Plenary Session

CMOS Integrated Nano-Photonics is now a Commercial Technology
Mobility-Enhanced MOS Device Technologies in Nano-CMOS era
Hybrid CMOS/Nanodevice Circuits: Architectures, Applications, and Device Needs
Thin Film Transistors
Uniform ZnO Thin-Film Transistors by an Ambient Process
Flexible Microwave Single-Crystal Si TFTs with \( f_{\text{max}} \) of 5.5 GHz
A 'Bottom-up' Redefinition for Mobility and the Effect of Poor Tube-Tube Contact on the Performance of CNT Nanobundle Thin Film Transistors
Fast ZnO Thin-Film Transistor Circuits
Electrical and chemical stability of polymer transistors
Solution processed OTFT circuits on plastic substrates
Wide Bandgap Devices
GaN Power Devices for Microwave/ Switching Applications
Novel 1 kV, normally-off, vertically integrated, dual-gate VJFET power switch with a low 4.6 m\( \Omega \)-cm\(^2\) on-state resistance
AlGaN/GaN HEMTs on Diamond Substrate
10 W/mm and High PAE Field-plated AlGaN/GaN HEMTs at Ka-band with n+GaN Source Contact Ledge
Progress in GaN Performances and Reliability
AlGaN/GaN HEMTs with Large Angle Implanted Nonalloyed Ohmic Contacts
Self-Aligned AlGaN/GaN High Electron Mobility Transistors
Analysis of lateral surface leakage in the vicinity of Schottky gates in AlGaN/GaN HEMTs
Drain-to-Gate Field Engineering for Improved Frequency Response of GaN-based HEMTs

Silicon CMOS

Silicon Nanowire Field Effect Devices By Top-Down CMOS Technology
SiGe cantilever channel gate-all-around (GAA) fully depleted (FD) PMOSFET with high-\( \xi \) and metal gate
Hole Transport in Nanoscale p-type MOSFET SOI Devices with High Strain
3X hole mobility enhancement in epitaxially grown SiGe PMOSFETs on (110) Si substrates with high k/metal gate for hybrid orientation technology
High-Mobility, Low Parasitic Resistance Si/Ge/Si Heterostructure Channel Schottky Source/Drain PMOSFETs
Band to Band Tunneling Study in High Mobility Materials: III-V, Si, Ge and strained SiGe

Process Integration and Electrical Properties of Bilayer Metal Gate/High-k MOSFETs

Poster Session

Effects of Source Access Resistance on Gate lag in AlGaN/GaN HEMTs and Current Slump Behavior
Low-Voltage Organic Thin-Film Transistors with Improved Stability and Large Transconductance
4H-SiC RF BJTs with Long Pulse L-band Operation
Room-temperature lasing of type-II "W" GaSb/GaAs quantum dots embedded in InGaAs quantum well

SWCNT-SET fabricated by dispersion method with CMC solvent

Microwave Noise Characterization of Enhancement-Mode AlGaN/GaN/InGaN/GaN Double-Heterojunction HEMTs

Electro-Thermally Coupled Power Optimization for Future Transistors

Dispersion Design of a Left-Handed Microstrip Line with Planar Double-Stub and Split-Ring Structures for Leaky Wave Radiation toward Functional RF Wireless Interconnect

High Power Vertical-structure GaN-based LEDs with Improved Current Spreading and Blocking Designs

Feasibility Study of Composite Dielectric Tunnel Barriers for Flash Memory

Confined Optical Phonon Scattering in p-Silicon Nanowires

Mid-Wavelength Infrared (MWIR) Avalanche Photodiode (APD) using InAs-GaSb type-II Strain layer Superlattice (SLS)

Body Thickness Optimization and Sensitivity Analysis for High Performance FinFETs

Flash Memory Fabricated with Protein-Mediated PbSe Nanocrystal Assembly as Floating Gate

Novel Amorphous-Si AMOLED Pixels with OLED-independent Turn-on Voltage and Driving Current

AlGaN/GaN Bidirectional Power Switch

n- and p-channel TaN/HfO2 MOSFETs on GaAs substrate using a germanium interfacial passivation layer

Hexagonal Prism Blue Laser Diode with Low Threshold Power using Whispering Gallery Mode (WGM) Resonances

Analytical Modeling of the Suspended-Gate FET and Design Insights for Digital Logic

Dynamic Two-Port Parameters of Ballistic Carbon Nanotube FETs: A Quantum Simulation Study

Schottky Drain AlGaN/GaN HEMTs for mm-wave Applications

Barrier layer downscaling of InAIN/GaN HEMTs

Estimation of Trap Density in AlGaN/GaN HEMTs from Subthreshold Slope Study

High Performance ZnO Nanowire FET with ITO Contacts

High Efficiency Oxide-Confined High-Index-Contrast Broad-Area Lasers with Reduced Threshold Current Density and Improved Near-Field Profile

Inversion-type enhancement-mode InP MOSFETs with ALD Al2O3, HfO2 and HfAlO nanolaminates as high-k gate dielectrics

Barrier Lowering and Widening of Schottky Barrier MOSFETs by Self-Aligned Multiple Workfunction Gate

Reliability of 4H-SiC DMOSFETs Evaluated by Bias Stressing

A 53% High Efficiency GaAs Vertically Integrated Multi-junction Laser Power Converter

