

Special Issue on
Green Communication and Networking

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Energy crisis and rising concerns on Greenhouse Gas (GHG) emissions have always been crucial issues faced by the development of wireless communication techniques. As a more energy-efficient network architecture, green communications and networks (GCNs) have recently attracted significant attention from academia and industry. In particular, the newly designed GCN not only can alleviate the greenhouse effect and decrease the operational expenditure, but also can attain sustainable development due to the descending independence from fossil fuel and the exploitation of renewable energy resources. In order to enable the technical and economical GCNs, several emerging techniques have been proposed including energy-efficient and energy harvesting techniques. Although these emerging techniques have drawn considerable attention and have been studied recently, there are still many open theoretical and practical problems to be addressed. Specifically, most of the existing works have focused on optimizing a single objective of GCNs, such as energy efficiency. Since there are multiple conflicting objectives in GCNs (e.g., spectral efficiency and energy efficiency), multiobjective strategies are required to be considered in order to achieve a good tradeoff among the conflicting objectives. Moreover, since nonorthogonal multiple access techniques have advantages in energy efficiency and massive connectivity, how to apply nonorthogonal multiple access techniques into GCNs needs to be further investigated. Furthermore, the conventional linear energy harvesting model is ideal in practice. How to design GCNs under practical nonlinear energy harvesting models is required to be focused on.

This special issue aims to provide a comprehensive overview of the state of the art in theory and practice for realizing GCNs, which will bring together researchers from academia, industry, and governmental agencies to promote the research and development needed to address the major challenges that pertain to this cutting-edge research topic.

Potential topics include but are not limited to the following:

- ▶ Multiobjective resource allocation strategies for GCNs
- ▶ Multiobjective optimization theory for GCNs
- ▶ Multiobjective energy-efficient techniques for GCNs
- ▶ Energy-efficient cooperative techniques for GCNs
- ▶ Energy-efficient nonorthogonal multiple access techniques for GCNs
- ▶ Practical energy harvesting models for GCNs
- ▶ Resource optimization for GCNs under practical nonlinear energy harvesting models
- ▶ Physical layer security techniques for GCNs
- ▶ Multiantenna techniques for GCNs

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Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline

Friday, 4 May 2018

Publication Date

September 2018