



*Electrical Engineering – Electronics and  
/ Telecommunications*

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## Education

- Ph.D: SHAHID BEHESHTI UNIVERSITY, Computer Engineering- Computer Systems Architecture, 1388→1391

## Research Interests

- VLSI design for beyond-CMOS emerging technologies ; Approximate Computing; Neuromorphic VLSI Circuits ; VLSI Interconnects

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## Professional Experiences

- , 1402→1403
- , 1401→1402
- , 1401→Now
- , 1400→1401
- , 1400→1401
- , 1399→1400
- , 1398→1399

■ , 1396→1398

■ , 1395→1396

## Books

■ پیشرفته VLSI مدارهای

مریم نوروزی، محمدحسین معیری، کیوان ناوی

دانشگاه شهیدبهشتی – تهران، ایران، ۱۳۹۵، شابک: ۹۷۸۹۶۴۴۵۷۳۹۵۸

## Journal Papers

### ■ Radiation-Immune Spintronic Binary Synapse and Neuron for Process-in-Memory Architecture

Milad Tanavardi Nasab, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari  
IEEE Magnetcs Letters, Vol.15, 2024

### ■ A Novel Hardware Solution for Efficient Approximate Fuzzy Image Edge Detection

Fereshteh Behbahani, Mohammad Jooq Khaleqi Qaleh, Mohammad Hossein Moaiyeri, Mostafa Rahimi Azghadi  
IEEE TRANSACTIONS ON FUZZY SYSTEMS, Vol.32, pp. 3199-3210, 2024

### ■ An ultra-fast and energy-efficient CNTFET-based image corner detection hardware for real-time image processing applications

Fereshteh Behbahani, Alireza Behrad, Mohammad Hossein Moaiyeri  
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, Vol.175, 2024

### ■ Low-Cost and Variation-Aware Spintronic Ternary Random Number Generator

Fatemeh Khodayari, Abdoloh Amirany, Kian Jafari, Mohammad Hossein Moaiyeri  
CIRCUITS SYSTEMS AND SIGNAL PROCESSING, Vol.43, pp. 1175-1191, 2024

### ■ Process-in-Memory realized by nonvolatile Task-Scheduling and Resource-Sharing XNOR-Net hardware Accelerator architectures

Milad Tanavardi nasab, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari  
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, Vol.178, 2024

### ■ On the Layout-Oriented Investigation of Power Attack Hardness of Spintronic-Based Logic Circuits

Pegah Iranfar, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari  
CIRCUITS SYSTEMS AND SIGNAL PROCESSING, Vol.43, pp. 3212-3237, 2024

### ■ A High-Accuracy and Low-Power Emerging Technology-Based Associative Memory

Mahan Rezaei, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari  
IEEE TRANSACTIONS ON NANOTECHNOLOGY, Vol.23, pp. 293-298, 2024

### ■ A High-Capacity and Nonvolatile Spintronic Associative Memory Hardware Accelerator

Mahan Rezaei, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
IET Circuits Devices and Systems, Vol.17, pp. 205-212, 2023

### ■ Ultra-efficient fully programmable membership function generator based on independent double-gate FinFET technology

Mohammad Khaleqi Qaleh Jooq, Fereshteh Behbahani, Mohammad Hossein Moaiyeri  
INTERNATIONAL JOURNAL OF CIRCUIT THEORY AND APPLICATIONS, Vol.-, pp. 1-18, 2023

### ■ An SEU-hardened ternary SRAM design based on efficient ternary C-elements using CNTFET technology

Vahid Bakhtiary, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
MICROELECTRONICS RELIABILITY, Vol.140, 2023

### ■ Towards Nonvolatile Spintronic Quaternary Flip-Flop and Register Design

Motahareh Bahman abadi, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
SPIN, Vol.-, 2023

■ **An Ultra-Efficient Approximate Multiplier With Error Compensation for Error-Resilient Applications**

Farnaz Sabetzadeh, Mohammad Hossein Moaiyeri, Mohammad Ahmadinejad  
IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS II-EXPRESS BRIEFS, Vol.70, pp. 776-780, 2023

■ **A Flexible and Reliable RRAM-Based In-Memory Computing Architecture For Data-Intensive Applications**

