Hassan Mostafa, PhD, SMIEEE

CONTACT INFORMATION

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CURRENT POSITION

• I am currently working as an Assistant Professor at the Electrical Engineering department, Faculty of Engineering, Cairo University, Giza, Egypt and the director of the Opto-Nano-Electronics (ONE) Lab at Cairo University

• I am one of the founders of IPVALLEY Inc., a startup company specialized in customizing electronics IPs since 2016.
www.ipvalleyinc.com

• I was working as an Adjunct Assistant Professor at the Center of Nanoelectronics and Devices (CND) at the American University in Cairo (AUC) and Zewail City for Science and Technology (ZC).

• I have been working as an (Natural Sciences and Engineering Research Council of Canada) NSERC PostDoctoral Fellow (PDF) at the Electrical and Computer Engineering Department, University of Toronto, Toronto, Ontario, Canada. My PDF fellowship is also funded by Fujitsu research labs, Japan, under the supervision of professor Ali Sheikholeslami (University of Toronto) and Hirotaka Tamura-san (Fujitsu Labs in Japan).

EDUCATION

University of Waterloo, Waterloo, Ontario, Canada.

Ph.D., Electrical and Computer Engineering, July 2011

- Thesis Topic: **Robust Design of Variation-Sensitive Digital Circuits**
- Advisors: Professors: **Mohamed Elmasry, Mohab Anis, and Karim Karim**
- Area of Study: **Nano-electronics**

Cairo University, Cairo, Egypt.

M.Sc., Electronics and Electrical Communications, August 2005

- Thesis Topic: **Design of Novel Analog Current-Mode CMOS Building Blocks**
- Advisor: Professor: **Ahmed Soliman**
- Area of Study: **Analog Electronics**

B.Sc., Electronics and Electrical Communications, August 2001

- Major: **Electronics**
- B.Sc. Grade: **Excellent with Honors**

RESEARCH FUNDS AND SCHOLARSHIPS

- **"Radio Optical Network Simulation Tool (RONST)" , National Telecommunication Regulatory Authority (NTRA), Egypt, Principal Investigator (PI) Research funding**, 2017-2019 ($\approx$ $90,000)
- **"CRC: Collaborative Research and Teaching Testbed for Wireless Communications and Networks-Phase II" , National Telecommunication Regulatory Authority (NTRA), Egypt, Co-Principal Investigator (Co-PI) Research funding**, 2017-2019 ($\approx$ $180,000)

- **"Deep Local Manufacturing in Microelectronics Industry" , Academy of Scientific Research and Technology (ASRT), Egypt, Partner Research funding**, 2016-2018 (≈ $1.0 Million)
- **"Design and Implementation of hardware Internet of Things (IoT) Adaptive Security Supporting System" , Information Technology Industry Development Agency (ITIDA), Egypt, Co-Principal Investigator (Co-PI) Research funding**, 2017-2018 (≈ $30,000)
- **"Active Implantable Neural Interface Platform" , Information Technology Industry Development Agency (ITIDA), Egypt, Principal Investigator (PI) Research funding**, 2015-2018 (≈ $173,000)
- **"Self Powered FPGA Chip for Wireless Sensor Networks" , Information Technology Industry Development Agency (ITIDA), Egypt, Co-Principal Investigator (Co-PI) Research funding**, 2016-2017 (≈ $30,000)
- **"Optimized Implementation of Tuning Mechanisms in Reconfigurable RF Resonators for Advanced Wireless Systems" , Information Technology Industry Development Agency (ITIDA), Egypt, Co-Principal Investigator (Co-PI) Research funding**, 2015-2016 (≈ $30,000)
- **"Design of High Speed Optical Communication Access Networks with Optical On-Chip Network FPGA (OOCN-FPGA) Integration" , National Telecommunication Regulatory Authority (NTRA), Egypt, Principal Investigator (PI) Research funding**, 2014-2016 (≈ $215,000)
- **Academy of Scientific Research and Technology (ASRT), Egypt, Bachelor projects funding**, 2016 and 2017 (≈ $12000)
- **Information Technology Industry Development Agency (ITIDA), Egypt, Bachelor projects funding**, 2015 and 2016 (≈ $10,800)
- **National Telecommunication Regulatory Authority (NTRA), Egypt, Bachelor projects funding**, 2014, 2015, 2016 (≈ $9,800)
- **Academy of Scientific Research and Technology (ASRT), Egypt, Master research funding**, 2013 and 2017 (≈ $15,000)
- **Natural Sciences and Engineering Research Council of Canada (NSERC) PostDoctoral Fellowship**, Fall 2011-Spring 2013 ($80,000).
- **University of Toronto Research Associate Scholarship**, Fall 2011-Spring 2012 ($12,000).
- **Ontario Graduate Scholarship (OGS)**, Fall 2011-Spring 2012 ($25,000).
- **Ontario Graduate Scholarship for Science and Technology (OGSST)**, Fall 2010, and Winter 2011 ($10,000).

Awards and Honors

- **Valeo Innovation Challenge Award**, May 2016, ($ 6000)
- **IEEE Senior Member**, February 2015.
- **University of Waterloo Institute of Nano-technology (WIN) nanofellowship research excellence award**, Fall 2010, and Winter 2011 ($10,000).
- **University of Waterloo SandFord Fleming TA Excellence Award**, 2008 Academic year ($500).
- **International Doctoral Student Award** from University of Waterloo, Waterloo, Ontario, Canada, Spring 2007- Winter 2010 ($27,000).

Academic Experience

Cairo University, Cairo, Egypt
American University in Cairo (AUC), Cairo, Egypt

Assistant Professor **August 2012 till now**

- List of courses that I have instructed:
  - Electronic Measurements and Instruments
  - Optoelectronics Devices and Circuits

- Semiconductor Devices and Circuits Applications
- Nanotechnology and Green Electronics
- Energy Harvesting Systems
- Micro/Nano-Electro-Mechanical-Systems (MEMS/NEMS) (Graduate Course)
- Semiconductor Technology and CMOS Processing
- Digital Integrated Circuits Design (Graduate Course)
- Introduction to Circuit Analysis and Design
- Advanced Analog Integrated Circuits (Graduate Course)

- **Research Interests:**
  - Next Generation FPGA systems
  - Biomedical implantable applications
  - Optical-Electronics Applications
  - Energy Harvesting Systems Design
  - Time-Based Analog-to-Digital Converters (T-ADCs)
  - Nano-Memories (Memristors and Magnetic Memories)
  - Micro/Nano-Electro-Mechanical-Systems (MEMS/NEMS) Applications
  - Software Defined Radio Implementation
  - Variability-Aware Circuit Design and CAD Tools
  - Soft Error Free Circuit Design and CAD Tools
  - Hardware Security for Internet of Things (IoT) applications
  - Brain Inspired Computing (Neuromorphic Computing) Implementation
- **Current Students:**
  I have co-supervised more than 30 MSc/PhD students since 2013 at Cairo University and the American University in Cairo.

