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Power Management of Energy-Autonomous Nodes and Systems

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Deadline for manuscript submissions: closed (20 August 2023)

Message from the Guest Editors

Dear Colleagues,

The Internet of Things (IoT) paradigm is having a pervasive impact on modern society. The ubiquitous character of IoT nodes implies that they must be energy autonomous and untethered. In this regard, power autonomy is achieved by harvesting energy from the environment using transducers, such as photovoltaic (PV) cells, thermoelectric generators (TEG), and vibration transducers. Nevertheless, due to the heavy dependence of their output signal from operating conditions, these transducers are often unsuitable to feed directly to the circuit where they are applied. Therefore, IoT nodes employ a power management integrated circuit (PMIC) to adapt the generated power and maximize conversion efficiency. The main components of a PMIC are power converters, clock generators, and control circuitry (amplifiers, filters, references etc.) that must also enable self-startup in critical conditions, i.e., low voltage and low power levels provided by external energy harvesters.



mdpi.com/si/130774







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Editor-in-Chief

Message from the Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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