Curriculum Vitae (6-page Format)

Nov 2022

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I. ACADEMIC BACKGROUND

Degrees	***Institution***	***Country***	***Month/Year***
Ph.D.	Université de Sherbrooke	Canada	09/1990
M.Sc.A.	Université de Sherbrooke	Canada	12/1986
B.Sc.	Université Laval	Canada	12/1983

II. EMPLOYMENT HISTORY

Position	***Dates***	***Organisation***
Emeritus Professor	06-20/. . .	Electrical Engineering, Polytechnique Montreal
Chair Professor	01-19/. . .	School of Engineering, Westlake University
Professor	06-98/…	Electrical Engineering, Polytechnique Montreal
Director	06-99/19	ReSMiQ interuniversity research center, Quebec
Adjunct Professor	09-11/…	Electrical & Computer Engineering, Laval University
Advisory Professor	09-06/…	School of Microelectronics, Shanghai University
Adjunct Professor	09-17/…	School of Computer Sciences, Wuhan University
Canada Research Chair	04-01/06-15	Electrical Engineering, Polytechnique Montreal
Director	06-96/05-04	Electronic Division, École Polytechnique
Adjunct Professor	11-95/08-98	Electrical Engineering, McGill University
Associate Professor	06-94/05-98	Electrical & Computer Eng., École Polytechnique
Assistant Professor	09-91/05-94	Electrical & Computer Eng., École Polytechnique
Post-Doctoral Fellow	01-91/08-91	Biomedical Engineering, McGill University

III. HONORS AND AWARDS

2022 Fellow of the Royal Society of Sciences of Canada (FRSC)
2022 Chinese Government Friendship Award;
2022 Hangzhou Outstanding Talent Award;

2021 Chinese Zhejiang Weslake Friendship Award
2019 Chinese Hangzhou Qianjiang Friendship Ambassador Award
2019 National High-level Talent Program Award
2018-… Elected Vice-President Publications of the IEEE Circuits and Systems Society;
2016 Recipient of one of the five awards of the Council of the Arab League Ambassadors;
2015 Recipient of the Shanghai City Award for International Collaboration;
2014 Recipient of the Polytechnique Montreal First Research and Innovation Award;
2013 Recipient of the Queen-Elizabeth II Diamond Jubilee Medal;
2013-… Member of the Board of Governers of the IEEE Circuits & Systems Society;
2012 Recipient of the ACFAS - Jacques-Rousseau Award for Multidisciplinarity Research contributions;
2012-… Advisory Professor at Shanghai JiaoTong University, Shanghai, China;
2012 Member of the international selection committee of the biomedical reseacher of the year;
2012 President of the Analog Signal Processing Committee of the IEEE Circuits & Systems Society;
2011-12 Chair of the Distinguished Lecture Program of the IEEE Circuits and Systems Society;
2011-12 Distinguished Lecturer of the IEEE Solid-State Circuits Society;
2010 Recipient of the Desjardins intercultural office achievement Award;
2008 Elected Officer of the National Order of Quebec for outstanding contributions;
2008 Recipient of the Lebanese Embassy in Canada Achievements Award;
2007 Fellow of the Engineering Institute of Canada for contributions to Engineering practices;
2006 Recipient of the American University of Science and Technology Achievements Award;
2006-10 Honorory Professor at Shanghai JiaoTong University, China;
2005 Recipient of the J. A. Bombardier Award for Research innovation and technology transfer;
2005 Medal of Honor from the President of Lebanon for outstanding achievements;
2005-07 Elected President of the BiOCAS technical committee of the IEEE Circuits & Systems Society;
2004 Recipient of the Montreal Lebanese Islamic Center's Award for career achievement;
2004 Fellow of the IEEE for my contributions to implantable medical devices;
2004-06 Elected Distinguished Lecturer of the IEEE Circuits & Systems Society;
2004-… Invited Professor at Université de Metz, France;
2003 Recipient of the Barbara Turnbull Award from the Canadian Institutes of Health Research (CIHR);
2003 Scientific Achievement Award from the American Biographical Institute;
2002 Recipient of the Canadian Islamic Congress's Award for career achievements;
2001-03 Founder and President of Cortivision, a startup company;
2001 Fellow of the Canadian Academy of Engineering;
2001 One of my projects is among the top ten discoveries of the Year by Québec Science Magazine;
2000-… Awarded Canada Research Chair in Smart Medical Devices;
1999 Invited Professor at Université de Sfax, Tunisia.

