



**Associate Professor**  
**Department of Electrical Engineering**  
**Faculty of Engineering**  
**Port Said University**

## Contact Information

**Phone:** 00201063016414

**Email:** smsharroush@gmail.com

## Personal Information

**Date of Birth:** 27 September, 1980.

**Place of Birth:** Port Said, Egypt.

**Nationality:** Egyptian

**Marital Status:** Single

**Occupation:** Associate Professor, Electrical Engineering Department, Faculty of Engineering, Port Said University, Egypt.

## Education

### Doctor of Philosophy Thesis

University of Port Said, Egypt, 2011

**Thesis Title:** Design Techniques for High Performance MOS Digital Integrated Circuits

### Master of Science Thesis

University of Suez Canal, Egypt, 2007

**Thesis Title:** Reference Generation Methods for Use in Reading Ferroelectric Random-Access Memories

### Bachelor in Engineering, Electrical-Engineering Department

University of Suez Canal, Egypt, 2002

**Rank:** Very good with honour degree

**Graduation Project Title:** Microwave Filters Using Microstrip Line

## Work Experience

1. **Professor** at Faculty of Engineering, Port Said University, **from 2023 to now.**
2. **Associate Professor** at Faculty of Engineering, Port Said University, **from 2017 to 2023.**
3. **Assistant Professor** at Faculty of Engineering, Port Said University, **from 2013 to 2017.**
4. **Assistant Professor** at Faculty of Industrial Education, Suez University, **from 2012 to 2013.**
5. **Teaching Assistant** at Faculty of Industrial Education, Suez-Canal University, **from 2007 to 2012.**
6. **Administrator** at Faculty of Industrial Education, Suez-Canal University, **from 2003 to 2007.**

He also works in Faculty of Petroleum and Mining Engineering, Suez University, Higher Institute of Engineering in New Damietta, Higher Institute of Engineering, Delta Academy, Higher Institute of Engineering and Technology in El Arish, and Faculty of Engineering, Suez-Canal University.

**He is a reviewer for several international journals and conferences** including IEEE Transactions on Circuits and Systems (TCAS) I: Regular Papers, IEEE Transactions on Very Large Scale Integration Systems (TVLSI), the International Journal of Circuit Theory and Applications (IJCTA), Microelectronics Journal (MEJ), International Journal of Electronics and Communications (AEU), International Journal of Electrical and Computer Engineering, Ain Shams Engineering Journal, and IEEE International Conference on Electronics, Circuits, and Systems (ICECS). He is also a member of the editorial board of Port Said Engineering Research Journal (PSERJ).

## **Teaching Experience**

### **1. Undergraduate Courses**

#### **1.1 Branch of Electronics**

1. Electric Circuits.
2. Logic Circuits.
3. Electronic Circuits.
4. Semiconductor Physics and Devices.
5. Power Electronics.
6. Analog Integrated Circuits.
7. Digital Integrated Circuits.
8. Analog Filter Design.
9. Communications Electronics.
10. Microwave Electronics.
11. Radio-Frequency Circuit Design.
12. Optical Electronics.

#### **1.2 Branch of Communications**

13. Theory of Analog Communications.
14. Theory of Digital Communications.
15. Optical-Fiber Communications.
16. Audio and Visual Systems.

#### **1.3 Branch of Signals and Systems**

17. Signals and Systems.
18. Digital Signal Processing.
19. Control Systems.

#### **1.4 Branch of Waves and Antennas**

20. Electromagnetic Fields.
21. Electromagnetic Waves.
22. Microwave Engineering.
23. Antennas and Wave Propagation.

### **1.5 Computer Courses**

24. Microprocessors.
25. Computer Architecture.
26. Computer Networks.

### **1.6 General Courses**

27. MATLAB.
28. Fundamentals of Measurements.
29. Mathematics (Calculus, Ordinary Differential Equations, Laplace Transform, Fourier Analysis, Partial Differential Equations, Numerical Analysis, Probability, Complex Analysis).

## **2. Postgraduate Courses**

30. Physics and Modeling of Electronic Devices.
31. Analysis and Design of Analog Integrated Circuits.
32. Analysis and Design of Digital Integrated Circuits.
33. Radio-Frequency Microelectronics.
34. Design of Integrated Circuits for Optical Communications.

## **Research Interests**

The research interests include analog and digital integrated circuits, ferroelectric memories, dynamic random-access memories, single-electron transistors, photonics, and optical-fiber communications.