University of Toronto, Toronto, Ontario, Canada

Post Doctoral Fellow **August 2011 to July 2012**

- I have led the next-generation FPGA project team partially funded by Fujitsu Research Labs in Japan.
- In this project, the objective is to design new FPGA chips that exhibit lower-power, higher-performance, and more scalable than the conventional FPGAs. This objective is to be achieved by adopting new techniques to the FPGA design which can not be revealed due to the Non-Disclosure Agreement (NDA) with Fujitsu.

University of Waterloo, Waterloo, Ontario, Canada

Research Assistant **May 2007 to July 2011**

- Inventing the novel negative capacitance circuit for timing yield improvement.
- Fabricating and testing a 1.7X1.7 mm^2 test chip by using TSMC 65nm technology including all the novel circuits.
- Conducting research on time-based Analog to Digital Converters (ADC).
- Conducting research on the phase noise modeling of ring oscillators.
- Working on modeling the soft errors of memory elements and studying the effect of process variations on the soft error rate.
- Providing novel circuit designs to mitigate the process variations impact on nanometer CMOS circuits in both super-threshold and sub-threshold regions.
- Conducting a novel research on the impact of process variations on ring oscillators performance.

Publications

- **Journal Papers** (in press = accepted for publication)

1. A. Hassan, **Hassan Mostafa**, and H. A. H. Fahmy, "NoC-DPR: A New Simulation Tool Exploiting the Dynamic Partial Reconfiguration (DPR) on Network-on-Chip (NoC) Based FPGA", *Elsevier Integration VLSI Journal*, In Press.
2. M. Ashraf, **Hassan Mostafa**, A. Eladawy, and Y. Ismail, "Power Adaptive High-Resolution Neural Data Compression Algorithm (PANDCA) ", *Elsevier Microelectronics Journal*, In Press.
3. M. Shehata, **Hassan Mostafa**, and Y. Ismail, "On The Theoretical Limits of The Power Efficiency of Photonically Generated IR-UWB Waveforms", *IEEE Journal of Lightwave Technology (JLT)*, pp. 2017-2023, 2018.
4. A. H. Hassan, **Hassan Mostafa**, Y. Ismail, and A. M. Soliman, "A Low-Power High-Efficiency Inductive Link Power Supply for Neural Recording and Stimulation SoC", *American Scientific Publisher (ASP) Journal of Low Power Electronics (JLOPE)*, vol. 14, issue 1, pp. 129-139(11), 2018.
5. O. Abdelkader, M. M. El-Din, **Hassan Mostafa**, H. Abdelhamid, H. A. H. Fahmy, Y. Ismail, and A. M. Soliman, "Technology Scaling Roadmap for FinFET-Based FPGA Clusters Under Process Variations", *Journal of Circuits, Systems, and Computers*, vol. 27, issue 4, pp. 1850056:1-32, 2018.
6. M. Elgabry, A. Hassan, **Hassan Mostafa**, and A. M. Soliman, "A New Design Methodology for Voltage-to-Frequency Converters (VFCs) Circuits Suitable for Time-Based Analog-to-Digital Converters (T-ADC)", *Springer Analog Integrated Circuits and Signal Processing*, vol. 94, issue 2, pp. 277287, 2018.
7. M. Shehata, **Hassan Mostafa**, and Y. Ismail, "Accurate Closed Form Expressions for The Bit Rate-Distance Relationship in IR-UWBoF Systems, " *IEEE Communications Letters*, vol. 21, issue 10, pp. 2138-2141, 2017.
8. Ahmed Sadek, **Hassan Mostafa**, Yehea Ismail, and Amin Nassar, "Towards the Implementation of Multi-band Multi-standard Software Defined Radio using Dynamic Partial Reconfiguration, " *International Journal of Communication Systems*, pp. 1-12, June 2017.
9. A. Ahmed, I. Hassan, T. Ibn-Mohammed, **Hassan Mostafa**, I. M. Reaney, L. S.C Koh, J. Zu and Z. Wang, "Environmental Life Cycle Assessment and Techno-Economic Analysis of Triboelectric Nanogenerator," *Royal Society of Chemistry: Journal of Energy and Environmental Science*, vol. 10, no. 3, pp. 653-671, May 2017.
10. M. Shehata, **Hassan Mostafa**, and Y. Ismail, "Closed Form Expressions and Bounds for The Signal to Noise Ratio in IR-UWBoF Systems ," *IEEE Photonics Technology Letters (PTL)*, vol. 29, no. 6, pp. 507-510, March 2017.
11. A. Elbayoumi, **Hassan Mostafa**, and A. M. Soliman, "A Novel MIM-Capacitor-Based 1-GS/s 14-bit Variation-Tolerant Fully-Differential Voltage-to- Time Converter (VTC) Circuit," *Journal of Circuits, Systems and Computers (JCSC)*, vol. 25, no. 5, pp. 1-35, Jan. 2017.
12. Karim Osama Ragab, **Hassan Mostafa**, and Ahmed Eladawy, " A Novel 10-bit 2.8mW Time-to-Digital Converter Design using SAR with Continuous Disassembly Algorithm ," *IEEE Transactions on Circuits and Systems II (TCAS-II)*, vol. 63, no. 10, pp. 909-913, October 2016.
13. Esraa Abdelkhalek, Yasmine El-Sayed, Tawfik Ismail, and **Hassan Mostafa**, "Electrical and Optical Clock and Data Recovery in Optical Access Networks: A Comparative Study, " *International Journal of Communication Systems*, pp. 1-10, August 2016.

