

Terahertz Chip-Scale Systems

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Abstract

Terahertz spectrum, through its ability to foster ultra-high speed dense networks and high resolution sensing applications, can address a new class of emerging and exciting applications in autonomous systems, robotics, cyber-physical systems and industrial quality control for 6G and beyond. While the last decade has seen tremendous advances in the field, enabling scalable and chip-scale THz technology is still a major challenge. In this talk, we will discuss how new design approaches crosscutting circuits/EM/systems partitions, to open new possibilities in enabling programmability and adaptability in these THz chip technologies including programmable chip-scale THz sensors, THz metasurfaces and spatio-temporal control of THz fields for physical layer security, and how these can enable new applications in sensing, imaging, security and localization.