## **Publications**

### **1. Journals with Impact Factor**

1. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, E.-S. A. El-Badawy, "Dynamic Random-Access Memories without Sense Amplifiers", *Elektrotechnik & Informationstechnik* 129/2: 88–101, 2012.
2. S. M. Sharroush, "Reading DRAM cells using two properly designed cascaded inverters", *Elektrotechnik & Informationstechnik*, Vol. 131, Issue: 2: Pages: 41 – 52, 2014.
3. S. M. Sharroush, "A novel high-performance time-balanced wide fan-in CMOS circuit," *Alexandria Engineering Journal*, Vol. 55, Issue: 3, Pages: 2565 – 2582, 2016.
4. S. M. Sharroush, "Performance optimization of 1T-1C DRAMs: A quantitative study," *Microelectronics Journal*, Vol. 52, Pages: 147 – 164, 2016.

5. S. M. Sharroush, "Understanding the behavior of RTD-loaded NMOS inverter through compact-form analysis," *Ain Shams Engineering Journal*, 2017.
6. S. M. Sharroush, "A voltage-controlled ring oscillator based on an FG MOS transistor," *Microelectronics Journal*, Vol. 66, Pages: 167 – 186, 2017.
7. S. M. Sharroush, "A novel high-speed CMOS circuit based on a gang of capacitors," *International Journal of Electronics*, 2017.
8. S. M. Sharroush, "Analysis of the subthreshold CMOS logic inverter," *Ain Shams Engineering Journal*, Vol. 9, Issue: 4, Pages: 1001 – 1017, Dec. 2018.
9. S. M. Sharroush, "Time-domain readout of 1T-1C DRAM cells," *Journal of Circuits, Systems, and Computers*, Vol. 27, No. 1, Pages: 1850005: 1 – 36, 2018.
10. S. M. Sharroush, "A novel low-latency DRAM based on the bitline-discharge rate," *International Journal of Electronics*, Vol. 105, Issue: 12, 2018.
11. S. M. Sharroush, "A pre-discharged bitline 1T-1C DRAM readout scheme," *Microelectronics Journal*, Vol. 83, Pages: 168 – 184, Jan. 2019.
12. S. M. Sharroush, "Design of the CMOS inverter-based amplifier: A quantitative approach," *International Journal of Circuit Theory and Applications*, Vol. 47, Issue: 7, Pages: 1006 – 1036, 2019. [Recognized as one of the most read papers in *International Journal of Circuit Theory and Applications* in 2018 - 2019].
13. S. M. Sharroush, "Inverter-based voltage-controlled and programmable comparators," *International Journal of Circuit Theory and Applications*, 2020.
14. S. M. Sharroush and Y. S. Abdalla, "Parameter extraction and modelling of the MOS transistor by an equivalent resistance," *Journal of Mathematical and Computer Modelling of Dynamical Systems*, Vol. 27, Issue: 1, 2021.
15. S. M. Sharroush and Y. S. Abdalla, "Optimum sizing of the sleep transistor in MTCMOS technology," *International Journal of Electronics and Communications*, Vol. 138, Aug. 2021.
16. S. M. Sharroush and Y. S. Abdalla, "Proposed wide dynamic-range controllable current sources," *Ain Shams Engineering Journal*, Vol. 14, Issue: 9, Feb. 2023.
17. S. M. Sharroush and E. Badry, "Proposed time-mode wide fan-in NAND and NOR gates," *International Journal of Circuit Theory and Applications*, May 2023.
18. S. M. Sharroush and Y. S. Abdalla, "Two proposed BiCMOS inverters with enhanced performance," *Ain Shams Engineering Journal*, Apr. 2023.

## 2. Journals without Impact Factor

19. S. M. Sharroush, Mahmoud Yehia Fekry, Ashraf Mokhtar Kareem El-Din, and Ali Ezzat Salama, "Reference-voltage generation for use in reading 1T – 1C ferroelectric random-access memories", *Port Said Engineering Research Journal*, Faculty of Engineering, Volume 10, No. 1, Mar, 2006.
20. S. M. Sharroush, Mahmoud Yehia Fekry, Ashraf Mokhtar Kareem El-Din, and Ali Ezzat Salama, "A self-referenced scheme for reading 1T-1C ferroelectric random-access memory cells", *Port Said Engineering Research Journal*, Faculty of Engineering, Volume 11, No. 11, Mar, 2007.
21. S. M. Sharroush, A. A. Dessouki, Y. S. Abdalla, and E. A. El-Badawy, "Speeding-up

