## **SESSION V**

Manufacturing and Test
Chair: Stacy Bui, TRW Space and Electronics

The availability of and demand for affordable and reliable GaAs MMICs have created new challenges in manufacturing and testing of these ICs. The five submitted papers in this session cover a rather diverse range of manufacturing and testing topics.

The first paper describes a high-speed vector measurement system for testing quadrature 6-bit attenuator and 6-bit phase shifter. This approach uses standard network analyzer and very rapidly tests all bits and arms in a quadrature attenuator/phase shifter. The second paper illustrates the use of a highly flexible microwave test stand to accommodate a wide range of frequencies and chip functionalities. High volume production MMIC chip set testing has been developed with accuracy, repeatability, throughput, ease of use, and data traceability. The third paper presents an improved manufacturability of a production etch-stop MESFET gate-etch process. The fourth paper demonstrates a simple and accurate method to perform onwafer thermal impedance measurement for FETs and HEMTs. The last paper in this session addresses the use of a pulsed internal-node microwave waveform probing technique to diagnose and verify the design of coplanar MMIC power amplifiers.

1998 GaAs MANTECH 49