Nima Eslami, Mohammad Hossein Moaiyeri  
IEEE Transactions on Emerging Topics in Computing, Vol.-, pp. 1-12, 2023

■ **A Fast and Light Fingerprint-Matching Model Based on Deep Learning Approaches**

Hamid Shafaghi, Meysam Kiani, Abdoloh Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
Journal of Signal Processing Systems for Signal Image and Video Technology, Vol.95, pp. 551-558, 2023

■ **Computing in Memory Using Doubled STT-MRAM With the Application of Binarized Neural Networks**

Seyed hassan Hadi nemati, Nima Eslami, Mohammad Hossein Moaiyeri  
IEEE Magnetics Letters, Vol.14, pp. 1-5, 2023

■ **Hybrid MTJ/CNTFET-Based Binary Synapse and Neuron for Process-in-Memory Architecture**

Milad Tanavardi nasab, Arefe Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
IEEE Magnetics Letters, Vol.14, 2023

■ **A Variation-Aware Ternary True Random Number Generator Using Magnetic Tunnel Junction at Subcritical Current Regime**

Fatemeh Khodayari, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
IEEE TRANSACTIONS ON MAGNETICS, Vol.59, 2023

■ **Highly reliable bio-inspired spintronic/CNTFET multi-bit per cell nonvolatile memory**

Abdoloh Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, Vol.158, 2023

■ **An Energy Efficient In-Memory Computing Architecture Using Reconfigurable Magnetic Logic Circuits for Big Data Processing**

Milad Ashtari gargari, Nima Eslami, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON MAGNETICS, Vol.59, pp. 1-10, 2023

■ **A look-up table-based processing-in-SRAM architecture for energy-efficient search applications**

Seyed hassan Hadi nemati, Nima Eslami, Mohammad Hossein Moaiyeri  
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■ **A Hybrid SRAM/RRAM In-Memory Computing Architecture Based on A Reconfigurable SRAM Sense Amplifier**

Seyed hassan Hadi nemati, Nima Eslami, Mohammad Hossein Moaiyeri  
IEEE Access, Vol.11, pp. 72159-72171, 2023

■ **Leveraging negative capacitance ferroelectric materials for performance boosting of sub-10 nm graphene nanoribbon field-effect transistors: a quantum simulation study**

Khalil Tamersit, Mohammad Hossein Moaiyeri, Mohammad Khaleqi Qaleh Jooq  
NANOTECHNOLOGY, Vol.33, 2022

■ **Theoretical Circuit Design of an Efficient Spintronic Random Number Generator with an Internal Post-Processing Unit**

Saeed Mehri, Abdoloh Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
IEEE Magnetics Letters, Vol.13, 2022

■ **A New Design Paradigm for Auto-Nonvolatile Ternary SRAMs Using Ferroelectric CNTFETs: From Device to Array Architecture**

Mohammad Khaleqi Qaleh Jooq, Mohammad Hossein Moaiyeri, Khalil Tamersit  
IEEE TRANSACTIONS ON ELECTRON DEVICES, Vol.69, pp. 6113-9120, 2022

■ **Energy-Efficient Approximate Compressor Design for Error-Resilient Digital Signal Processing**

Amin Avan, Mohammadreza Taheri, Mohammad Hossein Moaiyeri, Keyvan Navi  
INTERNATIONAL JOURNAL OF ELECTRONICS, Vol.110, pp. 1555-1577, 2022

■ **Design and energy analysis of a new fault-tolerant SRAM cell in quantum-dot cellular automata**

Milad Bagherian Khosroshahy, Mohammad Hossein Moaiyeri, Alireza Abdoli  
OPTICAL AND QUANTUM ELECTRONICS, Vol.54, 2022

■ **High-Accuracy Spintronic Approximate Compressors for Error-Resilient In-Memory Computing**

Yasin Eghlimi, Mohammad Hossein Moaiyeri, Mohammad Ahmadinejad  
SPIN, Vol.12, 2022

■ **DDR-MRAM: Double Data Rate Magnetic RAM for Efficient Artificial Intelligence and Cache Applications**

Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON MAGNETICS, Vol., pp. 1-9, 2022

