II

HEMT TECHNOLOGY

Chairman: Ronald L. Carter—
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Session Abstract: Progress in the development of the High Electron Mobility Transistor (HEMT) is reported. Experimental data are reported which support the development of low noise operation with this device to a noise figure of 0.68 dB to 10.4 dB associated gain. The extrapolated cut-off frequency for low noise operations reported is 95 GHz. Power operation up to 0.9 W/mm of gate length and up to 185 mW of total power and power added efficiency of up to 41% is reported for a multiple stage configuration at 44 GHz. The single device performance at 60 GHz is reported at 0.85 W/mm, 100 mW total power and 22% power added efficiency. Directions for continued improvement are indicated by a theoretical comparison of the effects of materials and topological parameters on GaAs and GaInAs HEMT performance.

10:30 a.m.–12:00 noon, Thursday, June 15, 1989
Center Theater