

## **Session P:**

# **Millimeter-Wave Integrated Circuits**

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Significant advances have been made on millimeter-wave integrated circuits entailing hybrid and monolithic devices. Low-noise operation has been attained at W-band utilizing an InGaAs HEMT amplifier. Other millimeter wave amplifiers to be reported include a monolithic 40–60 GHz FET LNA and 44 GHz hbybrid HEMT doubler/amplifier chain. Characterization of components over extremely wide bandwidths has been demonstrated using an optoelectronic technique and is shown to have a negligible impact on the device under test. Millimeter-wave modulation and demodulation at 8 GBPS rates have been demonstrated and are reported.



**3:30 p.m.–5:00 p.m., Tuesday, May 8, 1990**  
**West Ballroom D**