■ **A process variation resilient spintronic true random number generator for highly reliable hardware security applications**

Mehrdad Morsali, Mohammad Hossein Moaiyeri, Ramin Rajaei  
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■ **A Reliable and Energy-Efficient Nonvolatile Ternary Memory Based on Hybrid FinFET/RRAM Technology**

Aram Yousefi, Nima Eslami, Mohammad Hossein Moaiyeri  
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■ **Efficient and Highly Reliable Spintronic Non-volatile Quaternary Memory Based on Carbon Nanotube FETs and Multi-TMR MTJs**

Motahareh Bahman abadi, Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
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■ **Ultra-Efficient and Robust Auto-Nonvolatile Schmitt Trigger-Based Latch Design Using Ferroelectric CNTFET Technology**

Mohammad Khaleqi Qaleh Jooq, Mohammad Hossein Moaiyeri, Alaaddin Al-shidaifat, Hanjung Song  
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■ **A Hardware- and Accuracy-Efficient Approximate Multiplier with Error Compensation for Neural Network and Image Processing Applications**

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■ **High-Performance and Robust Spintronic/CNTFET-Based Binarized Neural Network Hardware Accelerator**

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■ **Towards Efficient Logic-in-Memory Computing with Magnetic Reconfigurable Logic Circuits**

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■ **Hardware-accuracy trade-offs for error-resilient applications using an ultra-efficient hybrid approximate multiplier**

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■ **Vertical Noise Reduction in 3D Mixed-Signal Integrated Circuits with Graphene Nanoribbon and Carbon Nanotube Interconnects**

Soheila Gharavi Hamedani, Mohammad Hossein Moaiyeri, Masoud Meghdadi,  
IEEE Transactions on Components Packaging and Manufacturing Technology, Vol.11, pp. 302-311, 2021

■ **An ultra-energy-efficient crosstalk-immune interconnect architecture based on multilayer graphene nanoribbons for deep-nanometer technologies**

Reza Karimi, Mohammad Hossein Moaiyeri, Soheila Gharavi Hamedani  
Journal of Computational Electronics, Vol.20, pp. 1411-1421, 2021

■ **Leveraging Negative Capacitance CNTFETs for Image Processing: An Ultra-Efficient Ternary Image Edge Detection Hardware**

Fereshteh Behbahani, Mohammad Jooq Khaleqi Qaleh, Mohammad Hossein Moaiyeri, Khalil Tamersit  
IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, Vol.68, pp. 5108-5119, 2021

■ **Design of an Energy-Efficient Radiation-Hardened Non-volatile Magnetic Latch**

Farzad Razi, Mohammad Hossein Moaiyeri, Ramin Rajaei  
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■ **Crosstalk Delay and Noise Optimization in Nanoscale Multi-line Interconnects Based on Repeater Staggering in Ternary Logic**

Soheila Gharavi Hamedani, Mohammad Hossein Moaiyeri  
ECS Journal of Solid State Science and Technology, Vol.10, 2021

■ **Breaking the Limits in Ternary Logic: An Ultra-Efficient Auto-Backup/Restore Nonvolatile Ternary Flip-Flop Using Negative Capacitance CNTFET Technology**

Mohammad Hossein Moaiyeri, Mohammad Jooq Khaleqi Qaleh, Alaaddin Al-Shidaifat, Hanjung Song  
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■ **Ultra-Compact Ternary Logic Gates Based on Negative Capacitance Carbon Nanotube FETs**

Mohammad Khaleqi Qaleh Jooq, Mohammad Hossein Moaiyeri, Khalil Tamersit  
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■ **High-Performance Spintronic Nonvolatile Ternary Flip-Flop and Universal Shift Register**

Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON VERY LARGE SCALE INTEGRATION (VLSI) SYSTEMS, Vol.29, pp. 916-924, 2021

■ **High-Performance Radiation-Hardened Spintronic Retention Latch and Flip-Flop for Highly Reliable Processors**

Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON DEVICE AND MATERIALS RELIABILITY, Vol.21, pp. 215-223, 2021

■ **Ultra-Efficient Nonvolatile Approximate Full-Adder with Spin-Hall Assisted MTJ Cells for In-Memory Computing Applications**

