

Guest Editorial

Special Section on Sensors Applications Symposium

THE Sensors Applications Symposium (SAS) 2020 was the 15th edition of the flagship professional event in the sensor technology and application area organized by the IEEE Instrumentation and Measurement Society (IMS). It brought together sensor developers, innovators, and users, providing a forum for the exploration of new ideas, developments, implementations, and applications in the field. SAS 2020 was scheduled to take place on March 9–11, 2020, in Kuala Lumpur, Malaysia. However, the outbreak of the Covid-19 led to the sudden and necessary decision of converting the event to a virtual conference. Indeed, IEEE SAS 2020 was arguably the first IMS and one of the first IEEE conferences that took place in that way, thus acting as a model for subsequent events. Nonetheless, the 2020 edition of the IEEE SAS has drawn significant professional interest worldwide leading to receiving 96 submissions of which 73 were accepted for the presentation at the virtual event. The review process of the symposium was designed to ensure the high quality of accepted papers authored by specialists from all over the world. Accepted papers were divided for presentation into ten virtual Oral Sessions and one large virtual Poster Session available for online access by the attendees during the three weeks of the virtual event.

A wide range of subject areas was covered by IEEE SAS 2020, such as medical and biomedical applications, Internet of Things, MEMS and nanosensors, remote sensing and sensor networks, innovative sensing, smart agriculture, smart buildings, sensors for smart mobility, robotics, automation, and data fusion. Besides, hot topics such as nonlinear sensing, machine learning and embedded processing were also addressed in the form of Special Sessions.

Authors of the IEEE SAS 2020 papers were invited to submit an extended version of their works to the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT (TIM). As a result of the rigorous and arduous review process, six papers were accepted for publication in this Special Section of the TIM on IEEE SAS 2020.

The topics covered by the selected papers highlight some of the main subject areas typically addressed at the SAS forum.

In particular, the selected papers deal with: indoor positioning using multiple receivers and machine learning; air pollution monitoring based on advanced sensors and artificial intelligence combined with the use of LoRaWAN connectivity; human pose estimation employing deep neural networks; localization for mobile Internet-of-Things (IoT) devices based on real-time kinematic and LoRa; low-cost flexible sensors for assistive technology applications; and magnetic field detection employing plastic optical fiber surface plasmon resonance sensors and magnetic fluids. We are sure you will find those papers interesting and useful for your research work.

We are very grateful to the Technical Program Committee Co-Chairs and Special Session Chair of IEEE SAS 2020, for their excellent management of the paper screening process that guaranteed the high quality of the event. We would like to thank all reviewers for having produced very objective and reliable reports on the submissions. We would also like to thank all the authors, for having presented their excellent papers contributing to the advanced content and high quality of the IEEE SAS 2020. A particular acknowledgment is going to the IEEE MCE team and Conference Catalyst LLC, for their exceptional competence and huge efforts put in organizing the successful IEEE SAS 2020 virtual event.

Finally, we would like to present our special thanks to Ms. Reta Wehmeier, for her precious support during the whole submission and review process of this TIM IEEE SAS 2020 Special Section.

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