IV. OTHER AWARDS

2020 Best Springer Scientific Reports' journal paper award by Canadian Epilepsy League
2019 First place demonstration award from IEEE Sensors competition
2014 Co-recipient of the 1st best paper award from IEEE-SBCCI 2014;
2014 Co-recipient of the 1st place award from MDETEQ State competition;
2013 Co-recipient of the best ReSMiQ Innovation Day Award;
2012 Co-recipient of the best poster presentation at the 11th MIOMD Conference;
2010 Co-recipient of the best Texpo project award from CMC Microsystems annual workshop;
2010 Co-recipient of the best student science and society award from ACFAS 2010;
2010 Co-recipient of the best poster presentation award from ReSMiQ-ACFAS 2010;
2009 Co-recipient of the 2009 Excellence In Technology Award from the Society for Technology in Anesthesia. A Robot Prototype for Intranenous Catheter Placement;
2008 Co-recipient of the Best IEEE Solid-State Society Chapter of the year;
2008 Co-recipient of the 1st best paper award from IEEE NEWCAS 2008;
2008 Co-recipient of the 3rd best paper award from IEEE NEWCAS 2008;

2006 Nominated one of best Electrical Engineering Professors of the year at Ecole Polytechnique;
2004 Co-recipient of Myril B. Reed Best Paper Award of the 46th IEEE-MWSCAS.
1997 Award for academic excellence awarded by École Polytechnique de Montréal;
1989 Medal of Merit for academic excellence by the Université de Sherbrooke during my Ph.D. studies.

V. OTHER DISTINCTIONS AND ACHIEVEMENTS

2020 General Chair of the IEEE Engineering, Medicine and Biology Society Conference;
2018 General Chair of the IEEE International Life Sciences Conference;
2018-19 General Co-Chair of the IEEE-International AICAS, and ISOCC;
2016 General Chair of the IEEE International Symposium on Circuits and Systems;
2015-... Editor-in-chief of the IEEE Transactions on Biomedical Circuits and Systems Journal;
2015-… General Co-Chair of the IEEE-International SBB;
2013-... Associate Editor of the IEEE Transactions on Biomedical Engineering Journal;
2013-… Chair of the IEEE Biomedical Engineering Award committee;
2012-… General co-Chair of the annual IEEE NEWCAS Conference;
2012-… General co-Chair of the annual IEEE Int'l Conf. on Microlectronics;
2011-… Editorial Board, the IEEE Life Sciences Portal;
2011-… General Chair of the IEEE Int'l Conf. on Electronics, Circuits and Systems;
2011-… General co-Chair of the IEEE Int'l Conf. on Microlectronics;
2011-12 Guest Editor of the IEEE J. of Emerging and Selected Topics SI on Brain-Machine Interfaces;
2011 Member of the Quebec's technology mission to India;
2011 General Chair of the Brain-Computer Interface Workshop (CAS-FEST 2010);
2011 General Co-Chair of the ACFAS-ReSMiQ's Workshop;
2010 Member of the Quebec's technology mission to China;
2010-… Advisory Board, Int'l Symposium on Medical Information and Communication Technology;
2010-13 Deputy Editor-in-Chief of the IEEE Transactions on Circuits and Systems II (TCAS-II);
2010-… Advisor for Springer Publisher in the field of Analog and biomedical books;
2010-… General Chair of the ACFAS-ReSMiQ's Workshop;
2009-… Technical Program Co-Chair of the Int. Biomedical Circuits and Systems (BiOCAS2009);
2009-… Member of the International Editorial Board of the Journal of Healthcare Engineering;
2009 Elected Toronto, Madison and Stanford Who's Who;
2008-… Member of the Editorial Board of the International Journal of Circuit Theory and Applications;
2008-… Member of the NSERC scholarship committee;
2008 Member of the Quebec technology mission to Taiwan;
2007 Member of FRSQ-FQRNT new joint support for R&D medical technology committee;
2007-… Member of the Steering Committee of the IEEE Trans. on Biomedical Circuits and Systems Journal;
2007-14 Associate Editor of the IEEE Transactions on Biomedical Circuits and Systems Journal;
2007 Member of Canada Bio & nanotechnology mission to India;
2007-… Member of the International Advisory Board of the Emirates Journal of Engineering Research (EJER);
2007-… General Chair of the Int. Biomedical Circuits and Systems (BiOCAS2007);
2007-… General Chair of the Int. Midwest Symposium on Circuits and Systems (MWSCAS2007);
2007 Member of the scientific committee of Marseille IMNP institute;
2006-… Member of Prompt Scientific Coordination Committee;
2006 Technical program co-Chair of the Int. Midwest Symposium on CAS (MWSCAS2006);
2006-… General Chair of the IEEE International NEWCAS conference
2006 General Co-Chair of the IEEE Int. Conf. On Electronics, Circuits and Systems (ICECS2006);
2006 Co-Chair of the IEEE Int. Computer Architecture for Machine Perception and Sensors (CAMPS2006);
2005 Member of the Quebec technology mission to China.
2005-07 Member of the International Biotechnology council, IEEE CAS representative;
2005 General Chair of the Int. Functional Electrical Stimulation Society Conference (IFESS2005);
2004-07 Member of the Evaluation Committee of the Institut National de Recherche Scientifique;
2004 Editor of the Springer Mixed-signal letters for the Americas;