Native-Oxide-Confined High Index Contrast InAs Quantum-Dot Laser Diodes

Surface Treatment for Leakage Reduction in AlGaN/GaN HEMTs

AlGaN/GaN HEMT with High PAE and Breakdown Voltage Grown by Ammonia MBE
Analytical Model of Apparent Threshold Voltage Lowering Induced by Contact Resistance in Amorphous Silicon Thin Film Transistors
On-Chip Clocking Scheme for Nanomagnet QCA
Electrical Characterization of Vertical InAs Nanowires on Si
Band-gap engineering of enhanced spin-orbit interactions in InAs/AlGaAs heterostructures for Datta-Das spin transistor
Oxide-Induced Noise in Carbon Nanotube Devices
In-Situ Inelastic Electron Tunneling Spectroscopy of Bistable Molecular Junction Devices
Electric-Field Dependence of Junction Temperature in GaN HEMTs
High Speed and Terahertz Devices
Advanced InP and GaAs HEMT MMIC technologies for MMW commercial products
Ultra-low Resistance Ohmic Contacts to InGaAs/inP
Sb-heterostructure Millimeter-Wave Detectors with Improved Noise Performance
Delta-Doped Si/SiGe Zero-Bias Backward Diodes for Micro-Wave Detection
Room-Temperature Terahertz Oscillators Using Resonant Tunneling Diodes
Novel Plasmon-Resonant Terahertz-Wave Emitter Using a Double-Decked HEMT Structure

THz front-side illuminated quantum well photodetector
Semiconducting Nanowire Devices
Towards vertical III-V nanowire devices on silicon
Control of Threshold Voltage in 80 nm Gate Length InAs Vertical Nanowire WIGFETs
Gallium Nitride Nanowire Devices - Fabrication, Characterization, and Simulation
High performance In203 nanowire transistors using organic gate nanodielectrics
Impact ionization FETs based on silicon nanowires
A Low Power, Highly Scalable, Vertical Double Gate MOSFET Using Novel Processes
An n-FET with a Si nanowire channel and doped epitaxially-thickened source and drain regions
Reduction of Acoustic Phonon Limited Electron Mobility due to Phonon Confinement in Silicon Nanowire MOSFETs
THz probe for nanowire FETs: simulation of few-electron fingerprints
Photonic Devices
The first commercial large-scale InP photonic integrated circuits: current status and performance
A hybrid silicon evanescent photodetector
High-Frequency Performance of a High-Power Traveling Wave Photodetector with Parallel Optical Feed
Single Ultra Violet Photon Detection with 4H-SiC Avalanche Photodiodes
The challenges and opportunities for dilute nitride antimonides in photonic devices

1.65 [mu]m buffer-free GaSb/AlGaSb quantum-well diode lasers grown on a GaAs substrate operating at room temperature
High Temperature CW Operation of Interband Cascade Lasers at ? ~ 4.0 [mu]m
Strain-Compensated AlAs-InGaAs Quantum-Cascade Lasers with Emission Wavelength 3-5 [mu]m
Iii-V Cmos

InGaAs CMOS: a "Beyond-the-Roadmap" Logic Technology?

InGaAs and GaAs/InGaAs Channel Enhancement Mode n-MOSFETs With HfO2 Gate Oxide and a-Si Interface Passivation Layer

Enhancement Mode n-MOSFET with High-? Dielectric On GaAs Substrate

High-performance submicron inversion-type enhancement-mode InGaAs MOSFET with maximum drain current of 360 mA/mm and transconductance of 130 mS/mm

Enhancement-mode In0.70Ga0.30As-channel MOSFETs with ALD Al2O3

Performance of Sub-micron Gate Length InAlP Native Oxide GaAs-channel MOSFETs

Memory Devices

Hybrid ALD-SiN/Si-nanocrystals/ALD-SiN FinFET device with large P/E window for MLC NAND Flash memory application

Ge/Si hetero-nanocrystalnonvolatile floating gate memory

Memory Effects in Metal-Oxide-Semiconductor Capacitors Incorporating Dispensed Highly Mono-disperse One-Nanometer Silicon Nanoparticles

Modeling of Multi-layer Nanocrystal Memory

Phase-change Memory

Novel Cross Point Switch based on Zn1-xCdxS memory devices for FPGA

Rump Sessions

The Future of Nanowire Devices: Top-down or bottom-up?

Why do we need nano for biosensors?

The THz Bridge

Joint DRC/EMC Plenary Session

Low Cost "Plastic" Solar Cells: A Dream or Reality???

Nanobiotechnology

The brain and the computer

Joining Microelectronics and Microionics: Nerve Cells and Brain Tissue on Semiconductor Chips

Biolithography: DNA-assisted Manufacturing of Nanodevices for Optical and Electronic Biosensing

Magnetoelectronics Devices & Optical Resonators

Recent Advances in MRAM Technology

Magnetic Sensitivity in Mesoscopic EMR Devices In I-V-I-V Configuration

Simulation of Spin Torque Devices with Inelastic Spin flip Scattering

Characterization and Application of Large Magnetoresistance in Organic Semiconductors

Metamaterials - Negative Indices with Positive Benefits?

High Performance Polycrystalline Diamond Micro Resonators

Carbon Nanotube & Graphene Devices

Aligned Arrays Single Walled Carbon Nanotubes for Thin Film Electronics

Quantum Capacitance Measurement for SWNT FET with Thin ALD High-k Dielectric

The study of low frequency noise of single-walled carbon nanotube transistors

Semiconducting Graphene Ribbon Transistor