- MOS circuits containing stacks”, Port Said Engineering Research Journal, Faculty of Engineering, Volume 16, No. 1, Pages: 165 – 175, 2012.
22. S. M. Sharroush, A. A. Dessouki, Y. S. Abdalla, and E. A. El-Badawy, “Current-mode readout of dynamic random-access memories”, Port Said Engineering Journal, Faculty of Engineering, Volume 16, No. 1, Pages: 176 – 182, 2012.
  23. S. M. Sharroush, “A pseudo-PMOS logic for realizing wide fan-in NAND gates,” Global Journal of Researches in Engineering, Vol. XVII, Issue VII, 2017.
  24. S. M. Sharroush, “Optimizing the performance of MOS stacks,” Iraqi Journal for Electrical and Electronic Engineering, Vol. 16, Issue 1, Pages: 85 – 98, Jun. 2020.
  25. S. M. Sharroush, “A charge-accumulation based high-performance CMOS circuit,” Port Said Engineering Research Journal, Faculty of Engineering, Vol. 26, Issue: 3, Sep. 2022.
  26. S. M. Sharroush and Y. S. Abdalla, “A real-time electronically tunable All-MOS universal biquadratic voltage-mode filter,” Jordan Journal of Electrical Engineering, Vol. 2, Issue: 2, Pages: 241 – 271, Jun. 2023.
  27. S. M. Sharroush and S. F. Nafea, “A novel domino logic based on floating-gate MOS transistors,” Jordan Journal of Electrical Engineering, Vol. 9, Issue: 3, Pages: 410 – 438, Sep. 2023.

### 3. International Conferences

28. A. E. Salama, S. M. Sharroush, and M. Y. Fekry, “Increasing the sense margin of 1T-1C ferroelectric random-access memories,” IEEE International Symposium on Circuits and Systems, Pages: 2268 – 2271, 2007.
29. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, “Speeding-up wide-fan in domino logic using a controlled strong PMOS keeper,” International Conference on Computer and Communication Engineering, Pages: 633 – 637, 2008.
30. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, “A novel technique for speeding up domino CMOS circuits containing a long chain of NMOS transistors,” International Conference on Electronic Design, Pages: 1 – 9, 2008.
31. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, “Impact of technology scaling on the performance of domino CMOS logic,” International Conference on Electronic Design, Pages: 1 – 7, 2008.
32. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, “Subthreshold MOSFET transistor amplifier operation,” 4<sup>th</sup> International Design and Test Workshop (IDT), Pages: 1 – 6, 2009.
33. S. M. Sharroush, “1T-1C FRAM cell reading without reference-voltage generation”, 2<sup>nd</sup> International Japan-Egypt Conference on Electronics, Communications, and Computers, Egypt, Pages: 65 - 70, 2013.
34. S. M. Sharroush, “An All-NMOS-transistors digital-to-analog converter”, 2<sup>nd</sup> International Japan-Egypt Conference on Electronics, Communications, and Computers, Egypt, Pages: 71 - 76, 2013.
35. S. M. Sharroush, “Representing the transistor by an equivalent resistor,” 5<sup>th</sup> International Conference on Electronic Devices, Systems and Applications (ICEDSA), Pages: 1 – 4, 2016.
36. S. M. Sharroush, “A bitline-driven 1T-1C DRAM readout scheme,” International

- Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT), Pages: 2921 – 2925, 2016.
37. S. M. Sharroush, "A novel current-race fast CMOS circuit," 5th International Conference on Electronic Devices, Systems and Applications (ICEDSA), Pages: 1 – 4, 2016.
  38. S. M. Sharroush, "Performance optimization of MOS current-mode logic," International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT), Pages: 2915 – 2920, 2016.
  39. S. M. Sharroush, "A novel variable-gain amplifier based on an FGMOS transistor," 5th International Conference on Electronic Devices, Systems and Applications (ICEDSA), Pages: 1 – 4, 2016.
  40. S. M. Sharroush, "Impact of technology scaling on the performance of DRAMs," 5th International Conference on Electronic Devices, Systems and Applications (ICEDSA), Pages: 1 – 4, 2016.
  41. S. M. Sharroush, "An alternative to CMOS stacks based on a floating-gate transistor," IEEE International Conference on Electronics, Circuits, and Systems (ICECS), Pages: 109 – 112, 2015.
  42. S. M. Sharroush, "A novel self-referenced ferroelectric-memory readout scheme," IEEE International Conference on Electronics, Circuits, and Systems (ICECS), Pages: 105 – 108, 2015.
  43. S. M. Sharroush, "Low-power and high-speed DRAM readout scheme," IEEE 20th International Conference on Electronics, Circuits, and Systems (ICECS), Pages: 791 – 794, 2013.
  44. S. M. Sharroush, "Novel CMOS-inverter based VGA and VCRO", 6<sup>th</sup> International Japan-Egypt Conference on Electronics, Communications, and Computers, Egypt, 16 – 18 Dec., 2018.
  45. Y. S. Abdalla and S. M. Sharroush, "A novel compact and high-speed CMOS parity generator/checker," International Conference on Computer and Information Sciences, 3 – 4 Apr., 2019.
  46. S. M. Sharroush, "A novel charge-sharing based DRAM readout scheme," 7<sup>th</sup> International Japan-Egypt Conference on Electronics, Communications, and Computers, Egypt, 15 – 16 Dec., 2019.
  47. S. M. Sharroush, "A novel current-domain DRAM readout scheme," International Conference on Microelectronics, Egypt, 15 – 18 Dec., 2019.