14. **Hassan Mostafa** and Yehea Ismail, "Process Variation Aware Design of Multi-Valued Spintronic Memristor-Based Memory Arrays, " *IEEE Transactions on Semiconductor Manufacturing (TSM)*, vol. 29, no. 2, pp. 145-152, May 2016.
15. **Hassan Mostafa** and Yehea Ismail, "Statistical Yield Improvement Under Process Variations of Multi-Valued Memristor-Based Memories, " *Elsevier Microelectronics Journal*, vol. 51, pp. 46-57, May 2016.
16. Hoda Abdelsalam, Emad Hegazi, **Hassan Mostafa**, and Yehea Ismail, "On the use of a programmable front-end for multi-band/multi-standard applications, " *Elsevier Microelectronics Journal*, vol. 49, pp. 1-9, March 2016.
17. Mohamed Elshamy, **Hassan Mostafa**, Yehya Ghallab, and M. Sameh Said, "A Novel Non-Destructive Read/Write Circuit for Memristor-Based Memory Arrays, " *IEEE Transactions on Very Large Scale Integration (TVLSI)*, vol. 23, no. 11, pp. 2648-2656, November 2015.
18. Ayman Eltaliawy, **Hassan Mostafa**, and Yehea Ismail, "Micro-scale Variation-Tolerant Exponential Maximum Power Tracking System for Self-Powered Wireless Sensor Networks, " *Elsevier Microelectronics Journal*, vol. 46, pp. 221-230, March 2015.
19. **Hassan Mostafa**, and Yehea Ismail, " A Design-Oriented Timing Jitter/Skew Model in Voltage-to-Time Converter (VTC) Circuits, " *SPRINGER Analog Integrated Circuits and Signal Processing*, vol. 82, no. 1, pp. 309-321, January 2015.
20. Yehya Ghallab, **Hassan Mostafa**, and Yehea Ismail, "A New Current Mode Implementation of a Balanced-Output-Signal Generator, " *SPRINGER Analog Integrated Circuits and Signal Processing*, vol. 81, no. 3, pp. 751-762, December 2014.
21. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "Statistical SRAM Read Access Yield Improvement Using Negative Capacitance Circuits, " *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*vol. 21, no. 1, pp. 92-101, January 2013.
22. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "NBTI and Process Variations Compensation Circuits Using Adaptive Body Bias, " *IEEE Transactions on Semiconductor Manufacturing (TSM)*, vol. 25, no. 3, pp. 460-467, August 2012.
23. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "On-Chip Process Variations Compensation Using an Analog Adaptive Body Bias (A-ABB), " *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)* vol. 20, no. 4, pp. 770-774, April 2012.
24. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "Adaptive Body Bias for Reducing the Impacts of NBTI and Process Variations on 6T SRAM Cells, " *IEEE Transactions on Circuits and Systems I (TCAS-I)*, vol. 58, no. 12, pp. 2859-2871, December 2011.
25. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "A Bias-Dependent Model for the Impact of Process Variations on the SRAM Soft Error Immunity, " *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, vol. 19, no. 11, pp. 2130-2134, November 2011.
26. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, " A Novel Low Area Overhead Direct Adaptive Body Bias (D-ABB) Circuit for Die-to-Die and Within-Die Variations Compensation," IEEE Transactions on Very Large Scale Integration Systems (TVLSI), vol. 19, no. 10, pp. 1848-1860, October 2011.

27. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "Novel Timing Yield Improvement Circuits for High-Performance Low-Power Wide Fan-In Dynamic OR Gates, " *IEEE Transactions on Circuits and Systems I (TCAS-I)*, vol. 58, no. 8, pp. 1785-1797, August 2011.
28. Sayed Sadrossadat, **Hassan Mostafa**, and Mohab Anis, "Statistical Design Framework of Sub-Micron Flip-Flop Circuits Considering Die-to-Die and Within-Die Variations, " *IEEE Transactions on Semiconductor Manufacturing (TSM)*, vol. 24, no. 1, pp. 69-79, February 2011.
29. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, "Analytical Soft Error Models Accounting for Die-to-Die and Within-Die Variations in Sub-Threshold SRAM Cells, " *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, vol. 19, no. 2, pp. 182-195, February 2011.
30. **Hassan Mostafa**, Mohab Anis, and Mohamed Elmasry, " A Design-Oriented Soft Error Rate Variation Model Accounting for Both Die-to-Die and Within-Die Variations in Submicrometer CMOS SRAM Cells, " *IEEE Transactions on Circuits and Systems I (TCAS-I)*, vol. 57, no. 6, pp. 1298-1311, June 2010.
31. **Hassan Mostafa**, and A. M. Soliman, "Novel FCS-Based Layout-Friendly Accurate Wide-Band Low-Power CCII- Realizations," *Journal of Circuits, Systems and Computers (JCSC)*, vol.19, no.5, pp. 997-1014, August 2010.
32. **Hassan Mostafa**, and Ahmed M. Soliman, Novel Accurate Wideband CMOS current conveyor, *Frequenz Journal of Germany*, vol. 60, pp. 233-235, 2006.
33. **Hassan Mostafa**, and Ahmed M. Soliman, "A Modified CMOS Realization of the Operational transresistance Amplifier (OTRA)," *Frequenz Journal of Germany*, vol. 60, pp. 70-76, 2006.
34. **Hassan Mostafa**, and A. M. Soliman, "Novel CMOS Realization of the Operational Floating Conveyor and Applications," *Journal of Circuits, Systems and Computers (JCSC)*, vol.14, pp.1113-1143, December 2005.

- **Conference Papers**

1. I. Ahmed, A. K. ELdin, **Hassan Mostafa**, and A. Mohieldin, "Utilizing Dynamic Partial Reconfiguration to Reduce the Cost of FPGA Debugging", *IEEE International NEW Circuits and Systems Conference (NEWCAS 2018)*, Montreal, Canada, In Press.
2. G. S. Maximous, A. M. Fatahalla, A. Seleym, T. A. Ashour, and **Hassan Mostafa**, "A New CAD Tool for Energy Optimization of Diagonal Motion Mode of Attached Electrode Triboelectric Nanogenerators", *IEEE International NEW Circuits and Systems Conference (NEWCAS 2018)*, Montreal, Canada, In Press.
3. A. Elnabawy, H. Abdelmohsen, M. Moustafa, M. Elbediwy, A. Helmy, and **Hassan Mostafa**, "A Low Power CORDIC-Based Hardware Implementation of Izhikevich Neuron Model", *IEEE International NEW Circuits and Systems Conference (NEWCAS 2018)*, Montreal, Canada, In Press.
4. I. Ahmed, **Hassan Mostafa**, and A. Mohielddin, "Dynamic Partial Reconfiguration Verification Using Assertion Based Verification", *IEEE International Conference on Design and Technology of Integrated Systems in Nanoscale Era (DTIS 2018)*, Taormina, Italy, In Press.
5. R. Ali, **Hassan Mostafa**, and A. Hussein, "Impact of Dynamic Partial Reconfiguration on CONNECT Network-on-Chip for FPGAs ", *IEEE International Conference on Design and Technology of Integrated Systems in Nanoscale Era (DTIS 2018)*, Taormina, Italy, In Press.

