave medical tomography, millimeter-wave radar and lidars for autonomous vehicles and drone navigation, and the sensing of 5G+/6G Channel State Information (CSI). Additionally, artificial intelligence (AI) has garnered considerable attention for its role in big data fusion from diverse sensors, making it one of the most powerful signal processing techniques available. The proposed Special Issue will provide scholars within the IEEE Sensors Council community and beyond with a comprehensive overview of the latest advancements in this dynamic field.

The Special Issue on "Non-contact Electromagnetic Sensing" focuses on state-of-the-art advancements in electromagnetic/optical sensors, imaging, and tomography systems. It covers theoretical foundations, modeling, simulation, and modern signal-processing techniques such as deep learning. Topics of interest include, but are not limited to, the following:

- Electromagnetic sensors
- Optical sensors
- Imaging systems
- Tomography systems
- Theoretical foundations of non-contact electromagnetic sensing
- Modeling and simulation of non-contact electromagnetic sensing systems
- Signal processing techniques for non-contact electromagnetic sensing
- Deep learning applications in non-contact electromagnetic sensing
- Non-invasive sensing techniques
- Long-range sensing technologies
- Spectroscopy applications in non-contact electromagnetic sensing
- Radar-based sensing and imaging
- Lidar and laser-based sensing techniques
- Infrared and thermal sensing
- Microwave and millimeter-wave sensing
- Acoustic and ultrasonic sensing techniques
- Multispectral and hyperspectral imaging
- Compressive sensing and sparse signal processing
- Machine learning and artificial intelligence in signal processing
- Data fusion and sensor integration
- Noise reduction and signal enhancement techniques
- Real-time signal processing for non-contact electromagnetic sensors
- Adaptive filtering and array processing
- Feature extraction and pattern recognition in sensing data
- Sensor calibration and validation techniques

Submission Guidelines:

Solicited and invited papers shall undergo the standard IEEE Journal of Selected Areas in Sensors (JSAS) peer review process. All manuscripts must be submitted online, via the IEEE Author Portal, see https://ieee.atyponrex.com/journal/jsas. When submitting, please indicate in the "Manuscript Type" roll-down menu that the paper is intended for the "Non-contact Electromagnetic Sensing" Special Section. Authors are particularly

encouraged to suggest names of potential reviewers for their manuscripts in the space provided for these recommendations in Manuscript Central. For manuscript preparation and submission, please follow the guidelines in the Information for Authors at IEEE Journal of Selected Areas in Sensors web page, https://ieee-jsas.org/

Important dates (tentative):

July 31st, 2025:	Deadline for Manuscript Submission
Sept 1st, 2025:	Completion of Final Review
Nov 30th, 2025:	Publication

Upon acceptance papers appear as Early Access (preprints) in IEEE Xplore and are fully citable.

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