Sepahrad Salavati, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
IEEE TRANSACTIONS ON MAGNETICS, Vol.57, 2021

■ **Ultra-Compact Imprecise 4:2 Compressor and Multiplier Circuits for Approximate Computing in Deep Nanoscale**

Ferdos Salmanpour, Mohammad Hossein Moaiyeri, Farnaz Sabetzadeh  
CIRCUITS SYSTEMS AND SIGNAL PROCESSING, Vol.40, pp. 4633-4650, 2021

■ **Energy- and Quality-Efficient Approximate Multipliers for Neural Network and Image Processing Applications**

Mohammad Ahmadinejad, Mohammad Hossein Moaiyeri  
IEEE Transactions on Emerging Topics in Computing, Vol., pp. 1-12, 2021

■ **An Ultra-Efficient Recycling Folded Cascode OTA Based on GAA-CNTFET Technology for MEMS/NEMS Capacitive Readout Applications**

Mohammad Khaleqi Qaleh Jooq, Fereshteh Behbahani, Mohammad Hossein Moaiyeri  
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, Vol.136, 2021

■ **CNFET-based design of efficient ternary half adder and 1-trit multiplier circuits using dynamic logic**

Farzin Sardroudi Mahboob, Mehdi Habibi, Mohammad Hossein Moaiyeri  
MICROELECTRONICS JOURNAL, Vol.113, 2021

■ **An Energy-Efficient Crosstalk Reduction Strategy for On-Chip Buses Using Carbon-Based Transistors and Interconnects**

Seyedeh parastoo Azimi, Mohammad Hossein Moaiyeri, Soheila Gharavi Hamedani  
ECS Journal of Solid State Science and Technology, Vol.10, 2021

■ **Analog/RF performance assessment of ferroelectric junctionless carbon nanotube FETs: A quantum simulation study**

Khalil Tamersit, Mohammad Khaleqi Qaleh Jooq, Mohammad Hossein Moaiyeri  
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■ **A Magnetic Reconfigurable Ternary NOR/NAND Logic for Logic-in-Memory Applications**

Farzad Razi, Mohammad Hossein Moaiyeri, Siamak Mohammadi  
SPIN, Vol., 2021

■ **Ultraefficient imprecise multipliers based on innovative 4:2 approximate compressors**

Mohammad Khaleqi Qaleh Jooq, Mohammad Ahmadinejad, Mohammad Hossein Moaiyeri  
INTERNATIONAL JOURNAL OF CIRCUIT THEORY AND APPLICATIONS, Vol.49, pp. 169-184, 2021

■ **Ultra-High-Performance Magnetic Nonvolatile Level Converter Flip-Flop with Spin-Hall Assistance for Dual-Supply Systems with Power Gating Architecture**

Mehrdad Morsali, Mohammad Hossein Moaiyeri  
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■ **Computational Investigation of Negative Capacitance Coaxially Gated Carbon Nanotube Field-Effect Transistors**

Khalil Tamersit, Mohammad Khaleqi Qaleh Jooq, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON ELECTRON DEVICES, Vol.68, pp. 376-384, 2021

■ **A low-power dynamic ternary full adder using carbon nanotube field-effect transistors**

Farzin Mahboob Sardroudi, Mehdi Habibi, Mohammad Hossein Moaiyeri  
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■ **A Task-Schedulable Nonvolatile Spintronic Field-Programmable Gate Array**

Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
IEEE Magnetism Letters, Vol.12, 2021

■ **Fast and energy-efficient FPGA realization of RNS reverse converter for the ternary 3-moduli set  $\{(3^n)-2, (3^n)-1, 3^n\}$**

Pooriya Navaee Lavasani, Shokoufeh Adeli, Mohammadreza Taheri, Mohammad Hossein Moaiyeri, Keyvan Navi  
SN Applied Sciences, Vol.2, 2020

■ **BVA-NQSL: A Bio-inspired Variation Aware Nonvolatile Quaternary Spintronic Latch**

Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
IEEE Magnetism Letters, Vol.11, 2020

■ **Energy-Efficient Magnetic 5:2 Compressors Based on SHE-Assisted Hybrid MTJ/FinFET Logic**

