8th IEEE Electron Devices Technology and Manufacturing (EDTM) Conference 2024
Hilton Bangalore, India, March 3rd- 6th, 2024
https://ewh.ieee.org/conf/edtm/2024/

Theme: Strengthening Globalization in Semiconductors

Three-page camera-ready paper submission starts: **August 1,2023**
Paper submission deadline: **September 15, 2023**
Notification for Acceptance: **December 15, 2023**

The 8th IEEE Electron Devices Technology and Manufacturing (**EDTM 2024**) Conference will be held for the first time in India at Hilton Bangalore, the Silicon Valley of India and the hub of semiconductor companies. EDTM 2024 will be a full four-day conference, established and sponsored by the IEEE Electron Devices Society (EDS). It is a premier conference, which aims to bring together experts/researchers from industry and academia around the world on a common platform, to showcase new discoveries and discuss on a broad range of topics covering semiconductor device technology and manufacturing.

Technical Areas

EDTM 2024 solicits papers in all areas of electronic devices, including materials, processes, modeling, device/circuit/system design, reliability, packaging, manufacturing, testing and yield.

EDTM 2024 will include parallel technical sessions of oral and poster presentations. Submitted papers after review will be considered for Best Paper, Best Student Paper, and Best Poster Awards.

Publications

The accepted and presented papers will be published in the **EDTM 2024** Proceedings included in IEEE Xplore. The authors of a selected number of high-impact papers will be invited to submit extended versions for publication in the special issue of **IEEE Journal of Electron Devices Society (J-EDS)**, subjected to J-EDS policy.

Short Courses and Tutorials

EDTM 2024 will start with a set of short courses and tutorials on March 3, 2024. Tutorials will cover selected topics from the basics to the state-of-the-art. The Short Courses will discuss the latest research and challenges on emerging and advanced topics.

Exhibition

EDTM 2024 offers vendors to showcase their newest products and technologies, allowing attendees to learn about new tools and techniques

General Chair:
Yogesh Chauhan (IITK)

General Co-chair:
Mayank Srivastava (IISc)

TPC Chair:
Udayan Ganguly (IITB)

TPC Co-chair:
Nihar Ranjan Mohapatra (IITGn)

Steering Committee:
Kazunari Ishimaru (Chair, Kioxia)
Ravi Todi (Western Digital))
Fernando Guarin (Globalfoundries)
Samar Saha (Prospicient Devices)
Shuji Ikeda (TEI Solutions)
Hitoshi Wakabayashi (Tokyo Tech.)
Geok Ing Ng (NTU)
Albert Wang (UC Riverside)
M.K. Radharkrishnan (NanoRel)
Bin Zhao (Iotelligent)

Executive Committee:
Yogesh Chauhan (IITK)
Mayank Srivastava (IISc)
Yang Chai (PolyU, HK)
V. Ramagopal Rao (BITS)
Navakanta Bhat (IISc)
Udayan Ganguly (IITB)
Nihar Ranjan Mohapatra (IITGn)
Saurabh Lodha (IITB)
Shree Prakash Tiwari (IITJ)
Swaroop Ganguly (IITB)
Shubham Sahay (IITK)
Roger Booth (Qualcomm)
Meikei Leong (HiTech)
Murty Polavarapu (BAE)
Benjamin Iniguez (URV)
Edmundo A. Gutierrez D (INAOE)

Secretariat:
Delve-Serwiz
Email: edtm@delve-serwiz.com

Original papers solicited in the following, but not limited to, following technical areas:

Logic Devices (LD): Group IV devices; Oxide semiconductor devices; CMOS platform technologies; Innovative device concepts like tunnel FETs, negative capacitance FETs, GAA nanowires and nanosheet based devices, Logic for Memory

Power and Energy Devices (PED): Device technologies related to high-voltage devices, power/RF devices, energy harvesting devices, photovoltaics, energy storage devices, discrete/integrated power devices, power modules/systems; Power device structures such as diodes, BJTs, FETs, IGBTs; Power device materials such as wide bandgap and ultra-wide bandgap materials (SiC, GaN, GaAs, AlN, GaO, etc.); Power device fabrication processes, modeling and simulation

RF Devices and Circuits (RFDC): Discrete and integrated high frequency (micro, mm-wave and THz) devices and physics, RF modules and systems, III-V devices for RF/THz application, Active and passive component design for RF/THz

Device Technology Co-optimization (DTCO): Logic device performance and circuit design challenges, Device-circuit co-design, System technology co-optimization (STCO), Design Automation, AI/ML system design, CPU Microarchitecture, Domain specific accelerators, Memory Systems, System-level projections.

