

# Guest Editorial

## Special Issue on Papers From the IEEE FLEPS Conference 2020

**P**RINTED devices on flexible and disposable substrates are receiving considerable interest for the realization of low-cost electronic and sensing systems. As a result, new methods such as resource-efficient printing and multimaterial additive manufacturing have been explored to develop a wide range of easily deployable systems such as displays, sensors, and smart tags. The technologies developed for silicon-based planar electronics and solid-state sensors are also being re-purposed to meet the demands in the emerging field of flexible and printed sensors. This trend will continue as all market indicators point towards significant growth in this area. At the same time, the rapidly growing e-waste issue and its adverse socioeconomic impact have highlighted the need for sustainable electronics and a circular economy, where naturally degradable electronics, design for sustainability, and recycle and reuse are critical factors. As a result, flexible, printed, and disposable sensor technology, solution-processable nanomaterials, and novel printing techniques are likely to bring about a new wave of green technologies. Considering these developments, it became necessary to provide a forum to discuss the latest developments in the field and to bring together the academic and non-academic sectors to carefully lay the future roadmap. The IEEE International Conference on Flexible, Printable Sensors and Systems (IEEE FLEPS) provides such a forum and aims to be the premier conference in the world. The high standards of the conference are ensured by the directions set by the steering, organizing, and technical committees formed by world-leading experts in the field.

Initiated by the IEEE Sensors Council, IEEE FLEPS 2020 has done a remarkable job in promoting flexible and printable sensor systems and providing a platform to share the latest results in all multidisciplinary topics covered by its scope. The 2020 edition of the FLEPS Conference was organized as a virtual conference on August 16–19, 2020. It was initially planned to be an in-person conference in Manchester, U.K. However, due to the COVID-19 outbreak, the conference was moved to a virtual platform as the safety and well-being of all conference participants is our priority. We are glad that with more than 700 registered participants, the virtual IEEE FLEPS 2020 turned to be five times bigger than last year's conference.

The call for papers for FLEPS 2020 attracted more than 100 presentations. The papers submitted to the conference went through a rigorous peer-review process, with each paper reviewed by at least three reviewers. After reviews, all papers went through a detailed scrutiny by the Technical

Program Committee (TPC), and finally, about 90 papers were accepted. The papers presented at the FLEPS 2020 were spread over the 12 sessions, each starting with an invited talk and followed by four contributed talks selected by the TPC based on the peer review outcome. The technical program also included six well-attended tutorials. In addition, a special open-access panel discussion was organized to understand the opportunities and challenges related to future publications. All presented papers were published in IEEE Xplore.

The authors of accepted papers were encouraged to submit an extended version of their paper, if they so wished, to be included in a special issue of the IEEE SENSORS JOURNAL dedicated to the FLEPS Conference. The authors were informed that their submissions will be subject to the standard rigorous review process of the IEEE SENSORS JOURNAL. This review process was handled by the Guest Editors of this Special Issue. Finally, from among those papers submitted, 24 papers were accepted for this Special Issue.

We would like to thank the authors and reviewers for maintaining an exceptionally high-quality standard. Most of these papers went through a revision in response to reviewers' questions and comments. We were very particular about accepting papers only after the peer-review process was complete in all its rigor. Thus, these papers have come to this Special Issue through a rather long process starting with the conference paper-review process that selected them first for the presentation at FLEPS 2020. We would like to express our gratitude to all those reviewers for their precious time.

We would like to thank Ms. Eileen McGuinness and Ms. Leigh Ann Testa for their support in the publication of this Issue. We also express our gratitude to the Editor-in-Chief of IEEE SENSORS JOURNAL, Prof. Sandro Carrara, for his encouragement and continuous support for a successful publication of this Special Issue.

RAVINDER DAHIYA, *Guest Editor*  
University of Glasgow  
Glasgow G12 8QQ, U.K.  
(e-mail: ravinder.dahiya@glasgow.ac.uk)

AROKIA NATHAN, *Guest Editor*  
Darwin College  
University of Cambridge  
Cambridge CB2 1TN, U.K.  
(e-mail: an299@cam.ac.uk)

LUIGI G. OCCHIPINTI, *Guest Editor*  
University of Cambridge  
Cambridge CB2 1TN, U.K.  
(e-mail: luigi.occhipinti@eng.cam.ac.uk)