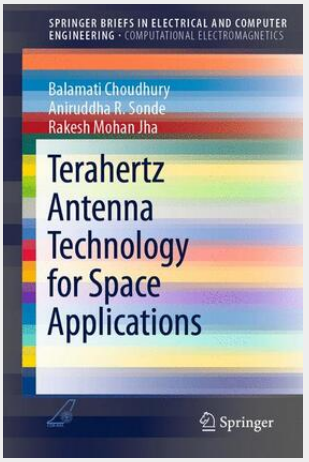
Choudhury / Jha / Sonde

Terahertz Antenna Technology for Space Applications



This book explores the terahertz antenna technology towards implementation of compact, consistent and cheap terahertz sources, as well as the high sensitivity terahertz detectors. The terahertz EM band provides a transition between the electronic and the photonic regions thus adopting important characteristics from these regimes. These characteristics, along with the progress in semiconductor technology, have enabled researchers to exploit hitherto unexplored domains including satellite communication, bio-medical imaging, and security systems. The advances in new materials and nanostructures such as graphene will be helpful in miniaturization of antenna technology while simultaneously maintaining the desired output levels. Terahertz antenna characterization of bandwidth, impedance, polarization, etc. has not yet been methodically structured and it continues to be a major research challenge. This book addresses these issues besides including the advances of terahertz technology in space applications worldwide, along with possibilities of using this technology in deep space networks.

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