

## Session S:

# Monolithic Integrated Circuits: 1

**Chairman: Hing-Loi A. Hung**

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This session is related to recent developments in GaAs monolithic integrated circuits with emphasis on subsystem applications. New results are presented on a phase-locked source using a MMIC VCO and phase detector, with low phase noise over an extended temperature range; a miniature broadband balanced frequency doubler MMIC; and an octave-band active filter, realizing an equivalent fourth-order filter response. At a higher level of integration, an X-band monolithic transceiver, including a power amplifier, IF amplifier, and patch antenna has been demonstrated. Also, a multilayer MMIC, using dielectric film structures on a GaAs wafer, offers further miniaturization of MMIC components.

**1:30 p.m.–3:00 p.m., Wednesday, May 9, 1990**  
**West Ballroom A, B**