Special Issue

Millimeter Wave/Terahertz Antennas and Integrated Circuit: Design and Applications

Message from the Guest Editor

At present, wireless communication comprises fifth-generation (5G) cellular technology that uses millimeter wave (mmWave) frequencies to offer unprecedented spectrum and multi-Gigabit-per-second (Gbps) data rates to a mobile device. Terahertz (THz) technologies have great potential in 5G and future 6G wireless communication systems as THz bands can provide a higher continuous bandwidth and a greater transmission rate compared with mm wave bands. With spectra ranging from 0.1 to 10 THz, THz provides enormous bandwidth, up to 100 GHz, and a massive data rate of up to 1Tbps. In addition, the size of the transceiver tends to be much smaller due to the shorter wavelength of millimeter wave/terahertz bands, which makes it easier to integrate with an ultra-massive antenna array. Although millimeter wave/terahertz communication is interesting and has great potential, some commonly used technologies in traditional communication systems are limited. For real applications of millimeter wave/terahertz communications, the design and application of antennas and integrated circuits are hot topics that need to be studied.

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