



2nd IEEE International Conference on Next Generation Electronics (NELEX-2026)



CALL FOR PAPERS - SPECIAL SESSION 8 (Track 14): Next-Generation Array Signal Processing and Smart Antennas

ABOUT THE SPECIAL SESSION

This special session focuses on the evolving landscape of sparse array signal processing, addressing the critical need for high-resolution Direction-of-Arrival (DOA) estimation and beamforming with reduced hardware complexity. By leveraging coarray concepts, compressed sensing, and optimization techniques, sparse arrays allow for the identification of more sources than sensors, significantly enhancing system efficiency.

This session invites contributions on diverse topics; including mixed-field DOA estimation, optimum sparse array formulations (based on difference and/or sum coarray principles), and hardware implementation. Furthermore, we explore the intersection of sparse arrays with deep learning for robust localization in non-ideal environments. The session bridge the gap between theoretical array synthesis and practical applications in Radar, Sonar, 5G/6G testbeds, and biomedical imaging. Sparse array geometries that exploit coptime and hested structures are particularly welcomed.

TENTATIVE TOPICS (Not Limited To)

- Sparse Arrays and Coarray Analysis
- DOA Estimation and Source Localization
- Beamforming and DOA Estimation using Deep Learning
- ISAC and 6G Array Testbeds
- FPGA Implementation of Array Processing
- Array Synthesis and Optimization
- Microphone Arrays and Sound Source Localization

SPECIAL SESSION ORGANIZERS

Dr. Ashish P, School of Electronics Engineering (SENSE), Vellore Institute of Technology, Vellore, India, ashish.p@vit.ac.in

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IMPORTANT DATES

Paper Submission Deadline: 01 April 2026

Acceptance Notification: 10 April 2026

Final Manuscript & Registration: 20 April 2026

Conference Dates: 08-10 May 2026

SUBMISSION GUIDELINES

Papers must follow the NEleX 2026 conference template. All submissions will undergo the standard IEEE peer-review process. Accepted papers will be included in **IEEE Xplore** and are **Scopus Indexed**.

SUBMISSION LINK

<https://vit.ac.in/NEleX-2026/authors.html#submission>