

MOHAMED BALLA ELAMIEN

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EDUCATIONAL BACKGROUND

Degrees and Diplomas

2021 Ph.D. (Electrical and Computer Engineering), University of Calgary, Alberta, Canada
2017 M.Sc. (Electrical and Electronics Engineering), University of Sharjah, Sharjah, UAE
2015 B.Sc. (Electrical and Electronics Engineering), University of Sharjah, Sharjah, UAE

Qualifications, Licenses and Certifications

2021 Graduate Student Certificate in University Teaching and Learning, University of Calgary, Alberta, Canada

Other Specialized Training

2021 Postdoctoral Associate, University of Calgary, Alberta, Canada

CURRENT STATUS AT MCMASTER

01/2023 – 06/2026 Assistant Professor, tenure-track, the Department of Electrical and Computer Engineering

PROFESSIONAL ORGANIZATIONS

2017-present Institute of Electrical and Electronics Engineers (IEEE)

EMPLOYMENT HISTORY

Academic Experience

01/2023– present Assistant Professor, Department of Electrical and Computer Engineering, McMaster University, Hamilton, ON, Canada
05/2021– 01/2022 Postdoctoral Associate, Department of Electrical and Software Engineering, University of Calgary, AB, Canada
08/2021– 01/2022 Seasonal Instructor, Department of Electrical and Software Engineering, University of Calgary, AB, Canada
01/2021– 01/2022 Academic Advisor, Department of Electrical and Software Engineering, University of Calgary, AB, Canada
01/2021– 05/2022 Lab Instructor, Department of Electrical and Software Engineering, University of Calgary, AB, Canada
01/2019– 05/2020 Seasonal Instructor, Department of Electrical and Software Engineering, University of Calgary, AB, Canada

Industrial Experience

01/2022 – 01/2023 Senior Analog and Mixed-Signal Circuit Design Engineer, Synopsys Inc, Canada

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Journal Reviewer

IEEE Transactions on Circuits and Systems I: Regular Papers (TCAS-I)
IEEE Transactions on Circuits and Systems II: Express Briefs (TCAS-II)
International Journal of Electronics and Communications (AEUE)
International Journal of Circuit Theory and Applications (CTA)
Circuits, Systems, and Signal Processing (CSSP)

Conference Reviewer

IEEE International NEWCAS 2023
IEEE International Midwest Symposium on Circuits and Systems (MWSCAS) 2019, 2020
IEEE International Conference on Electronics, Circuits and Systems (ICECS) 2019, 2020

AREAS OF INTEREST

Circuit Theory, CMOS Integrated Circuits, Analog and Mixed-Signal Circuit design, RF and mm-wave Integrated Circuits, Biosensors, Biomedical Devices

HONOURS

- 2022 Schulich School of Engineering Graduate Student Research Excellence Award, University of Calgary (\$500)
- 2020 Alberta Innovates Graduate Student Scholarship -Technology category, Government of Alberta, Canada (\$18,000)
- 2020 Alberta Graduate Excellence Scholarship (AGES)-International, Government of Alberta, Canada (\$15,000)
- 2020 Research Productivity Award, University of Calgary (\$1,000)
- 2019 Alberta Graduate Excellence Scholarship (AGES)-International, Government of Alberta, Canada (\$15,000)
- 2019 Research Productivity Award, University of Calgary (\$1,500)
- 2015-2017 Teaching assistantship Award, University of Sharjah (\$22,000 per annum)
- 2015 The First rank Undergraduate Student in the Engineering College, University of Sharjah
- 2012-2015 Chancellor Honors of Outstanding Academic Achievement, University of Sharjah (\$3,000 per annum)
- 2011-2015 Undergraduate Scholarship, The Sheikh Zayed Bin Sultan Award (\$10,000 per annum)

LIFETIME PUBLICATIONS

Peer Reviewed

Books

Mohamed Elamien and Soliman Mahmoud, On the Design of a Highly Linear CMOS Programmable Transconductor, ISBN 978-620-2-00793-1, LAP LAMBERT Academic Publishing, July 2017.

