Abstracts

Accurate modeling of dual dipole and slot elements used with photomixers for coherent terahertz output power

S.M. Duffy, S. Verghese, A. McIntosh, A. Jackson, A.C. Gossard and S. Matsuura. "Accurate modeling of dual dipole and slot elements used with photomixers for coherent terahertz output power." 2001 Transactions on Microwave Theory and Techniques 49.6 (Jun. 2001, Part I [T-MTT]): 1032-1038.

Accurate circuit models derived from electromagnetic simulations have been used to fabricate photomixer sources with optimized high-impedance antennas. Output powers on the order of 1 /spl mu/W were measured for various designs spanning 0.6-2.7 THz. The improvement in output power ranged from 3 to 10 dB over more conventionally designed photomixers using broad-band log-spiral antennas. Measured data on single dipoles, twin dipoles, and twin slots are in good agreement with the characteristics predicted by the design simulations.

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