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## FOREWORD

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### Special Section on Analog Circuits and Their Application Technologies

It is my great honor and pleasure to announce the publication of this special section on analog circuits and their application technologies.

The rapid progress of 5G, AIoT, quantum computing demands the evolution of integrated circuits in the fields such as wireless/wireline communication, sensing systems, health/biomedicine, power management, edge computing, and cryo-CMOS, where analog circuits have been playing a crucial role. Analog circuits with high performance and enhanced functionality as well as low power and low cost are challenging to design but strongly demanded for next-generation applications. Thus, this special section aims to advance the state of the art in analog circuits and their application technologies.

This special section has 6 excellent papers including 2 invited papers, 2 regular papers, and 2 brief papers covering phase shifter for satellite communication, wideband distributed amplifier, quick-start-up clock-and-data recovery circuit, and supply voltage monitor for biofuel cell. The invited paper by Prof. Kousuke Miyaji from Shinshu University presents “Design and Integration of Beyond-10MHz High Switching Frequency DC-DC Converter”. The invited paper by Prof. Kentaro Yoshioka from Keio University presents “A Tutorial and Review of Automobile dToF LiDAR SoCs: Evolution of Next-Generation LiDARs”.

On behalf of the editorial committee, I would like to express our sincere appreciation to all the authors who submitted their manuscripts for this special section. I would also like to take this opportunity to thank all the reviewers and all of the editorial committee members, as listed below, for their enthusiastic support. Finally, I would like to thank Prof. Zule Xu and Mr. Yohei Nakamura for their extensive contribution as guest editors.

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Zule Xu (The Univ. of Tokyo), Yohei Nakamura (Hitachi, Ltd.)

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Makoto Takamiya (The Univ. of Tokyo), Guest Editor-in-Chief

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**Makoto Takamiya** (*Member*) received the B.S., M.S., and Ph.D. degrees in electronic engineering from the University of Tokyo, Japan, in 1995, 1997, and 2000, respectively. In 2000, he joined NEC Corporation, Japan, where he was engaged in the circuit design of high speed digital LSI's. He joined University of Tokyo, Japan in 2005, where he is now a Professor of Institute of Industrial Science. From 2013 to 2014, he stayed at University of California, Berkeley as a visiting scholar. His research interests include the digital gate driver and sensor ICs for power electronics and the integrated power management circuits for automotive and industrial applications. He is a member of the technical program committee of IEEE Symposium on VLSI Circuits and IEEE Asian Solid-State Circuits Conference. He formerly served on the technical program committees of IEEE International Solid-State Circuits Conference (ISSCC) from 2015 to 2020 and IEEE Custom Integrated Circuits Conference from 2006 to 2011. He was a Far East Regional Chair in ISSCC 2020. He was a Distinguished Lecturer of IEEE Solid-State Circuits Society from 2019 to 2020. He received 2009 and 2010 IEEE Paul Rappaport Awards and the best paper award in 2013 IEEE Wireless Power Transfer Conference.