6. M. Saeed, T. Ismail, and **Hassan Mostafa**, "On RF Telemetry for Implantable Medical Devices: A Communication Theory Perspective", *IEEE International Symposium on Communication Systems, Networks, and Digital Signal Processing (CSNDSP 2018)*, Budapest, Hungary, In Press.
7. M. Shehata, and **Hassan Mostafa**, "Photodetected Power Maximization of Photonically Generated Impulse Radio Ultrawide Band Signals", *IEEE International Symposium on Circuits and Systems (ISCAS 2018)*, Florence, Italy, pp. 1-4, 2018.
8. M. Shehata, and **Hassan Mostafa**, "A Single Wavelength Photonic Network on Chip Design Based on Optical Orthogonal Codes", *IEEE International Symposium on Circuits and Systems (ISCAS 2018)*, Florence, Italy, pp. 1-4, 2018.
9. H. Hossam, M. Dessouki, and **Hassan Mostafa**, "Time-Based Read Circuit for Multi-Bit Memristor Memories", *IEEE International Conference on Modern Circuits and Systems Technologies (MOCAST 2018)*, Thessaloniki, Greece, pp. 1-4, 2018.
10. **Hassan Mostafa**, "Experimental Study of the Adaptive Body Bias on-Chip (ABBoC) for Bias Temperature Instability (BTI) and Process Variations (PV) Compensation", *IEEE International Conference on Modern Circuits and Systems Technologies (MOCAST 2018)*, Thessaloniki, Greece, pp. 1-4, 2018.
11. K. Khateb, M. Ahmed, A. K. ELdin, M. AbdelGhany, and **Hassan Mostafa**, "Dynamically Recon?gurable Power Efficient Security for Internet of Things Devices", *IEEE International Conference on Modern Circuits and Systems Technologies (MOCAST 2018)*, Thessaloniki, Greece, pp. 1-4, 2018.
12. G. Maximous, A. El-Gunidy, **Hassan Mostafa**, T. Ismail, and S. Gabran, "A New Sensitivity-Specificity Product-Based Automatic Seizure Detection Algorithm ", *IEEE International Japan-Africa Conference on Electronics, Communications, and Computers (JAC-ECC 2017)*, Alexandria, Egypt, pp. 115-118, 2017.
13. R. M. Elaskary, M. Saeed, T. Ismail, **Hassan Mostafa**, and S. Gabran, "Hybrid DCT/Quantized Huffman Compression for Electroencephalography Data", *IEEE International Japan-Africa Conference on Electronics, Communications, and Computers (JAC-ECC 2017)*, Alexandria, Egypt, pp. 119-122, 2017.
14. H. Elgemmazy, A. Helmy, **Hassan Mostafa**, and Y. Ismail, "High CMRR and Wideband Current-Mode Instrumentation Amplifier Using Fully Differential Operational Floating Conveyor", *IEEE International Japan-Africa Conference on Electronics, Communications, and Computers (JAC-ECC 2017)*, Alexandria, Egypt, pp. 41-44, 2017.
15. M. Shehata, and **Hassan Mostafa**, "A Simplified Approach for Error Rate Analysis in Realistic Free Space Optical Fading Channels", *IEEE International Conference on Advanced Control Circuits and Systems and New Paradigms in Electronics and Information Technology (ACCS/PEIT 2017)*, Alexandria, Egypt, pp. 218-222, 2017.
16. M. I. Selmy, **Hassan Mostafa**, and A. A. S. Dessouki, "Low Power Memristor Based Voltage Controlled Oscillator For Electrical Neural Stimulation", *IEEE International Conference on Advanced Control Circuits and Systems and New Paradigms in Electronics and Information Technology (ACCS/PEIT 2017)*, Alexandria, Egypt, pp. 344-347, 2017.
17. M. El-Adawy, A. K. ELdin, **Hassan Mostafa**, and S. Said, "Performace Evalution of Turbo Encoder Implemention on a Heterogeneous FPGA-CPU Platform Using SDSoC", *IEEE International Conference on Advanced Control Circuits and Systems and New Paradigms in Electronics and Information Technology (ACCS/PEIT 2017)*, Alexandria, Egypt, pp. 286-290, 2017.

18. D. Yasser, M. Elgamal, M. Atef, O. Hamada, A. H. Hassan, and **Hassan Mostafa**, "A Comparative Analysis of Optimized Low-Power Comparators for Biomedical-ADCs", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 129-132, 2017.
19. A. Fouad, Y. Ismail, and **Hassan Mostafa**, "Design of a Time-Based Capacitance-to-Digital Converter Using Current Starved Inverters", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 319-322, 2017.
20. M. Alsenwi, M. Saeed, T. Ismail, S. Gabran, and **Hassan Mostafa**, "Hybrid Compression Technique with Data Segmentation for Electroencephalography Data", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 235-238, 2017.
21. A. Abdelbaky, and **Hassan Mostafa**, "New Low Area NB-IoT Turbo Encoder Interleaver by sharing resources", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 66-69, 2017.
22. H. Elgemmazy, A. Helmy, **Hassan Mostafa**, and Y. Ismail, "An Improved Design for High Speed Analog Applications of The Fully Differential Operational Floating Conveyor", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 307-310, 2017.
23. K. Helal, A. Y. Aboelmakarem, A. - M. B. R. Fouad, T. S. Kamel, K. A. M. Nageeb, M. M. K. Mohamed, M. M. Abdelrhman, Y. Ismail, and **Hassan Mostafa**, "Low-Power High-Accuracy Seizure Detection Algorithms for Neural Implantable Platforms", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 231-234, 2017.
24. H. Fahmy, G. Baumann, M. AbdelGhany, and **Hassan Mostafa**, "V2V-Based Vehicle Risk Assessment and Control for Lane-Keeping and Collision Avoidance", *IEEE International Conference on Microelectronics (ICM 2017)*, Beirut, Lebanon, pp. 61-65, 2017.
25. A. Abubakr, A. Ibrahim, Y. Ismail, and **Hassan Mostafa**, "The Impact of Soft Errors on Memristor-Based Memory", *IEEE International NEW Generation of Circuits and Systems (NGCAS 2017)*, Genova, Italy, pp. 229-232, 2017.
26. A. Hassan, M. Elbadry, Y. Ismail, and **Hassan Mostafa**, "A Low-Power Self-Startup Bandgap Circuit for Energy Efficient Applications", *IEEE International NEW Generation of Circuits and Systems (NGCAS 2017)*, Genova, Italy, pp. 29-32, 2017.
27. A. K. ELdin, I. Ahmed, A. Obeid, A. Shalash, Y. Ismail, and **Hassan Mostafa**, "A Cost-Effective Dynamic Partial Reconfiguration Implementation Flow for Xilinx FPGA", *IEEE International NEW Generation of Circuits and Systems (NGCAS 2017)*, Genova, Italy, pp. 281-284, 2017.
    Best Silver Paper Award
28. A. Hassan, H. A. H. Fahmy, Y. Ismail, and **Hassan Mostafa**, "Exploiting the Dynamic Partial Reconfiguration on NoC-Based FPGA", *IEEE International NEW Generation of Circuits and Systems (NGCAS 2017)*, Genova, Italy, pp. 277-280, 2017.
    Best Golden Paper Award
29. A. K. ELdin, S. Hosny, K. Mohamed, M. Gamal, A. Hussein, E. Elnader, A. Shalash, A. M. Obeid, Y. Ismail, and **Hassan Mostafa**, "A Reconfigurable Hardware Platform Implementation for Software Defined Radio using Dynamic Partial Reconfiguration on Xilinx Zynq FPGA", *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2017)*, Boston, MA, USA, pp. 1540-1543, 2017.

