



Advances in Electronic Circuits for Energy Harvesting Based Wireless Sensor Networks

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Message from the Guest Editor

Wireless sensor networks (WSNs) devices are frequently employed in environments or infrastructures where a wired energy supply is not present or its distribution is not economically convenient. Energy harvesters (EHs) are able to convert otherwise wasted forms of energy into electricity, are an effective solution for energy supply. However, the use of EHs is strongly limited by the low electrical power that they are able to generate. Therefore, the energy challenge emerges as one of the most critical issues in WSN design. As every sensor node requires power for data collection, processing, and communication, designing WSNs requires the optimization of efficiency from both the supply and the consumption points of view. With reference to supply efficiency, it is required to optimize both energy harvesting devices and the electronic interface placed between the energy harvester and the load, for maximum power point tracking (MPPT) purposes. With reference to consumption efficiency, it is required to optimize sensor node electronics, as well as network configuration, organization, and routing.





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