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Energy Efficient Circuit Design Techniques for Low Power Systems

Guest Editor:

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Deadline for manuscript submissions:
closed (28 February 2021)

Message from the Guest Editor

Low power consumption enables extension of system lifetime and also reduces the total system size by using smaller energy storage devices (battery or supercapacitor). One basic technique to reduce the average power consumption is “duty cycle” switching the operation between long ultra-low-power sleep mode and short high-performance mode. Based on this method, advanced systems have recently been developed by suppressing power consumption lower in sleep mode and improving energy efficiency of circuit operation in active mode. Also, circuits for energy harvesting, power conversion, and energy storage management are critical to extend the system lifetime and run load circuits more energy efficiently with the minimum margin.

Topics in this Special Issue include but not limited to:

- Analog or digital circuit design techniques to enable low-power systems;
- Ultra-low-power circuit designs for standby-mode operation;
- Energy-efficient circuit designs for active-mode operation;
- Circuit designs for energy harvesting and power conversion;
- Smart management circuits or systems for energy storage devices;

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Message from the Editor-in-Chief

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