30. A. Zaky, A., M. Shehata, Y. Ismail, and **Hassan Mostafa**, "Characterization and Model Validation of Triboelectric Nanogenerators using Verilog-A", *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2017)*, Boston, MA, USA, pp. 1536-1539, 2017.
31. S. F. Nafea, A. A. S. Dessouki, S. El-Rabaie, B. E. Elnaghi, Y. Ismail, and **Hassan Mostafa**, "Area-Efficient Read/Write Circuit for Spintronic Memristor Based Memories", *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2017)*, Boston, MA, USA, pp. 1544-1547, 2017.
32. A. H. Hassan, A. Ali, W. M. Ismail, M. Refky, Y. Ismail, and **Hassan Mostafa**a, "A 1 Gs/S 6-Bit Time-Based Analog-to-Digital Converter (T-ADC) for Front-End Receivers", *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2017)*, Boston, MA, USA, pp. 1605-1608, 2017.
33. A. Salaheldin, **Hassan Mostafa**, and A. M. Soliman, "A CODEC, Tiles to NoC Router Interface, for Next Generation FPGAs with Embedded NoCs", *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2017)*, Boston, MA, USA, pp. 1228-1231, 2017.
34. A. Hassan, E. Hamed, E. Badr, O. Sharkawy, Y. Ismail, and **Hassan Mostafa**, "A VCO-Based MPPT Circuit for Low-Voltage Energy Harvesters", *IEEE International Symposium on Very Large Scale Integration (ISVLSI 2017)*, Bochum-Germany, pp. 580-584, 2017.
35. H. Elgemmazy, A. Helmy, **Hassan Mostafa**, and Y. Ismail, "A Novel CMOS-based Fully Differential Operational Floating Conveyor", *IEEE International Symposium on Very Large Scale Integration (ISVLSI 2017)*, Bochum-Germany, pp. 604-608, 2017.
36. A. K. ELdin, A. Mohamed, A. Nagy, Y. Gamal, A. Shalash, Y. Ismail, and **Hassan Mostafa**, "Design Guidelines for the High-Speed Dynamic Partial Reconfiguration Based Software Defined Radio Implementations on Xilinx Zynq FPGA", *IEEE International Symposium on Circuits and Systems (ISCAS 2017)*, Baltimore, USA, pp. 1-4, 2017.
37. M. Beheiry, A. Aly, **Hassan Mostafa**, and A. M. Soliman, " 3D-NOCET: A Tool for Implementing 3D-NoCs Based on the Direct-Elevator Algorithm," *IEEE International Conference on Quality Electronic Design (ISQED 2017)*, pp. 144-148, Santa Clara, California, USA 2017.
38. A. H. Hassan, M. Wagih Ismail, and **Hassan Mostafa**, "A 200 MS/s 8-bit Time-Based Analog-to-Digital Converter with Inherit Sample and Hold, " *IEEE International System On Chip Conference (SOCC 2016)*, pp. 120-124, Seattle, WA, USA 2016.
39. M. Elmassry, M. Medhat, and **Hassan Mostafa**, "Novel Ultra Low Voltage Mobile Compatible RF MEMS Switch for Reconfigurable Microstrip Antenna, " *IEEE International System On Chip Conference (SOCC 2016)*, pp. 286-289, Seattle, WA, USA 2016.
40. A. H. Hassan, **Hassan Mostafa**, Tawfik Ismail, and Salam Gabran, "An Ultra-Low Power Voltage-to-Time Converter (VTC) Circuit for Low Power and Low Speed Applications, " *IEEE International System On Chip Conference (SOCC 2016)*, pp. 178-182, Seattle, WA, USA 2016.
41. Noha Gamal, Hossam A. H. Fahmy, Yehea Ismail, Mohamed Mohie Eldin, and **Hassan Mostafa** "Design Guidelines for Soft Implementations to Embedded NoCs of FPGAs", International Design and Test Symposium (IDT 2016), pp. 37-42, Hammamet, Tunisia 2016.
42. Mohamed Mohie-Eldin, Hossam A. H. Fahmy, Noha Gamal, Yehea Ismail, and **Hassan Mostafa**, "Leakage Power Evaluation of FinFET-Based FPGA

Cluster Under Threshold Voltage Variation", International Design and Test Symposium (IDT 2016), pp. 137-141, Hammamet, Tunisia 2016.
Best Paper Award: First Place

43. Ehab Belal, **Hassan Mostafa**, Yehea Ismail, and M. Sameh Said "A Voltage Multiplying AC/DC Converter for Energy Harvesting Applications ," *IEEE International Conference on Microelectronics (ICM 2016)*, pp. 229-232, Cairo, Egypt 2016.
44. Madyan Alsenwi, Tawfik Ismail, and **Hassan Mostafa**, "Performance Analysis of Hybrid Lossy/Lossless Compression Techniques for EEG Data," *IEEE International Conference on Microelectronics (ICM 2016)*, pp. 1-4, Cairo, Egypt 2016.
45. Mohamed Ashraf, **Hassan Mostafa**, and Ahmed Eladawy "A Low-Power Area-Efficient Design and Comparative Analysis for High-Resolution Neural Data Compression ," *IEEE International Conference on Microelectronics (ICM 2016)*, pp. 217-220, Cairo, Egypt 2016.
46. Assem Hussein, Vincent Gaudet, **Hassan Mostafa**, and Mohamed Elmasry "A 16-bit High Speed Low Power Hybrid Adder ," *IEEE International Conference on Microelectronics (ICM 2016)*, pp. 313-316, Cairo, Egypt 2016.
47. Mohamed A. Bahnasawi, Khaled Ibrahim, Ahmed Mohamed, Mohamed Khalifa, Ahmed Moustafa, Karim Abdelmonim, Yehea Ismail, and **Hassan Mostafa** "ASIC-Oriented Comparative Review of Hardware Security Algorithms for Internet of Things Applications ," *IEEE International Conference on Microelectronics (ICM 2016)*, pp.285-288, Cairo, Egypt 2016.
48. S. F. Nafea, A. A. S. Dessouki, S. El-Rabaie, Kh.El-Barbary, and **Hassan Mostafa**, "Read Disturbance and Temperature Variation Aware Spintronic Memristor Model", *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2016)*, pp. 1-4, Vancouver, Canada 2016.
49. K. Ismail, T. Ismail, Y. Ismail, and **Hassan Mostafa**, "Design and Implementation of CDR and SerDes for High-speed Optical Communication Networks using FPGA", *IEEE International Conference on Transparent Optical Networks (ICTON 2016)*, pp. 1-3, Trento, Italy 2016.
50. M. Abdelkader, A. Ali, A. Abdelaziz, W. M. Ismail, M. Refky, Y. Ismail, and **Hassan Mostafa**, "A 200MS/s, 8-bit Time-based Analog to Digital Converter (TADC) in 65nm CMOS Technology", *IEEE International Japan-Egypt Conference on Electronics, Communications and Computers (JEC-ECC 2016)*, pp. 25-28, Alexandria, Egypt 2016.
51. M. Elgabry, **Hassan Mostafa**, and A. M. Soliman, "A Comparative Study of the Voltage-to-Time Converters (VTCs) and the Voltage-to-Frequency Converters (VFCs) Circuits", *IEEE International Japan-Egypt Conference on Electronics, Communications and Computers (JEC-ECC 2016)*, pp. 21-24, Alexandria, Egypt 2016.
52. N. Gamal, H. Fahmy, Y. Ismail, and **Hassan Mostafa**, "Design Guidelines for Embedded NoCs on FPGAs, " *IEEE International Conference on Quality Electronic Design (ISQED 2016)*, pp. 69-74, Santa Clara, California, USA 2016.
53. A. Elbayoumi, **Hassan Mostafa**, and A. M. Soliman, "A New 65nm-CMOS 1V 8GS/s 9-bit Differential Voltage-Controlled Delay Unit Utilized for a Time-Based Analog-to-Digital Converter Circuit," *IEEE International Conference on Microelectronics (ICM 2015)*, pp. 158-161, Casablanca, Morocco 2015.
54. M. Elkhouly, A. Madian, and **Hassan Mostafa**, "Insights for Utilizing the Memristor as a Multi-bit Based Memory," *IEEE International Conference on Microelectronics (ICM 2015)*, pp. 79-82, Casablanca, Morocco 2015.

