



# IEEE Sensors Council



## CALL FOR PAPERS

IEEE Sensors Journal Special issue on

### Smartness and Robustness of Spatial Environment Perception in Automated Systems

Automated systems have recently attracted tremendous interest in various applications, including smart homes, smart agriculture, and autonomous vehicles. However, open issues on the smartness and robustness of sensing systems in real applications limit commercial deployment, mainly on small and medium scales. Modern sensor design using platform approaches and low-cost development processes emphasizes the versatility of multiple sensor systems in a multitude of scenarios. Smart sensors with high versatility adaptively adjust their sensing mode according to external environmental events. In terms of robustness, modern sensing systems typically require powerful self-diagnostic ability at the circuit, sensor, and system levels to monitor performance degradation and pinpoint potential causes. In addition, the substitutability between sensor technologies, which allows unavailable sensors to be replaced by other sensor technologies, can also increase the system's robustness. This special issue aims to bridge academic sensor technology research with rapid sensor technology development in the industry. Original research papers and reviews are sought in the following areas, including (but not limited to):

- Versatility and scalability in the sensor design for spatial environment perception purposes
- Disturbance localization and performance degradation detection via smart diagnosis
- Cognitive and collaborative sensors to enhance the smartness and robustness of sensing systems
- Sensor technologies related to sensory networks, wireless communications (5G and beyond 5G), V2X technology, Internet of Things, localization, and Wi-Fi-based sensing
- Data-drive-based machine learning for sensor modeling and sensor data processing
- Sensor reliability in harsh environments
- Sensor fusion within the platform to boost the smartness of individual sensors, and the related smart interfacing electronics
- Smart sensing and perception solutions with valid real-time capability and optimized cost-performance ratio
- Sensor design and signal processing algorithms related to adaptive and automatic calibration

Solicited and invited papers shall undergo the standard IEEE Sensors Journal peer review process. All manuscripts must be submitted on-line via the IEEE Manuscript Central, see <http://mc.manuscriptcentral.com/sensors>. When submitting, please indicate in the “Manuscript Type” roll down menu that the paper is intended for the “Smartness and Robustness of Spatial Environment Perception in Automated Systems” Special Issue. For manuscript preparation and submission, please follow the guidelines in the Information for Authors at the IEEE Sensors Journal web page, <https://ieeeseensors.org/sensors-journal/>.

#### Deadlines:

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| • Manuscript Submission:                     | August 30, 2023   |
| • Notification of Acceptance:                | December 30, 2023 |
| • Final Manuscript published in IEEEExplore: | February, 2024    |

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