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IEEE Sensors Journal Special Issue on

“Advanced Sensors and Sensing Technologies for indoor positioning and navigation”

Many services, such as personal navigation, search and rescue, robot and fleet management, healthcare would greatly benefit from ubiquitous, accurate, robust and seamless positioning technologies. While mature GNSS solutions exist for outdoor spaces, more than ten years of research and development of sensing technologies have not yet led to a widely available offer of generic and affordable standard solutions for indoors. Nonetheless, year after year the insight that researchers have offered into indoor localization provides us with more methods and the array of usable sensors widens with technological progress. Hybridization of sensors data, smart capture of environmental data, benchmarking of sensing and positioning technologies are all at the heart of indoor positioning and indoor navigation innovations.

This Special Issue of the IEEE Sensors Journal is devoted to the presentation of innovations and improvements in the field of advanced sensors and sensing technologies for indoor positioning and navigation including theory, design, modelling, configuration, characterization, sensor data processing, data analysis, and applications. Original research contributions and review papers are sought in areas including:

- Sensors and sensing technologies for indoor navigation and tracking methods: AoA, TOF, TDOA based localisation, RSSI and magnetic fingerprinting, PDR, IMU and hybrid systems, UWB, ultrasound, optical systems, RFID, radar, device-free systems, mapping, SLAM
- Sensing frameworks and fusion for hybrid positioning
- Cooperative sensing, machine learning systems
- Sensors for building indoor maps and 3D models
- Sensors for human motion monitoring and modelling
- Sensors for robotics and UAV positioning and navigation
- Sensors for seamless systems: HS-GNSS, indoor GNSS, pseudolites, RTK GNSS with handheld devices, mitigating GNSS error when switching to indoor, industrial metrology & geodetic systems, iGPS
- Self-contained sensors for positioning and navigation
- Wearable and multi-sensor systems for indoor navigation and human motion
- Sensing for location-based services and applications
- Sensors benchmarking, assessment, evaluation, standards

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” dropdown menu and by e-mail to Leigh Ann Testa, testa.l@ieee.org, that the paper is intended for the “Advanced Sensors and Sensing Technologies for indoor positioning and navigation” Special Issue. 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 the IEEE Sensors Journal web page, <http://www.ieee-sensors.org/journals>

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