

# IEEE JOURNAL ON EMERGING AND SELECTED TOPICS IN CIRCUITS AND SYSTEMS

## CALL for Papers

### AI-Driven Innovation and Efficiency: Charting the Future of Electronics Design Automation

#### Guest Editors

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#### Scope and Purpose

The semiconductor industry's continuous push towards smaller nodes and more complex designs has placed a significant emphasis on manufacturing Electronic Design Automation (EDA). Design-for-Manufacturability (DFM) and Design-Technology Co-optimization (DTCO) are critical aspects that directly impact the success of semiconductor device manufacturing. Integrating AI in the EDA loop presents a novel approach that can significantly enhance the design process, optimize manufacturing considerations, and achieve superior system-technology co-optimization.

The motivation behind this special issue stems from the pressing need to address the challenges associated with advanced semiconductor device manufacturing. Traditional EDA methodologies may struggle to meet the stringent requirements of small process nodes and complex design constraints and multi-objectives. Design-for-Manufacturability becomes paramount to ensure high-yield and cost-effective production. Co-optimizing the design and technology considerations is also vital for achieving optimal performance and power efficiency. By infusing AI into the EDA loop, we can explore groundbreaking solutions to enhance design, manufacturing, and co-optimization processes.

#### Topics of Interest

- Electronic Design Automation for Nanoscale Technologies
- Design-for-Manufacturability (DFM) with AI
- Design-Technology Co-Optimization (DTCO) with AI
- System-Technology Co-Optimization (STCO) with AI
- Security and Trustworthy Design
- Analog and Mixed-Signal Design Challenges
- Open-Source EDA Tools and Communities
- AI in the EDA Loop
- Physical Design Automation and AI

- Timing Analysis and Optimization with AI
- Verification and Validation with AI
- Synthesis and Optimization with AI
- Place-and-Route Algorithms with AI
- Design for Testability (DFT) with AI

## Submission Procedure

Prospective authors are invited to submit their papers following the instructions provided on the JETCAS web-site: <https://iee.atyponrex.com/journal/jetcas>. The submitted manuscripts should not have been previously published nor should they be currently under consideration for publication elsewhere.

## Important dates

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|--------------------------------------|----------------|
| ● Manuscript submissions due:        | March 1, 2024  |
| ● First round of reviews completed:  | April 15, 2024 |
| ● Revised manuscripts due:           | June 1, 2024   |
| ● Second round of reviews completed: | June 30, 2024  |
| ● Final manuscripts due:             | July 25, 2024  |

## Request for Information

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