Mohammad Ahmadinejad, Mohammad Hossein Moaiyeri  
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■ **True Random Number Generator for Reliable Hardware Security Modules Based on a Neuromorphic Variation-Tolerant Spintronic Structure**

Abdolah Amirany, Kian Jafari Dinani, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON NANOTECHNOLOGY, Vol.19, pp. 784-791, 2020

■ **Comparative Analysis of the Crosstalk Effects in Multilayer Graphene Nanoribbon and MWCNT Interconnects in Sub-10 nm Technologies**

Soheila Gharavi Hamedani, Mohammad Hossein Moaiyeri  
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■ **A High-Performance Fully Programmable Membership Function Generator based on 10nm Gate-All-Around CNTFETs**

Ali Bozorgmehr, Mohammad Khaleqi Qaleh Jooq, Mohammad Hossein Moaiyeri, Keyvan Navi, Nader Bagherzadeh  
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■ **Nonvolatile Associative Memory Design Based on Spintronic Synapses and CNTFET Neurons**

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■ **A Novel Digital Fuzzy System for Image Edge Detection Based on Wrap-Gate Carbon Nanotube Transistors**

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■ **Design of an efficient fully nonvolatile and radiation-hardened majority-based magnetic full adder using FinFET/MTJ**

Sina Bakhtavari mamaghani, Mohammad Hossein Moaiyeri, Ghassem Jaberipur  
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■ **Magnetic nonvolatile flip-flops with spin-Hall assistance for power gating in ternary systems**

Ali Asghar Javadi, Mehrdad Morsali, Mohammad Hossein Moaiyeri  
Journal of Computational Electronics, Vol.19, pp. 1175-1186, 2020

■ **Stochastic Spintronic Neuron for Hardware Implementation of Neural Networks**

Abdolah Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani, Masoud Meghdadi  
Journal on Computer Science and Engineering, Vol.18, pp. 13-19, 2020

■ **Energy-Efficient Magnetic Approximate Full Adder with Spin-Hall Assistance for Signal Processing Applications**

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■ **A Low-Leakage and High-Writable SRAM Cell with Back-Gate Biasing in FinFET Technology**

Sina Sayyah Ensan, Mohammad Hossein Moaiyeri, Behzad Ebrahimi, Shaahin Hessabi, Ali Afzali-Kusha  
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■ **On the design of quaternary arithmetic logic unit based on CNTFETs**

Fazel Sharifi rostam abadi, Mohammad Hossein Moaiyeri, Hojjat Sharifi Rostamabadi, Keyvan Navi, Himanshu Thapliyal  
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■ **A high-performance 5-to-2 compressor cell based on carbon nanotube FETs**

Mehdi Bagherizadeh, Mohammad Hossein Moaiyeri, Mohammad Eshghi  
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■ **Process-in-Memory Using a Magnetic-Tunnel-Junction Synapse and a Neuron Based on a Carbon Nanotube Field-Effect Transistor**

Abdolah Amirany, Mohammad Hossein Moaiyeri, Kian Jafari Dinani  
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■ **Efficient Passive Shielding of MWCNT Interconnects to Reduce Crosstalk Effects in Multiple-Valued Logic Circuits**

Mohammad Hossein Moaiyeri, Zahra Mehdizadehtaheri, Maryam Rezaei Khezeli, Ali Jalali  
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■ **A Variation-Aware Ternary Spin-Hall Assisted STT-RAM Based on Hybrid MTJ/GAA-CNTFET Logic**

Farzad Razi, Mohammad Hossein Moaiyeri, Ramin Rajaei, Siamak Mohammadi  
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■ **A Majority-Based Imprecise Multiplier for Ultra-Efficient Approximate Image Multiplication**

Farnaz Sabetzadeh, Mohammad Hossein Moaiyeri, Mohammad Ahmadinejad  
IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, Vol.66, pp. 4200-4208, 2019

■ **Energy and Area Efficient Imprecise Compressors for Approximate Multiplication at Nanoscale**

Mohammad Ahmadinejad, Mohammad Hossein Moaiyeri, Farnaz Sabetzadeh  
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, Vol.110, 2019

