

Special Issue on
Emerging Technologies for 5G Radio Access Network: Architecture, Physical Layer Technologies, and MAC Layer

CALL FOR PAPERS

The proliferation of all types of mobile devices makes the traffic from wireless devices expected to exceed user traffic from wired access networks in the next few years. To meet this trend, 5G networks will be capable of delivering multigigabit throughputs and with extremely low latencies, even in highly dense locations. On one hand, mobile users are looking forward to a much richer media experience as 5G quickly approaches. On the other hand, wireless researchers are facing unprecedented challenges to make this vision come true.

One of the most critical 5G research topics is to explore new ideas to improve the efficiency of spectrum sharing in radio access network (RAN). For example, heterogeneous cloud radio access network (H-CRAN) is a revolutionary architecture responding to overcome these aforementioned challenges. H-CRAN takes full advantage of both cloud radio access networks (C-RANs) and heterogeneous networks (HetNets) to achieve high cooperative gains. H-CRAN allows seamless integration of multiple cutting edge wireless technologies, including massive MIMO, small cells, mmWave, full duplex, and NOMA. In addition, 5G MAC protocols should adapt to the service requirements of real-time and mission critical applications.

To overcome the challenges above, we plan this feature topic to help both academic and industrial research communities understand the recent research progress and contribute to the emerging technologies of 5G RAN architecture, physical layer technologies, and MAC layer protocols.

Potential topics include but are not limited to the following:

- ▶ Architecture design for next-generation radio access network
- ▶ Real-time performance optimization in H-CRAN
- ▶ Fundamental aspects of 5G physical layer
- ▶ New physical layer waveforms for 5G
- ▶ Massive MIMO based spatial resource management
- ▶ Cross-cell radio resource management for 5G mmWave
- ▶ Multiuser power and channel allocation in NOMA systems
- ▶ Radio resource allocation and optimization in 5G full-duplex system
- ▶ Novel RAN architecture with MAC-PHY split
- ▶ Real-time MAC communication protocols for 5G RAN

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/wcmc/tran/>.

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

Lead Guest Editor

Bo Rong, Communications Research Centre, Ottawa, Canada
bo.rong@canada.ca

Guest Editors

Jiazhen Zhou, University of Wisconsin–Whitewater, Whitewater, USA
zhouj@uww.edu

Michel Kadoch, Université du Québec, Québec, Canada
michel.kadoch@etsmtl.ca

Gui-Ling Sun, Nankai University, Tianjin, China
sungl@nankai.edu.cn

Submission Deadline

Friday, 1 December 2017

Publication Date

April 2018