Journal Articles

1. M. B. Elamien, B. J. Maundy, A. S. Elwakil and L. Belostotski, "Second-Order Cascode Amplifier Filters," in *Integration*, vol. 84, pp. 111-121, 2022.
2. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil, "Circuit Design with Symbolic Math Toolboxes: Demonstrative Examples," in *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, 2021. DOI: 10.1109/TVLSI.2021.3109560.
3. M. B. Elamien, A. Sheldon, B. J. Maundy, A. S. Elwakil and L. Belostotski, "Delay-Tunable Compact RC-Only All-Pass Filter," in *IEEE Microwave and Wireless Components Letters*, pp. 1–4, 2021. DOI: 10.1109/LMWC.2021.3069507.
4. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil, "Ultra-Low-Power Compact Single-Transistor All-Pass Filter with Tunable Delay Capability," in *International Journal of Electronics and Communications*, vol. 132, pp. 153645, 2021.
5. A. Al-Ali, A. S. Elwakil, B. J. Maundy, A. Allagui, M. B. Elamien, "Estimating phase error using a Hilbert transform-based time-domain technique," in *Int J Circ Theor Appl*. 2021; 1- 11.
6. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil, "Synthesis of Wideband High-Quality-Factor Delay-Tunable Fully Differential All-Pass Filters," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 68, no. 10, pp. 4348–4360, 2020.
7. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil, "On Chip 0.5V 2GHz Four-Output Quadrature-Phase Oscillator," in *International Journal of Electronics and Communications*, vol. 126, pp. 153393, 2020. DOI: 10.1016/j.aeue.2020.153393
8. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil, "Wideband third-order single-transistor all-pass filter," in *International Journal of Circuit Theory and Applications*, vol. 48, no. 7, pp. 1201-1208,

2020.

9. M. B. Elamien and S. A. Mahmoud, "OTA-based switchable gain and order multi-standard receiver analog baseband chain," in *AEU - International Journal of Electronics and Communications*, vol. 106, pp. 1-11, 2019. DOI: 10.1016/j.aeue.2019.04.021
10. A. S. Elwakil, B. J. Maundy, M. B. Elamien and L. Belostotski, "A four-quadrant current multiplier/divider cell with four transistors only," in *Analog Integrated Circuits and Signal Processing Journal*, vol. 95, no. 1, pp. 173-179, 2018.
11. M. B. Elamien and S. A. Mahmoud, "An 114 hz to 12 mhz digitally controlled lowpass filter for biomedical and wireless applications," in *IET Circuits, Devices & Systems*, vol. 12, no. 5, pp. 606-614, 2018. DOI: 10.1049/iet-cds.2017.0410
12. M. B. Elamien and S. A. Mahmoud, "A wide digitally tunable low pass filter for biomedical and wireless applications," in *Electronics Letters*, vol. 54, no. 3, pp. 124-126, 2018. DOI: 10.1049/el.2017.2092
13. M. B. Elamien and S. A. Mahmoud, "On the design of highly linear CMOS digitally programmable operational transconductance amplifiers for low and high-frequency applications," in *Analog Integrated Circuits and Signal Processing Journal*, vol. 97, pp. 225-241, 2018.
14. M. B. Elamien and S. A. Mahmoud, "Analysis and design of a highly linear CMOS OTA for portable biomedical applications in 90 nm cmos," in *Microelectronics Journal*, vol. 70, pp. 72-80, 2017.
15. B. J. Maundy, A. S. Elwakil, and M. B. Elamien, "Oscillator with tunable phase capability," in *Electronics Letters*, vol. 53, no. 23, pp. 1516-1518, 2017.
16. M. B. Elamien, A. S. Elwakil, and B. J. Maundy, "Wide range grounded nonlinear transconductor and its application as a frequency doubler," in *International Journal of Electronics Letters*, vol. 6, no. 2, pp. 214-219, 2017. DOI:10.1080/21681724.2017.1335787

Other (including proceedings at meetings)