■ **Impacts of Process and Temperature Variations on the Crosstalk Effects in Sub-10 nm Multilayer Graphene Nanoribbon Interconnects**

Soheila Gharavi Hamedani, Mohammad Hossein Moaiyeri  
IEEE TRANSACTIONS ON DEVICE AND MATERIALS RELIABILITY, Vol.19, pp. 630-641, 2019

■ **Comparative Analysis of Simultaneous Switching Noise Effects in MWCNT Bundle and Cu Power Interconnects in CNTFET-based Ternary Circuits**

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■ **A Low-Power Single-Ended SRAM in FinFET Technology**

Sina Sayyah Ensan, Mohammad Hossein Moaiyeri, Majid Moghaddam, Shaahin Hessabi  
AEU-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS, Vol.99, pp. 361-368, 2019

■ **NVLCFF: An Energy-Efficient Magnetic Nonvolatile Level Converter Flip-Flop for Ultra-Low-Power Design**

■ **Active Shielding of MWCNT Bundle Interconnects An Efficient Approach to Cancellation of Crosstalk-Induced Functional Failures in Ternary Logic**

Maryam Rezaei Khezeli, Mohammad Hossein Moaiyeri, Ali Jalali  
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■ **A robust and low-power near-threshold SRAM in 10-nm FinFET technology**

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■ **Effective Reduction in Crosstalk Effects in Quaternary Integrated Circuits Using Mixed Carbon Nanotube Bundle Interconnects**

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ECS Journal of Solid State Science and Technology, Vol.7, 2018

■ **High Performance CNFET-based Ternary Full Adders**

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IETE JOURNAL OF RESEARCH, Vol.64, pp. 108-115, 2018

■ **Ultra-Efficient Fuzzy Min/Max Circuits Based on Carbon Nanotube FETs**

Ali Bozorgmehr, Mohammad Hossein Moaiyeri, Keyvan Navi, Nader Bagherzadeh  
IEEE TRANSACTIONS ON FUZZY SYSTEMS, Vol.26, pp. 1073-1078, 2018

■ **An Efficient Majority-Based Compressor for Approximate Computing In The Nano Era**

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■ **An Energy and Area Efficient 42 Compressor Based on FinFETs**

Armineh Arasteh, Mohammad Hossein Moaiyeri, Mohammadreza Taheri, Keyvan Navi, Bagherzadeh Nader  
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■ **Design of CNTFET-based Current-mode Multi-input m:3 (4???m???) Counters**

Mona Moradi, Bagheri Mohammad Hassan, Mehdi Bagherizadeh, Mohammad Hossein Moaiyeri  
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■ **A low-power and area-efficient quaternary adder based on CNTFET switching logic**

Shirin Fakhari, Narges Hajizadeh Bastani, Mohammad Hossein Moaiyeri  
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■ **An Energy and Area Efficient Approximate Ternary Adder Based on CNTFET Switching Logic**

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■ **Efficient and Robust SRAM Cell Design Based on Quantum-Dot Cellular Automata**

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■ **On the Impacts of Process and Temperature Variations on the Crosstalk Effects in MWCNT Bundle Nanointerconnects in Ternary Logic**

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■ **Quantum-Dot Cellular Automata Circuits with Reduced External Fixed Inputs**

Milad Bagherian Khosroshahy, Mohammad Hossein Moaiyeri, Angizi Shaahin, Bagherzadeh Nader, Keyvan Navi  
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محمد جرنگی، علی جهانیان، مهیا سام دلیری، محمدحسین معیری

نوزدهمین کنفرانس ملی سالانه انجمن کامپیوتر ایران، صفحات: ۹۵۰-۹۵۵

■ طراحی سلول های تمام جمع کننده تک بیتی با قابلیت اطمینان و کارایی بالا

محمدحسین معیری، کیوان ناوی

چهاردهمین کنفرانس ملی سالانه کامپیوتر انجمن کامپیوتر ایران

■ طراحی سلول های جدید جمع کننده کم مصرف و با کارایی بالا در سطح ترانزیستور

محمدحسین معیری

چهاردهمین کنفرانس ملی سالانه کامپیوتر انجمن کامپیوتر ایران

thesis and doctoral thesis

■ Design of approximate computational units with error compensation for hardware-accuracy trade-off in neural

networks  
Farnaz Sabetzadeh  
2023

■ Evaluation and Improvement of Performance and Reliability of Graphene Nanoribbon Interconnects in Sub-10nm Integrated Circuits  
Soheila Gharavi Hamedani  
2021

