

Special Section: Call for Papers

Announcing a Special Section in **IEEE Access**: **Green Communications and Networking for 5G**

Submission Deadline: May 31, 2016

IEEE Access invites manuscript submissions in the area of **Green Communications and Networking for 5G**.

The previous four generations of cellular technology is already being deployed. Research efforts are now being shifted to the fifth-generation (5G) communication systems. Indeed, 5G will need to be a paradigm shift that includes very high carrier frequencies with massive bandwidths, extreme base station and device densities, and unprecedented numbers of antennas. However, unlike the previous four generations, high speed data transfer and ubiquitous connectivity among various types of devices will be provided by integration of LTE and WiFi.

Due to the explosive increase of energy consumption, it is essential for governmental and industrial institutions to address this problem. Therefore, the development of green and energy-efficient 5G communication systems has recently become an important topic in communications. It is envisioned in such cases to become necessary to meet the growing demands for high data rate with limited resources. Addressing problems in green communication and networking will hopefully allow us to reach the realization of sustainable development.

In addition to the highly visible demand for data rate, there are a number of other factors that make green communications and networking for 5G challenging, including re-allocating bandwidth driven by market, the possibility of an "Internet of Things" comprised of billions of miscellaneous devices, the virtualization both in the core and edge network, the new application of millimeter wave (mmWave) spectrum, and the way of past and current cellular integration as well as WiFi standards. A ubiquitous high-rate and low-latency experience for network users with low energy consumption is the ultimate goal for 5G implementation.

The need for green communications and networking technologies has been recognized during the last few years by our research communities. However, many challenges still remain to be addressed. This Special Section in *IEEE Access* is intended to encourage high-quality research in green communications and networking for 5G, and push the theoretical and practical boundaries forward for a deeper understanding in fundamental algorithms, modeling, and analysis techniques from academic and industry viewpoints. Authors from both academia and industry are invited to submit papers presenting new research related to the theory or practice of green communications and networking for 5G, including algorithms, modeling, technologies and applications. The topics suggested can be discussed in terms of concepts, the state of the art, standards, implementations and evaluation, and running experiments and/or applications.

Topics of interest include, but are not limited to:

- Green Multiple access/modulation schemes beyond OFDMA
- Energy efficiency technique and method for re-allocating bandwidth

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- Theory and modeling for energy-efficient mmWave communications
- Analysis and optimization for energy-efficient mmWave communications
- Green massive MIMO techniques
- Green Device-to-Device Communication
- Architecture, strategies and/or algorithms for green networking
- Protocols, scheduling, and/or designs for green networking
- Security, privacy, and trust issues of green networking
- Data storage, data centers and data offloading for green networking
- Big data analytics for green networking
- Energy efficiency technique and method for HetNets integration (inc. Wifi integration)
- Energy efficiency method and protocols for Internet of Things
- Energy efficiency aspects of Cloud RAN and other highly novel cooperative techniques
- Standards, policy and regulation for 5G communication systems considering energy efficiency
- Energy efficient hardware, devices and designs for 5G communication systems
- New technologies and research trends

We also highly recommend the submission of multimedia with each article as it significantly increases the visibility, downloads, and citations of articles.

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