Abstracts

Micromachining for terahertz applications

V.M. Lubecke, K. Mizuno and G.M. Rebeiz. "Micromachining for terahertz applications." 1998 Transactions on Microwave Theory and Techniques 46.11 (Nov. 1998, Part II [T-MTT] (Special Issue on Innovative Integration Techniques for Microwave and Millimeter-Wave Circuits)): 1821-1831.

An overview of recent progress in the research and development of micromachined antennas, transmission lines, waveguides structures, and planar movable components for terahertz frequencies is presented. Micromachining is shown to provide a low-cost alternative to conventional (and very expensive) machined-waveguide technology, resulting in antennas with excellent radiation patterns, low-loss tuners, and three-dimensional (3-D) micromachined structures suitable for terahertz applications. Fabrication procedures for a variety of micromachined waveguide and planar structures are described here, along with measured terahertz performance. Applications of micromachining techniques for terahertz systems include focal-plane imaging arrays requiring a large number of elements and low-cost receivers for commercial and industrial applications such as pollution monitoring.

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