55. A. Sadek, **Hassan Mostafa**, and A. Nassar, "Dynamic Channel Coding Reconfiguration in Software Defined Radio," *IEEE International Conference on Microelectronics (ICM 2015)*, pp. 13-16, Casablanca, Morocco 2015.
56. M. Beheiry, A. Aly, **Hassan Mostafa**, and A. M. Soliman, "Direct-Elevator: A Modified Routing Algorithm for 3D-NoCs," *IEEE International Conference on Microelectronics (ICM 2015)*, pp. 222-225, Casablanca, Morocco 2015.
57. N. G. Tawfik, **Hassan Mostafa**, and Y. Ismail, "Comparison Between Analog and Digital Locking MPPT Unit for Micro-scale PV Energy Harvesting Systems," *IEEE International Conference on Microelectronics (ICM 2015)*, 67-70, Casablanca, Morocco 2015.
58. E. Belal, **Hassan Mostafa**, and M. S. Said, "Comparison between Active AC-DC Converters For Low Power Energy Harvesting Systems, " *IEEE International Conference on Microelectronics (ICM 2015)*, pp. 253-256, Casablanca, Morocco 2015.
59. A. El-Attar, S. Ahmed, Y. Abdelkader, A. Hassan, and **Hassan Mostafa**, "A Comparative Analysis of Optimized CMOS Neural Amplifier, " *IEEE International Conference on Microelectronics (ICM 2015)*, pp. 107-110, Casablanca, Morocco 2015.
60. Abdullah El-Bayoumi, **Hassan Mostafa**, and Ahmed Soliman, "A New 16-Bit Low-Power PVT-Calibrated Time-Based Differential Analog-to-Digital Converter (ADC) Circuit in CMOS 65nm Technology, pp. 492-493, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, Cairo, Egypt 2015.
61. Nermine Edward, Yehya Ghallab, **Hassan Mostafa**, and Yehea Ismail, " A CMOS Based Operational Floating Current Conveyor and its Applications, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 494-495, Cairo, Egypt 2015.
62. Ahmed Sadek, **Hassan Mostafa**, and Amin Nassar, "On the Use of Dynamic Partial Reconfiguration for Multi-Band/Multi-Standard Software Defined Radio, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 498-499, Cairo, Egypt 2015.
63. Sherif Omar Abdel-Aziz, **Hassan Mostafa**, Tawfik Ismail, and Salam Gabran, "Low-Power Implantable Seizure Detection Processor, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 496-497, Cairo, Egypt 2015.
64. Bassem Safieldeen, **Hassan Mostafa**, Hamdy Abdelhamid, and Yehea Ismail, "A Comparative Evaluation of Single-Walled Carbon Nanotubes and Copper in Interconnects and Through-Silicon Vias, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 519-522, Cairo, Egypt 2015.
65. Osama Abdelkader, **Hassan Mostafa**, Hamdy Abdelhamid, and Ahmed Soliman, "Impact of Technology Scaling on the Minimum Energy Point for FinFET Based Flip-Flops, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 462-465, Cairo, Egypt 2015.
66. Amr Hassan, Rami Ahmed, **Hassan Mostafa**, Hossam Fahmy, and Ahmed Hussein, "Performance Evaluation of Dynamic Partial Reconfiguration Techniques for Software Defined Radio Implementation on FPGA, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 183-186, Cairo, Egypt 2015.
67. Marwa Abdallah, **Hassan Mostafa**, and Mohamed Fathy, "Yield Optimization of Spintronic Memristor Based Memory Arrays, " *IEEE International Conference*

on Electronics, Circuits, and Systems (ICECS 2015), pp. 523-526, Cairo, Egypt 2015.

68. Nermine Edward, Yehya Ghallab, **Hassan Mostafa**, and Yehea Ismail, " A CMOS Based Operational Floating Current Conveyor, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 157-160, Cairo, Egypt 2015.
69. Tawfik Ismail, **Hassan Mostafa**, and Yehea Ismail, "Performance Evaluation of Wavelength Exchanging in WDM Optical Crossbar, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2015)*, pp. 681-684, Cairo, Egypt 2015.
70. Sondos Ismail, Ahmed Madian, **Hassan Mostafa**, and Amr Talaat, "A Novel Capacitive-to-Digital Converter Interface Based on MemCapacitors for MEMS Capacitive Sensing Applications, " *International Symposium on Nonlinear Theory and its Applications (NOLTA 2015)*, pp. 1-4, Hong Kong, China 2015.
71. Ayman Eltaliawy, **Hassan Mostafa**, and Yehea Ismail, "A New Digital Locking MPPT control for Ultra Low Power Energy Harvesting Systems, " *IEEE International NEW Circuits And Systems (NEWCAS 2015)*, pp. 1-4, Grenoble, France 2015.
72. Mohamed Mohie El-Din, **Hassan Mostafa**, and Yehea Ismail, "Performance Evaluation of FinFET-Based FPGA Cluster Under Threshold Voltage Variation, " *IEEE International NEW Circuits And Systems (NEWCAS 2015)*, pp. 1-4, Grenoble, France 2015.
73. Khaled Helal, Sameh Attia, Tawfik Ismail, and **Hassan Mostafa**, "Priority-Select Arbiter: An Efficient Round-Robin Arbiter, " *IEEE International NEW Circuits And Systems (NEWCAS 2015)*, pp. 1-4, Grenoble, France 2015.
74. Yasmen Elsayed, Tawfik Ismail, and **Hassan Mostafa**, "A Wide FBG-Based Optical Clock and Data Recovery for Optical Access Networks, " *IEEE International Conference on Transparent Optical Networks (ICTON 2015)*, pp. 1-4, Budapest, Hungary 2015.
75. Hoda Abdelsalam, Emad Hegazi, **Hassan Mostafa**, and Yehea Ismail, "A Reconfigurable Receiver Architecture Utilizing Time-Varying Matching Network for A Universal Receiver, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, pp. 1-4, Cairo, Egypt 2015.
76. K. Osama Ragab , **Hassan Mostafa**, and Ahmed Eladawy, "TDC SAR Algorithm with Continuous Disassembly (SAR-CD) for Time-Based ADCs, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, pp. 1-4, Cairo, Egypt 2015.
77. Osama Abdelkader, **Hassan Mostafa**, Hamdy Abd elhamid, and Ahmed M. Soliman, "The Impact of FinFET Technology Scaling on Critical Path Performance under Process Variations, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, pp. 1-4, Cairo, Egypt 2015.
78. Yasmine Elsayed, Amr Wageeh, Tawfik Ismail, and **Hassan Mostafa**, "All-Optical Clock and Data Recovery using Self-Pulsating Lasers for High-Speed Optical Networks, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, Cairo, Egypt 2015.
    Best Paper Award
79. Alaa Salaheldin, Karim Abdallah, Noha Gamal, and **Hassan Mostafa**, "Review of NoC-Based FPGAs Architectures, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, pp. 1-4, Cairo, Egypt 2015.

