

Wideband Microwave, Millimeter-Wave and Light-Wave Antennas

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Wideband antennas are capable of maintaining consistent near- and far-field performance over wide bandwidth. With the rapid growth of information technologies and ever increasing needs for high data throughput, wideband antennas become increasingly important for modern communication systems. However, many challenges arise in the design of wideband antennas and their use in different regions of the frequency spectrum. This talk covers studies of different types of wideband antennas in three spectral regions, i.e. microwave, millimeter-wave and light-wave. A new bandwidth enhancing method for traditional narrowband microstrip patch antennas will be presented. UWB millimeter-wave log-periodic antennas fabricated with sequential surface micromachining will be introduced. Dielectric material based optical antennas developed on Silicon-On-Insulator (SOI) wafer will be presented with comprehensively measured antenna link loss in the infrared spectrum.