

JAPED Special Issue

Theme of Special Issue: Advanced Nanoelectronic Devices, Circuits and Systems for Integrated Circuit Design

Special Issue with selected extended version of papers from the 3rd EDKCON 2024, to be held on November 23-24, 2024, Kolkata, India

Conference website: <https://r10.ieee.org/kolkata-eds/blog/2023/10/20/edkcon-2024/>

Aim of the S.I.:

To showcase the cutting-edge research on quantum mechanical devices and its possible applications in integrated circuit design.

This Special Issue for extended version of selected papers from “EDKCON 2024” invites original contributions in the research of simulation, modelling, and experimental analysis of various nanoscale devices, circuits and systems with possible implementation in integrated circuits and systems.

Scope of the S.I.:

This special issue focuses analytical modelling, simulation and experimental characterization of low-dimensional structures and devices which are now become the integral part of modern ULSI design. In this Special Issue, range will cover the fabrication and characterization of quantum devices along with theoretical novel findings designed in high frequency spectra.

In last few years, research has extensively been carried out on microelectronic technologies, corresponding device characterization as well as its analytical modeling and simulation. Scientific discoveries and technological advances related to low-dimension devices becomes a promising field due to the requirement of industry, and therefore researchers are keener to engineer novel architectures and devices which can solve the integration demand. Novel combination of materials and complex geometries are therefore leads to the path of innovative device design, and becomes highly crucial to estimate the performance for applications in circuits/systems.

The present special issue with extended version of selected papers from “EDKCON 2024” aims to the cutting-edge research related with low-dimensional devices which will certainly which led the path of future integrated circuit design. This definitely matches with the scope of the journal.

Keywords: Quantum device, Analytical modeling, Simulation of low-dimensional structures, Nanoscale device characterization, Circuits/Systems for RFIC Design, Sub-micron devices for microwave and millimeterwave spectra

Topics of Interest

The subtopics to be covered within this issue are listed below:

- Modeling and Simulation of Quantum-Mechanical Devices
- Design, Fabrication and Characterization of Novel Nanoscale Architectures
- Emerging Non-CMOS Devices
- Modeling of Photonic Devices
- Physics and Modeling of Submicron Microelectronic Devices
- Mathematical Models of Novel Electronic Device Structures
- Novel MOS Devices
- Applications of Numerical Methods to the Modeling and Simulation of Devices and Processes

About EDKCON 2024: The 2024 IEEE Electron Device Kolkata Conference (2024 IEEE EDKCON) will be held in The Science City, Kolkata, India during November 23-24, 2022. Organized by IEEE EDS Kolkata Chapter, EDKCON

2024 is expected to bring together researchers, educators, students from across academia, government, industry, and non-governmental organizations to discuss, share and promote current works and recent accomplishments across all aspects of Electron Devices, Circuits and Systems. The conference also will provide an opportunity to local, regional and international industries-service providers to present their technologies, products and services. Moreover, we want to continue our conference in the subsequent years also, to build a community against the conference.

The aim and objective of EDKCON 2024 is to provide an annual forum for the presentation and discussion of recent advances in solid-state devices, circuits and systems. The increasing level of integration for system-on-chip design made available by advances in silicon technology is more than ever before calling for a deeper interaction among technologists, device experts, IC designers, and system designers.

Schedule planned:

Conference date: 23-24 November, 2024

Selection of best papers and call for extended version of paper from the authors before: 15th December, 2024

Manuscript submission starts: 31st December 2024

Manuscript submission deadline i.e. Paper submission closes: 31st March, 2025

Reviewer Assignment before: 15th April, 2025

Last date of 1st review due from the reviewers and author notification after 1st round of review: 15th May 2025

Revision due: 15th June 2025

Author notification after 2nd review (accept/rejection) and completion of peer-review process: 30th June 2025

Papers to be submitted for production: 10th July, 2025

Date of possible publication of the S.I.: August 2025

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