

SESSION V

Devices

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As integrated circuits become dense and sophisticated, key electronic and optoelectronic device elements comprising the circuits become increasingly critical for both military and commercial applications. Manufacturing of highly reliable, high performance, multi-functional devices are needed by tomorrow's systems. This session describes several key manufacturing issues of both electronic and optoelectronic devices. There are two invited and four contributed papers. The first invited paper discusses development of a heterojunction device technology for use in high frequency communication systems. The second invited paper addresses the performance of multi-functional GaAs Pseudomorphic High Electron Mobility Transistors beyond power and efficiency. The ion implantation MESFET process for high volume production is discussed in the third paper. In the fourth paper fabrication and manufacturability issues involved with the performance and trade-offs associated with collector thickness in InGaP/GaAs HBTs are discussed. The final two papers deal with optoelectronic devices and circuits. The first one presents the topic of building monolithic optoelectronic integrated circuits on commercial GaAs VLSI to overcome the limitations imposed by electrical interconnects on high speed computing and communication systems. In the final paper the manufacturing technology for optoelectronic integrated circuits for serial and parallel optical links are described using monolithically integrated optoelectronic receivers and transmitters on GaAs wafers.