#### **4. Local Conferences**

48. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, "Enhancing speed and noise immunity of domino CMOS logic", Al-Azhar Engineering Tenth International Conference, December 24 - 26, 2008.
49. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, "Compensating for the keeper current of CMOS domino logic using a well designed NMOS transistor," National Radio Science Conference, Pages: 1 – 8, 2009.
50. S. M. Sharroush, Y. S. Abdalla, A. A. Dessouki, and E. A. El-Badawy, "A novel low-power and high-speed dynamic CMOS logic circuit technique," National Radio Science Conference, Pages: 1 – 8, 2009.
51. S. M. Sharroush, "DRAM reading using a current mirror", 30<sup>th</sup> National Radio

- Science Conference, Egypt, Pages: 462 – 471, 2013.
52. S. M. Sharroush, "An MTCMOS subthreshold-leakage reduction algorithm," 2<sup>nd</sup> Novel Intelligent and Leading Emerging Sciences Conference (NILES2020), Egypt, Cairo, 24 - 26 Oct. 2020.
  53. S. M. Sharroush, "Optimum sizing of the sleep transistor in MTCMOS technology," 2<sup>nd</sup> Novel Intelligent and Leading Emerging Sciences Conference (NILES2020), Egypt, Cairo, 24 - 26 Oct. 2020.

## Participations in Quality Control and Accreditation

1. Participating in coordinating the institutional capacity standard.
2. Participating in the preparation of the self-study and the preparation of the measurement and evaluation file.
3. Participating in the quality work of the Electrical Engineering Department at the Faculty of Engineering - Port Said University, including preparing and reviewing specifications and annual reports for undergraduate and postgraduate courses, and reviewing academic regulations.

## Supervising Theses

**Supervision of a master's thesis entitled:** Design of CMOS Transimpedance Amplifiers for Optical communications in the Faculty of Engineering, Port Said University.

## Training Courses

1. Statistical analysis of data (SPSS) during the period from 11/11/2017 to 11/13/2017.
2. Graphics-Adobe Photoshop during the period from 4/8/2019 to 4/11/2019.
3. Online exams during the period from 9/12/2021 to 9/13/2021.
4. Crisis and disaster management during the period from 9/15/2021 to 9/16/2021.
5. Strategic planning during the period from 11/17/2021 to 11/18/2021.
6. Design and production of electronic content during the period from 12/12/2021 to 12/13/2021.

## Academic Conferences

1. International Conference of Electronics, Circuits, and Systems.
2. International Japan-Africa Conference on Electronics, Communications, and Computations.
3. International Conference on Microelectronics.
4. Novel Intelligent and Leading Emerging Sciences International Conference.

## Workshops

1. The Academy for Developing a Successful Journal in 17 Jan. 2018.
2. New Trends in Research Dissemination in 16 Apr. 2018.
3. How to Get Published in 15 Dec. 2018.

4. Workshop for Journal Editors: Scopus Selection Criteria in 19 Aug. 2020.
5. Best Practices for Peer Review and Authorship in 14 Oct. 2020.

## **University and Community Activities**

1. Participation in the preparation and review of the college regulations of the Faculty of Engineering - Port Said University, in force since 2014 to date.
2. Participating in the preparation of the two proposed bylaws of the Faculty of Engineering - Port Said University with the credit hour system (they are being prepared for undergraduate and postgraduate studies).
3. Participating in the preparation of the proposed bylaw of the Higher Institute of Engineering and Technology in El Arish.
4. Membership of the committee for preparing the research plan for the department of Electrical Engineering in the college for the period from 2019 to 2024.
5. Participation in the preparation, receipt, and operation of the new electronics laboratories in the Electrical-Engineering Department.
6. Participation in the laboratory purchase committees and the maintenance of imaging equipment in the college.
7. Participation annually, from 2016 to this year, in the arbitration of the International Science and Engineering Fair (ISEF), which is held at the Technology Development Center in Port Said Governorate.
8. Participation in setting questions for the organization and administration system for the purpose of evaluating graduates applying to work in government agencies.
9. Supervising the electronic coordination of high school students in the college during the period from 2015 to 2017.

## **Core Skills**

1. Ability to diagnose data.
2. Ability to research and classify information.
3. Ability to learn quickly.
4. Excellent sorting skills.
5. Ability to make good conclusions.