1. M. B. Elamien, B. J. Maundy, L. Belostotski, and A. S. Elwakil, "A Wideband 24-29 GHz Differential All-pass Filter in 65-nm CMOS," in *The IEEE International Symposium on Circuits and Systems (ISCAS)*, Daegu, South Korea, May 2021.
2. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil "Low-Power Single-Transistor Voltage-Mode Third-Order All-pass Filter in 65-nm CMOS," in *63rd IEEE International Midwest Symposium on Circuits and Systems*, Springfield, MA, USA, August 2020.
3. M. B. Elamien, A. S. Elwakil, B. J. Maundy and L. Belostotski "8-GHz Low-Power Voltage-Mode Second-Order Allpass Filter in 65-nm CMOS," in *26th IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, Genoa, Italy, 2019, pp. 146-149.
4. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil "Single-Transistor Second-Order Allpass Filters," in *62nd IEEE International Midwest Symposium on Circuits and Systems*, Dallas, TX, USA, August 2019.
5. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil "An Ultra-Low Power Wide-Band Single-Transistor Second-Order Allpass Filter in 65nm CMOS," in *62nd IEEE International Midwest Symposium on Circuits and Systems*, Dallas, TX, USA, August 2019.
6. M. B. Elamien, B. J. Maundy, L. Belostotski, A. S. Elwakil and S. A. Mahmoud, "A Wideband Delay-Tunable Fully Differential Allpass Filter in 65-nm CMOS Technology," in *The IEEE International Symposium on Circuits and Systems (ISCAS)*, Sapporo, Japan, May 2019.
7. M. B. Elamien, B. J. Maundy, L. Belostotski and A. S. Elwakil "A 28 GHz Q-Tunable Fully Differential Bandpass Filter in 65-nm CMOS Technology," in *61st IEEE International Midwest Symposium on Circuits and Systems*, Windsor, Canada, August 2018.

8. B. J. Maundy, A. S. Elwakil, M. B. Elamien and A. Al-Hammadi, "Synthesis of a Family of Differential Cross-coupled Oscillators and Design Application," in 61st IEEE International Midwest Symposium on Circuits and Systems, Windsor, Canada, August 2018.
9. M. B. Elamien and S. A. Mahmoud, "A 1 mhz-10.2 mhz bw / 0 db-70 db gain dpota-based baseband chain receiver," in 14th International SoC Design Conference, Seoul, Korea, Sep. 2017.
10. M. B. Elamien and S. A. Mahmoud, "A highly linear dpota-based configurable analog front-end for exg (eeg, ecg, and emg)," in 14th International SoC Design Conference, Korea, Sep. 2017.
11. M. B. Elamien and S. A. Mahmoud, "Third-order elliptic lowpass filter for multi-standard baseband chain using highly linear digitally programmable ota," International Conference on Applied Electronics and Engineering, Kuching, Sarawak, Malaysia, August 2017.
12. M. B. Elamien and S. A. Mahmoud, "Multi-standard lowpass filter for baseband chain using highly linear digitally programmable ota," in 2017 40th International Conference on Telecommunications and Signal Processing (TSP), Barcelona, July 2017, pp. 298-301.
13. M. B. Elamien and S. A. Mahmoud, "A linear cmos balanced output transconductor using double differential pair with source degeneration and adaptive biasing," in IEEE 59th International Midwest Symposium on Circuits and Systems (MWSCAS), Abu Dhabi, October 2016, pp. 1-4.
14. M. B. Elamien and S. A. Mahmoud, "A linear digital programmable cmos balanced output transconductor," in UAE Graduate Students Research Conference (UAE GSRC), Abu Dhabi, UAE, March 2017.
15. M. B. Elamien and S. A. Mahmoud, "138 db-cmrr low power instrumentation amplifier with programmable gain for eeg," in UAE Graduate Students Research Conference (UAE GSRC), Al-Ain, UAE, April 2016.
16. Guseva, Anastasia; Hofmann, Maik; Unger, Alexander; Zulk, Silvia; Elamien, Mohamed; Sarradj, Ennes; Kupnik, Mario, "Ultrasonic transducer characterization in air based on an indirect acoustic radiation pressure measurement," in Ultrasonics Symposium (IUS), 2015 IEEE International, vol., no., pp.1-4, 21-24 October 2015.