80. Khaled Ali, **Hassan Mostafa**, and Tawfik Ismail, "High Performance Layout-Friendly 64-Bit Priority Encoder Utilizing Parallel Priority Look-Ahead, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, pp. 1-4, Cairo, Egypt 2015.

81. Mostafa Ibrahim, Ayman Eltaliawy, **Hassan Mostafa**, and Yehea Ismail, "A New Digital Current Sensing Technique Suitable for Low Power Energy Harvesting Systems, " *IEEE International Conference on Energy Aware Computing Systems and Applications (ICEAC 2015)*, pp. 1-4, Cairo, Egypt 2015.

82. Hoda Abdelsalam, Emad Hegazi, **Hassan Mostafa**, and Yehea Ismail, "A New Tunable Receiver Front-End Supporting LTE, " *IEEE International Symposium on Circuits and Systems (ISCAS 2015)*, pp. 974-977, Lisbon, Portugal 2015.

83. Abdullah El-Bayoumi, **Hassan Mostafa**, and Ahmed M. Soliman, "A New Highly-Linear Highly-Sensitive Differential Voltage-to-Time Converter Circuit in CMOS 65nm Technology, " *IEEE International Symposium on Circuits and Systems (ISCAS 2015)*, pp. 1262-1265, Lisbon, Portugal 2015.

84. Khaled A. Helal, Sameh Attia, Tawfik Ismail, and **Hassan Mostafa**, "Comparative Review of NOCs in the Context of ASICs and FPGAs, " *IEEE International Symposium on Circuits and Systems (ISCAS 2015)*, pp. 1866-1869, Lisbon, Portugal 2015.

85. Hoda Abdelsalam, Emad Hegazi, **Hassan Mostafa**, and Yehea Ismail, "A New Programmable Receiver Front-End Architecture Supporting LTE, " *IEEE International Conference on Microelectronics (ICM 2014)*, pp. 25-28, Doha, Qatar 2014.

86. Ahmed El-Thakeb, Hamdy Abdelhamid, **Hassan Mostafa**, and Yehea Ismail, "Performance Evaluation of FinFET-Based SRAM Cells Under Statistical Threshold Voltage Variability, " *IEEE International Conference on Microelectronics (ICM 2014)*, pp. 88-91, Doha, Qatar 2014.

87. Marwa Abdullah, **Hassan Mostafa**, and Mohamed Fathy, "Yield Maximization of Memristor-Based Memory Arrays, " *IEEE International Conference on Microelectronics (ICM 2014)*, pp. 5-8, Doha, Qatar 2014.

88. Ahmed Ali, Ali Hassan, Maged Ali, Mohammed Hassoubh, Nabil Mohammed, M. Wagih Ismail, Mohamed Refky, and **Hassan Mostafa** , "A 1 GS/s 6 bits Time-Based ADC for front End Receivers, " *IEEE International Conference on Microelectronics (ICM 2014)*, pp. 96-99, Doha, Qatar 2014.

89. Assem Hussein, Mohamed Fawzy, M. Wagih Ismail, Mohamed Refky, and **Hassan Mostafa**, "A 4-Bit 6 GS/s Time-Based Analog-To-Digital Converter, " *IEEE International Conference on Microelectronics (ICM 2014)*, pp. 92-95, Doha, Qatar 2014.

90. M. Wagih Ismail, and **Hassan Mostafa**, "A New Design Methodology for Voltage-to-Time Converters (VTCs) Circuits suitable for Time-Based Analog-to-Digital Converters (T-ADC), " *IEEE International System On Chip Conference (SOCC 2014)*, pp. 103-108, Las Vegas, Nevada, USA 2014.

91. **Hassan Mostafa**, and Yehea Ismail, "Modeling the Limitations Imposed by the Timing Jitter/Skew on the Time-Based ADC Performance, " *IEEE International Conference on Engineering and Technology (ICET 2014)*, pp. 1-5, Cairo, Egypt 2014.

92. Mohamed Elshamy, **Hassan Mostafa** and M. Sameh Said, "Design Considerations/Insights for Memristor-Based Memory Arrays, " *IEEE International Conference on Engineering and Technology (ICET 2014)* , pp. 1-6, Cairo, Egypt 2014.

93. Mohamed Elshamy, **Hassan Mostafa** and M. Sameh Said, "New Non-Destructive Read/Write Circuit for Memristor-Based Memories, " *IEEE International Conference on Engineering and Technology (ICET 2014)*, pp. 1-5, Cairo, Egypt 2014.

94. **Hassan Mostafa**, and Yehea Ismail, "A Design Oriented Model for the Jitter/Skew of the Voltage-to-Time Converter (VTC) Circuits, " *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2014)*, pp. 121-126, Toronto, Canada 2014.

95. Mohamed Elshamy, **Hassan Mostafa** and M. Sameh Said, "A Novel Non-Destructive Readout Circuit for Memristor-Based Memory Arrays, " *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2014)*, pp. 312-316, Toronto, Canada 2014.

96. Mohamed Elshamy, **Hassan Mostafa** and M. Sameh Said, "Comparative Review of the TiO2 and the Spintronic Memristor Devices, " *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2014)*, pp. 317-322, Toronto, Canada 2014.

97. Ayman Eltaliawy, **Hassan Mostafa**, and Yehea Ismail, "Circuit Design Techniques for Increasing The Output Power of Switched Capacitor Charge Pumps, " *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2014)*, pp. 251-255, Toronto, Canada 2014.

98. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "Negative Capacitance Circuits for Process Variations Compensation and Timing Yield Improvement, " *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2014)*, pp. 127-130, Toronto, Canada 2014.

99. **Hassan Mostafa**, and Yehea Ismail, "Nanometer FPGA: Challenges and Opportunities, " *IEEE International Conference on Industry Academia Collaboration (IAC 2014)*, pp. 1-4, Cairo, Egypt 2014.

100. **Hassan Mostafa**, and Yehea Ismail, "Highly-Linear Voltage-to-Time Converter (VTC) Circuit for Time-Based Analog-to-Digital Converters (T-ADCs), " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2013)*, pp. 149-152, Abu Dhabi, United Arab Emirates 2013 .

