



# CALL FOR PAPERS

The fifth generation (5G) mobile networks are expected to provide the significant increases in system capacity as well as spectrum efficiency, compared with the current long-term evolution (LTE) and LTE-advanced networks. Both standardization and technology developers are facing the challenge of diverse 5G technological requirements in the provision of 5G services and applications. The revolution on air-interface and radio access network (RAN) is needed to achieve these objectives. It has been agreed that 5G may natively support for new kinds of network deployments, including ultradense radio networking with self-backhauling, device-to-device communications, dynamic spectrum refarming, and radio access infrastructure sharing. However, more fundamental issues rely on the signal processing in the advanced transceiver and system design, which is the main interest of this special issue, e.g., nonorthogonal multiple access (NOMA), filter bank multicarrier (FBMC), generalized frequency division multiplexing (GFDM), hybrid QAM-FSK modulation (HQFM or FQAM), and being faster than Nyquist (FTN). These techniques are capable of achieving high capacity gains at the expense of implementation complexity. The new design has to be concerned with propagation features of wireless environments. The fading characteristics vary greatly for different transmission schemes with different antenna array configurations in different propagation channels.

We invite original research articles and survey articles that will stimulate continuing efforts to study the design of new digital signal processing techniques and their application propagation channel characteristics in providing future effective radio access solutions.

Potential topics include, but are not limited to:

- ▶ Propagation channel characteristics for 5G system with new signal processing techniques
- ▶ Channel modelling for 5G system with new signal processing techniques
- ▶ Advanced transceiver design for new signal processing technologies for 5G
- ▶ System design of new signal processing techniques for 5G
- ▶ Multiantenna signal processing for 5G
- ▶ Pilot signal design and channel estimation algorithms of new modulation and waveform technologies for 5G
- ▶ Impact of nonideal channel state information on performances of 5G system with new digital signal processing techniques
- ▶ Flexible and efficient signaling design for 5G system with new digital signal processing techniques
- ▶ Radio resource allocation for 5G with new digital signal processing techniques
- ▶ Performance of 5G system with nonideal digital signal in real environment
- ▶ Soft-defined radio (SDR) techniques for implementation of new digital signal processing techniques for 5G
- ▶ Demonstration and field trials of 5G system with new digital signal processing techniques

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