

SESSION I

HBT

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The Heterojunction Bipolar Transistor (HBT) is a commercially viable technology for higher efficiency transmitters in T/R modules as well as for high speed analog-to-digital converters (ADCs), digital-to-analog converters (DACs), and analog multiplexers/demultiplexers to extend the performance of RF systems.

We have five outstanding HBT papers in this session. The first paper reports on the removal of hydrogen from the base of carbon-doped HBTs by ex-situ rapid thermal annealing. The second paper discusses a two-step SiN_x and GaP passivation on AlGaAs/GaAs HBTs. The third paper presents a manufacturable fabrication process for self-aligned, thin base InGaP/GaAs HBTs. The fourth paper reports on InP/InGaAs HBTs for L-band power application with a 1.5V bias voltage. The last paper demonstrates the monolithic integration of HBT and quantum well laser devices for an integrated lightwave transmitter. The results of these five papers enhance the process development and manufacturability of HBT devices.