

ENERGY EFFICIENT 5G and IoT WIRELESS COMMUNICATIONS

The energy needs for wireless systems is limiting the evolution of most of the IoT and 5G future solutions. In this talk an overview of the energy problem in wireless communication systems will be presented, either from a mobile network point of view, but also from a IoT point of view. The main objective is to discuss future wireless paradigms that will be changing soon with 5G and beyond, those include the spread of a distributed mobile network by using Cloud Radio Access Networks, with its associated Software Defined Radio approaches, but also the issue of battery-less wireless devices, combining wireless power transmission and backscatter communications. The talk starts first with a general overview of the energy needs for a future XG networks, and then presents in an integrated way both approaches of C-RAN and IoT wireless design. The presentation will cover topics like the hardware part of the SDR and design of battery-less wireless sensors networks. Issues like characterization of mixed-signal devices, designing of C-RAN SDR approaches, design of passive backscatter sensors will be discussed, according to the audience.