## M.Sc. Theses

■ Efficient in-memory computing architectures based on emerging memory elements  
Milad Ashtari gargari  
2024

■ Strengthening spintronic based neural network hardware against side-channel attacks  
Milad Ghazanfari Nasrabad  
2023

■ Design and Optimization of Hardware Associative Memories Based on Emerging Technologies  
Mahan Rezaei  
2023

■ Design of High-Performance Approximate Spintronic Memories for Hardware Implementation of Neural Networks  
Hamid Nasr esfahani  
2023

■ Design of Non-volatile Multiple-valued Circuits with Energy and Area Efficiency Using Negative Capacitance Carbon Nanotube Transistors  
Hadi Akhtari  
2023

■ Efficient Memory Cells for In-Memory Computing Applications in FinFET Technology  
Seyed hassan Hadi nemati  
2023

■ Design of an Efficient True Random Number Generator Circuit based on Spintronics  
Fatemeh Khodayari  
2022

■ Design of energy-efficient multiple-valued logic circuits based on emerging memory devices  
Aram Yousefi  
2022

■ Design on efficient memory elements based on ferroelectric carbon nanotube transistors  
Shamim Saleh  
2022

■ Design of efficient binarized neural network circuits based on emerging technologies  
Milad Tanavardi nasab  
2022

■ Design of energy-efficient hardened nonvolatile ternary memory elements  
Vahid Bakhtiary

2022

■ Design of an Error-Resilient Approximate Multiplier for Image Processing and Neural Network Applications

Sude Shirkavand

2021

■ Energy-Efficient Approximate Arithmetic Circuits based on Spintronics for Image Processing Applications

Yasin Eghlimi

2021

■

Donya Khaledyan

2021

■ Performance Evaluation and Improvement of Low-Power Nano-Interconnects In Sub-Threshold Region

Reza Karimi

2021

■ Design of Low-Power and Nonvolatile FeFET-Based Logic Circuits for Computing-in-Memory Architectures

Mahsa Saeidnia

2020

■ Reduction of crosstalk effects in nano interconnects using physical parameters and crosstalk avoidance codes in multiple valued logic

Seyedeh parastoo Azimi

2020

■ design of approximate arithmetic circuits for trading-off accuracy and energy in digital signal processing applications

Ferdos Salmanpour

2020

■ Design of Energy-Efficient and Variation-Tolerant Nonvolatile Memory Elements Based on Magnetic Tunnel Junction

Ali Asghar Javadi

2020

■ Designing Energy and Area Efficient Approximate Compressors and Multipliers for Digital Signal Processing Application

Mohammad Ahmadinejad

2020

■ Designing Nonvolatile Level-Converting Flip-Flops Using Spintronics Technology for Ultra-Low-Power Circuits at Nanoscale

Mehrdad Morsali

2020

■ Design of a radix-10 adder base on analog and digital blocks for nanotechnology

Kave Manafi

2019

■

Zahra Mehdizadehtaheri

2018

■ Reduction of crosstalk effects using mixed bundle carbon nanotubes in multiple valued logic

Zahra Haj mohammadi

2018

■

Shirin Fakhari

2018

■

Farnaz Sabetzadeh

2018

■

Javad Fiyuzi

2018

■

Hamid Mohammadi

2018

■

Armineh Arasteh

2017

■

Zahra Taghavigelehdoni

2015

■

Shima Sedighiani

2015

## Awards & Honors

■ دو درصد برتر پژوهشگران پر استناد جهان

۱۴۰۰

■ بیست و دومین کنفرانس ملی سالانه انجمن کامپیوتر ایران

۱۳۹۵

## Patents & Innovations

■ PLURALITY VOTER CIRCUIT

Mohsen Tanzify Foomany, Keyvan Navi, Omid Hashemipour tafreshi, Mohammad Hossein Moaiyeri

2018