Editorial for the JEDS Special Issue for EDTM 2021

This Special Issue of the IEEE JOURNAL OF ELECTRON DEVICES SOCIETY is a selection of papers presented at the 2021 **IEEE Electron Devices Technology and Manufacturing (EDTM) Conference**. Sponsored by IEEE Electron Devices Society (EDS), IEEE EDTM is a premier conference providing a unique forum for discussions on a broad range of device/manufacturing-related topics. EDTM rotates among the hot-hubs of semiconductor manufacturing in Asia. EDTM2021 was successfully held in Chengdu, China, during March 9-12, 2021. The Theme for EDTM2021 was *Intelligent Technologies for Smart and Connected Life.* Due to the pandemic, EDTM2021 was held in hybrid formats including a large onsite/in-person gathering and a virtual conference. EDTM2021 was a four-day conference comprising a one-day tutorial/short course/workshop event and a three-day technical program including both oral and poster sessions. On Day-1, EDTM2021 was kicked off with two parallel tutorial tracks and four concurrent short course sessions. The two tutorial series focused on "Flexible electronics + Display" and "Future Communication and Computing." The four short course sessions covered "Advanced Memories and Emerging Applications," "Quantum Computing Technologies," "Advanced Processing and Manufacturing" and "Ultra/Wide Bandgap Power Electronics." Total twelve lectures were given by globally renowned experts. The highlight on Day-1 also includes the "HIR Workshop Organizing Committee" organized by the IEEE Heterogeneous Integration Roadmap Committee and featured by eighteen experts from around the globe discussing the advances, challenges and future of HI technologies. EDTM2021 Technical Program includes six Keynote Speakers talking about various hot topics, including Dr. Haijun Zhao (Co-CEO of SMIC) on "Creating Values through Innovations on Mature Nodes of Technologies of Integrated Circuits," Prof. Xiang Zhang (President, University of Hong Kong) on "How to build a camera with highest resolution: a photonics perspective," Mr. Teruo Hirayama (Executive Chief Engineer, Sony Corp.) on "The power of image sensors for innovation," Prof. Arokia Nathan (University of Cambridge) on "Thin Film Transistor Architectures for Advanced Analog Signal Processing," Prof. Ru Huang (Vice President, Peking University) on "Ferroelectric-based device: revived as a low-power technology booster for diverse applications" and Dr. Jeff Xu (Director, HiSilicon Research) on "Ubiquitous Computing Drives Future Semiconductor Technology." The Plenary was closed with a Closing Banquet Speech given by Prof. Ilesanmi Adesida (Provost, Nazabaryev University) entitled "The Development of an International Research University in the Big Steppe of Kazakhstan." EDTM2021 Technical Program core contains about 289 technical papers accepted after strict peer reviewing, including 172 oral (organized into 36 Sessions) and 117 interactive presentations. EDTM2021 had a total registered attendance of 800+, including 492 for the Technical Program (283 in-person and 209 virtual), 156 for Tutorials and 158 for Short Courses.

This Special Issue contains 28 papers selected from about 289 presentations at EDTM2021, reflecting both recent R&D advances and the trending in the electron device technology and manufacturing field. While the EDTM2021 conference papers were selected through strict peer reviewing by the Technical Program Committee, the papers invited to the JEDS SI were significantly expanded from their conference briefs, at least 30% in materials, and were again peer-reviewed following the normal IEEE journal review criteria and procedures. These accepted papers, coming from both the industry and academia, cover a broad spectrum of various technical topics, such as, materials, devices, characterization, modeling, simulation, processing, manufacturing, packaging, reliability, applications, etc. The Guest Editor Team appreciates the authors for their hard work in preparing and revising their manuscripts. The Editors also wish to express their deepest gratitude to the reviewers for their efforts and dedication to conduct the serious reviews within a short time period. This Special Issue would not have been possible without their expert advices.

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