

Emerging Research Issues for 5G and IoT Applications

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ABSTRACT

The use of personal wireless devices (smart phones, smart watches, smart glasses, etc.) operating at various frequencies has been gaining popularity. These devices have many applications such as navigation, driving assistance, video capture, and accept/reject incoming calls from a paired mobile phone. In addition to this, these devices developed for emerging technologies are expected to work with the Internet of Things (IoT) concept at 5G (fifth generation) frequencies. 5G frequencies in many countries have already been determined. 5G and IoT are expected to be used not only in the entertainment technologies but also in areas such as health, medicine and automation areas. In addition, 5G means huge amount of data where a new era can rise up with the use of deep learning methods in analyzing these data. These developments bring many challenges along with the opportunities, such as designing mm-wave devices for high frequencies, researching about the possible SAR effects of new devices, designing reconfigurable antennas to work with several frequencies and including some flexibility for wearable technologies. I will try to discuss some of the developments in the literature as well as contributions and research directions of our research groups in the department of electrical and electronics engineering at Ataturk University around 5G and IoT topics

BRIEF BIOGRAPHY

Dr. Cavusoglu has received his BSc from Electronics and Communication Engineering, Yildiz Technical University, Istanbul, Turkey in 1994, Msc from Electrical Engineering, Illinois Institute of Technology, Chicago, USA in 1998 and Ph.D degree from Electrical and Computer Engineering, University of Illinois at Chicago (UIC), Chicago, USA in 2005. He has been with Ataturk University since 2005. His research interests are mainly in the fields of communication, signal/image processing, networking, 5G and IoT areas.