# Abstracts

## THz radiation using high power, microfabricated, wideband TWTs

*C.L. Kory, J.H. Booske, W.-J. Lee, S. Gallagher, D.W. van der Weide, S. Limbach and S. Bhattacharjee. "THz radiation using high power, microfabricated, wideband TWTs." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 1265-1268 vol.2.*

Microfabricated, miniature, folded waveguide traveling wave tube (FWG-TWT) devices are potential compact sources of wideband (/spl sim/20% instantaneous bandwidth), high power (0.01-1 W) THz radiation. We present theoretical analyses and numerical simulations indicating that a 560 GHz, 56 mW, 1% (intrinsic) efficiency oscillator is realistically achievable, and amplifiers with gains between 10 and 30 dB are feasible with circuit lengths of a few centimeters. We also discuss a scale-model experiment at 50 GHz to investigate an oscillator concept using a recirculated power feedback approach, and a 400 GHz proof-of-concept amplifier.

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