Emerging Materials and Devices (EMD): 2D devices on low-dimensional materials; Neuromorphic and approximate computing devices; Spintronic and magnetic devices; Quantum computing devices; Topological materials and devices; Phase transition materials; Novel low-temperature or cryogenic devices

Advanced Memory Technologies (AMT): All memories, including embedded/standalone memories, volatile/nonvolatile memories; Emerging memories like RRAM, MRAM, PCM, FeRAM, cross-point/selectors, bio-inspired memory; Memory scaling; characterization and reliability of conventional and emerging memories.

Process, Tools, Yield and Manufacturing (PTYM): Semiconductor processes and process tools including process modules (deposition, dry/wet etch, cleaning, planarization, isolation, dielectrics, metals, silicides, lithography, self-assembly techniques); Process integration; Process control; Impact of process tools on devices/reliability; Process sensing; Process enhancement through AI/ML; Semiconductor manufacturing technologies and yield enhancement; Clean-room management; Wafer handling; Design-for-manufacturability (DFM); Design-for-test (DFT); Yield management using sensing, Computational lithography.

Packaging and Heterogeneous Integration (PHI): Advances in packaging and heterogeneous integration technologies including 2.1D, 2.5D and 3D integrations; Advanced packaging and manufacturing technologies such as wafer- level packaging, chiplets, ultra-fine-pitch interconnection, sub-micron package-level wiring, optical/wireless interconnect, power/sensor device packaging, controlling thermal-expansion coefficient, thermal management.

Modeling and Simulation (MS): Advances in modeling/simulation of devices, packages and processes; Technology CAD and benchmarking; Atomistic process and device simulation; Compact models for DTCO and STCO; AI/ML-augmented modelling; Material and interconnect modeling; Models for photonic devices.

Devices and Circuit Reliability (DCR): Reliability of FEOL/MOL/BEOL; ESD and latch-up; Reliability of devices, circuits and systems; Design for reliability and variability aware design; Degradation mechanism of emerging devices and memories; Reliability of neuromorphic computing systems; Robustness and security of electronic circuits and systems; Reliability of cryogenic devices for future quantum computing applications

Photonics, Optoelectronics, Imaging and Display (POID): Heterogenous optoelectronic integration including sources, modulators and detectors; Optoelectronic integration for neuromorphic computing; Single photon devices; Displays and imagers for augmented virtual reality; Topological optoelectronics and photonics; Intelligent image sensors; Photonics for energy; Microwave photonics; Nano-photonics.

Sensors, Flexible and Bio-electronics (SFBE): Advances in sensors, transducers and actuators; Bio-sensors; Sensors for environmental monitoring (agri-sensors, gas-sensors); Sensors for process monitoring; Physical and biochemical integrated sensors; Flexible devices for wearable applications; Materials for flexible electronics; Intelligent sensors with embedded AI; Sensors and devices for human-machine interface.

MEMS/NEMS and Heterogeneously Integrated Devices (NEMS): MEMS/NEMS devices; MEMS for internet of things; Microfluidics and BioMEMS; CMOS on MEMS; RF MEMS; Micro-optical and opto-chemical devices; Micro-power generators; MEMS for energy harvesting and on-chip energy storage.

Disruptive Technologies - Neuromorphic & Quantum Technologies (DT): Topics on disruptive technologies including quantum computing, in-memory, neuromorphic and bio-inspired computing; AI/ML for next generation computing, Quantum machine learning, Logic-in-memory.

Three-page camera-ready paper submission deadline: **September 15, 2023**
Notification for Acceptance: **December 15, 2023**