



EEI-Kolloquium

Enabling Terahertz Communications towards 6G and Beyond Era

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Live: Raum 01.021, Cauerstraße 7, 91058 Erlangen.

Terahertz (THz) communications are envisioned as an up-and-coming and pivotal wireless technology for the sixth generation (6G) and beyond era. In particular, the ultra-wide THz band ranging from 0.1 to 10 THz offers enormous potential to alleviate the spectrum scarcity and break the capacity limitation of emerging wireless systems (such as 4G-LTE and 5G NR). This will undoubtedly support epoch-making wireless applications that demand ultra-high quality service requirements and multi-terabits per second data transmission in the intelligent information society in the 2030s, such as terabit-per-second backhaul systems, ultra-high-definition content streaming among mobile devices, virtual/augmented reality, and wireless high-bandwidth secure communications.

In this talk, I will describe the role and importance of THz communications for the 6G and beyond era, while briefly introducing the fundamental research on THz devices, channels, testbeds, and simulators. After this, I will give a brief summary of recent research advances in THz communications, with focuses on performance analysis, spectrum allocation, and hybrid beamforming. Finally, I will discuss some significant challenges that need to be tackled for harnessing the benefits of THz communications in the 6G and beyond era.