

**IEEE Internet of Things Journal**  
**Special Issue on**  
**Green IoT for Future Space-Air-Ground-Ocean Integrated Networks and Applications**

Internet of Things (IoT) plays a major role in providing seamless interconnection among heterogeneous devices. To serve future globally ubiquitous applications and services, future IoT will aggressively extend its coverage by integrating communications in different spatial domains to form the space, air, ground, and ocean integrated network (SAGOI-Net). Owing to the ultra large geographic scope and dynamics in free space, SAGOI-Net will involve a lot of battery-powered network nodes, such as satellites, unmanned vehicles, and underwater devices. Considering the battery limitation, communications and networking with high energy efficiency will be essential to future system. Green SAGOI-Net aims at not only bringing ubiquitous connectivity to every corner of the earth but also making more data delivered with the same energy consumption.

On the one hand, we suggest to build the green IoT for future SAGOI networks by taking into account the recent technological breakthroughs, such as radio frequency (RF) energy harvesting, simultaneous wireless and information transfer (SWIT), ambient backscatter communications (AmBC), etc. On the other hand, the integration of various SAGOI networks offers a new opportunity of energy-saving via coordinating the operation of different networks and offloading the energy-consuming tasks to power-rich or power-efficient nodes.

It is quite a challenge to develop a holistic green solution for the SAGOI-Net with ultra-dynamic, autonomous and decentralized characteristics. The goal of the special issue is to raise the research attention on green IoT and promote the principle of energy efficiency in the design of future SAGOI IoT. This special issue solicits the following topics, but not limited to:

- Novel visions, concepts and theories of SAGOI-Net green IoT
- Promising models, protocols and architectures for SAGOI-Net green IoT
- Artificial Intelligence and big data-driven self-sustainable SAGOI-Net IoT
- Ambient backscatter communications and symbiotic radio based green IoT
- Energy-efficient beamforming, modulation, and coding techniques for green IoT
- RF energy harvesting, simultaneous wireless and information transfer for green IoT
- Cloud/edge computing and task/data/computation offloading for green IoT
- Novel performance metrics and indicators for heterogeneous green IoT
- Infrastructure/middleware/testbeds for heterogeneous green IoT
- Privacy, security and reliability issues for SAGOI-Net green IoT

**Important dates (Tentative Schedule)**

Submissions Deadline: April 15, 2022

Revision Due: July 15, 2022

Final Manuscript Due: August 30, 2022

First Reviews Due: May 30, 2022

Sec. Reviews Due/Notification: August 15, 2022

Publication Date: 2022

## **Submission Guidelines**

Authors need to follow the manuscript format and allowable number of pages described at:

<http://iee-iotj.org/guidelines-for-authors/>. To submit a manuscript for consideration for the special issue, please visit the journal submission website at: <https://mc.manuscriptcentral.com/iot>.

## **Guest Editors**

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