101. Ayman Eltaliawy, **Hassan Mostafa**, and Yehea Ismail, "Microscale Solar Energy Harvesting for Wireless Sensor Networks Based on Exponential Maximum Power Locking Technique, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2013)*, pp. 889-892, Abu Dhabi, United Arab Emirates 2013.

102. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "Negative Capacitance Circuits for Process Variations Compensation and Timing Yield Improvement, " *IEEE International Conference on Electronics, Circuits, and Systems (ICECS 2013)*, pp. 277-280, Abu Dhabi, United Arab Emirates 2013.

103. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "Comparative Analysis of Power Yield Improvement under Process Variation of Sub-threshold Flip-Flops," *IEEE International Symposium on Circuits and Systems (ISCAS 2010)*, pp. 1739-1742, Paris, France 2010.

104. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "Statistical Timing Yield Improvement of Dynamic Circuits Using Negative Capacitance Technique," *IEEE International Symposium on Circuits and Systems (ISCAS 2010)*, pp. 1747-1750, Paris, France 2010.

105. **Hassan Mostafa** and Ahmed M. Soliman, Novel Low-Power Accurate Wide-band CMOS Negative-Second-Generation-Current-Conveyor Realizations Based on Floating-Current-Source Building Blocks, *Proceedings of IEEE Toronto International*

Conference on Science and Technology for Humanity 2009 (TIC-STH 2009), pp. 720-725, Toronto, Canada, 2009.

106. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "Comparative Analysis of Timing Yield Improvement under Process Variations of Flip-Flops Circuits," *Proceedings of IEEE International Symposium on VLSI (ISVLSI 2009)*, pp. 133-138, Florida, USA 2009.
107. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "The Impact of Timing Yield Improvement Under Process Variation on Flip-Flops Soft Error Rate," *Proceedings of IEEE International Symposium on Quality Electronic Design in Asia (ASQED 2009)*, pp. 109-117, KL, Malaysia 2009.
108. **Hassan Mostafa**, Mohab Anis and Mohamed Elmasry, "Comparative Analysis of Process Variation Impact on Flip-Flops Soft Error Rate," *Proceedings of IEEE International Symposium on Quality Electronic Design in Asia (ASQED 2009)*, pp. 103-108, KL, Malaysia 2009.
109. Faizal Khalek, **Hassan Mostafa**, and Mohab Anis, "Statistical Model for Ring Oscillator Phase Noise Variability Accounting for Within-Die Process Variation," *Proceedings of IEEE International Symposium on Quality Electronic Design in Asia (ASQED 2009)*, pp. 118-121, KL, Malaysia 2009.

Professional Experience

- **Track Chair (TC) of the IEEE International MidWest Symposium on Circuits and Systems (MWSCAS 2018) May 2018**
- **Review Committee Member (RCM) of the IEEE International Symposium on Circuits and Systems (ISCAS) - Flagship conference of the IEEE CAS Society Jan. 2018**
- **Associate Editor at Elsevier Microelectronics Journal May 2017**
- **Member of the IEEE Technical Committee of VLSI Systems and Applications (TC-VSA) since May 2017**
- **IEEE Senior Member February 2015**
- **Session Chair at the several IEEE International Conferences such as:**
  - MWSCAS 2017/2018 (International Symposium on Circuits and Systems)
  - ISCAS 2017/2018 (International Symposium on Circuits and Systems)
  - ISVLSI 2017 (International Symposium on Very Large Scale Integration)
- **Cairo University representative of NI (National Instruments) June 2014 - Present**
- **Cairo University representative of Valeo Innovation Challenge International Competition November 2013 - Present**
- **Fujitsu research labs**

  During my PostDoctoral fellowship, I was working in the following two projects funded by Fujitsu research labs at the University of Toronto: (Due to the non-disclosure agreement signed with Fujitsu research labs, no more clarifications of these projects are presented)

- **Developing, fabricating, and testing next generation FPGA (Field Programmable Gate Array) 4X4 mm^2 test chips** incorporating better interconnect strategies, faster devices such as the DtMOS (Dynamic threshold MOS transistor), dynamic partial configuration, and low power methodologies.
- **Creating models and circuits for the STT-MRAM (Spin Torque Transfer Magnetoresistance Random Access Memory)** with verification by using hardware testing measurements of Fujitsu STT-MRAM arrays.

- **Fabrication Experience**

  3.2X3.2 mm^2 Test Chip Tape-out on UMC 130nm technology through EuroPractice November 2016.

  This test chip implements the digital processing part of the neural EEG signal to perform the classifications and trigger the electrical stimulation required for Epilepsy and Parkinson treatment. The chip is currently under test.

  1.5X1.5 mm^2 Test Chip Tape-out on UMC 130nm technology through EuroPractice November 2016.

  This test chip implements the analog interfacing circuit for the active neural platform that includes the Low Noise Amplifiers (LNAs), the Analog to Digital Converters (ADCs), and the feedback electrical stimulation part. The chip is currently under test.

  3.2X3.2 mm^2 Test Chip Tape-out on UMC 130nm technology through EuroPractice July 2015.

  This test chip implements the next generation FPGA and is tested with several benchmarks using VPR (Versatile Place and Route).

  1.7X1.7 mm^2 Test Chip Tape-out on TSMC 65nm technology through MOSIS and CMC February 2010 to July 2010.

  This test chip has been tested and shows very promising results, especially, the negative capacitance fabricated circuits.

- **Technical Reviewer for the following journals: 2009-present**
  - IEEE Transactions on Very Large Scale Integration (TVLSI)
  - IEEE Transactions on Circuits and Systems I (TCAS-I)
  - IEEE Transactions on Circuits and Systems II (TCAS-II)
  - IEEE Transactions on Semiconductor Manufacturing (TSM)
  - Microelectronics journal
  - Journal of Circuits, Systems, and Computers (JCSC)
  - ACM Transactions on Design Automation of Electronic Systems (TODAES)
  - IET Circuits, Devices and Systems

- **Expert Reviewer** **2011-present**
  - National Center of Science and Technology Evaluation, Kazakhstan
  - National Telecommunication Regulatory Authority (NTRA), Egypt
  - Information Technology Academia Collaboration - ITAC and Information Technology Industry Development Agency - ITIDA, Egypt

  In this reviewing process, I evaluate several project proposals every year. The topics of these proposals lie within my area of expertise. This reviewing process is a paid job on the basis of $250 per research proposal review.

- **Interuniversity MicroElectronics Center (IMEC)**, Leuven, Belgium

  Internship in the Transistor fabrication and Clean Rooms Sector. I worked in the Design and Fabrication of an analog interface for organic thin-film ISFET-based Microsensors Project. **June 2001 to September 2001**

NON-ACADEMIC ACHIEVEMENTS

-I am a member of a social community called "RESALA" which aims at society welfare and development, 2001-present. I was elected to be one of RESALA executive committee, 2000-2001.

-I was one of the UWESA (University of Waterloo Egyptian student association) members, 2007-present. I was selected to be one of UWESA executives committee, 2007-2008.

-I am volunteering in an organization called the Canadian charger aiming at providing an alternative media for Canadians, 2009-present.