2004-… Member of the Editorial Board of the Journal of Applied Sciences;
2004-… Guest Editor of the Kluwer Analog integrated Circuits and Signal Processing Journal;
2004-… Member of the Canadian Arthritis Network (Canadian Network of Centre of Excellence);
2003-… Member of the Board of Directors of Montreal rehabilitation interdisciplinary research ctr. (CRIR);
2003-… Member/Chair of IEEE Technical Program Committee (ISCAS, MWSCAS, ICM, ICSICT, etc);
2003-… Investigator of a $21M Pan-Canadian grant application from CFI to acquire an EDA Laboratory;
2003-05 Vice-President of the BiOCAS technical committee of IEEE Circuits & Systems Society;
2002-… Founder & general chair of the IEEE International NEWCAS Conference;
2002-06 Member of the Board of Directors of the Int. Functional Electrical Stimulation Society (IFESS);
2001-… Member of the scientific coordination committee of Victhom Human Bionic;
2001-05 Member of the scientific coordination committee of Prompt-Quebec;
2001-… Guest Editor of the Kluwer/Springer Analog integrated Circuits and Signal Processing Journal;
2000-… Interviews with news media: newspapers, magazines, TV, and radio (prestigious TV reports);
2000 Recipient of a major CFI grant ($8.2M) to establish an advanced microelectronics assembly facility;
1999-… Founder and Chair of the IEEE Solid-State Circuits Society (SSCS) Montreal Chapter;
1999-... Scientific Advisor to several Canadian companies (Victhom Human Bionic, Scanview, etc);
1988-90 Ph.D. scholarship (12k$/year), FRSQ (Fonds de la Recherche en Santé du Québec).
1995-… Co-Founder of the IEEE Int. Conf. on Electronics, Circuits and Systems (ICECS);
1994-… Founder and director of the Polystim Neurotechnologies Laboratory;
1991-... General Chair / Co-Chair of IEEE Int. Conferences (ICECS, ICM, NewCAS, etc.).

VI. SUMMARY OF RESEARCH CONTRIBUTIONS

Citations: 13500, H-Index: 54 (Nov 2022)

Publications (Summary)	**Last 6 years**	**Total**
Refereed **Journal publications** (published/accepted)	125	**315**
Refereed **conference papers**	101	**575**
Invited talks / **Keynote** speeches	111	**326**
Patents (Awarded and Pending)	17	**42**
Books and book chapters	9	**24**
Refereed abstracts and posters	25	**115**
Technical reports count and list are not included in this CV	125	**315**
Total (Publications)	**388**	**1397**

Students and Other Personal Supervision (Appendix D)	**Supervised**	**Completed**
Ph.D.	21	**58**
M.A.Sc.+M.Eng.	1	**131**
Postdoctoral Fellows, Research assistants and associates, Hosted faculties	20	**93**
Hosted Invited Faculties	0	**10**
Undergraduate training R&D projects	0	**349**
Total (Students and Other Personal)	**42**	**641**

Note 1: Samples of recently published papers (see next 2 pages please)

LIST OF RECENT PUBLICATIONS (Jan 2022)

(Refereed Journal Publications: Published and Accepted)

[315] ZHENG W., CHEN Y., **SAWAN M.**, "Longitudinal Data to Enhance Dynamic Stroke Risk Prediction", ***MDPI Healthcare Journal*, 2022**.

[314] RONG G., ZHENG Y., XI, Y., BAO K., XIA F., REN H., BIAN S., LI L., Zhu B., **SAWAN M.**, "A Closed-loop Approach to Fight Coronavirus: Early Detection and Subsequent Treatment", ***MDPI Biosensors Journal*, 2022**.

[313] RONG G., ZHENG Y., LI, X., GUO M., SU Y., BIAN S., DANG B., CHEN Y., ZHANG Y., SHEN L., JIN H., YAN R., ZHU P., WEN L., **SAWAN M.**, "A High-throughput Fully Automatic biosensing platform for efficient COVID-19 detection", ***Elsevier Biosensors and Bioelectronics Journal***, **2022**.

[312] ELSAYEGH B., ALI M., ASSAF H., **SAWAN M.,** DUMOULIN C., "Portable Dynamometer-Based Measurement of Pelvic Floor Muscle Force", Accepted in ***IEEE Journal of Translational Engineering in Health & Medicine***, **2022**.

[311] LI H., TROCAN M., **SAWAN M.,** GALAYKO D., "Serial Decoders-Based Autoencoders for Image Reconstruction", ***Applied Sciences Journal***, Vol.12, No. 16, **2022,** 8256.

[310] KARIMI M., ALI M., HASSAN A., AGHAJANI A., **SAWAN M.**, GOSSELIN B., "A 9.2-ns to 1-us Digitally Controlled Multi-tuned Deadtime Optimization for Efficient GaN HEMT Power Converters", ***IEEE-TCAS-I,*** Vol. 69, No. 11, **2022**, pp. 4381-4394.

[309] WANG J., CHEN Y., YANG J., **SAWAN M.**, "Intelligent Classification Technique of Hand Motor Imagery Using EEG Beta Rebound Follow-up Pattern", ***MDPI,*** Biosensors, Vol. 12, No. 6, 2022， 384.

[308] AZIZIPOUR N., AVAZPOUR R., **SAWAN M.**, ROSENZWEIG D.H., AJJI A., "Uniformity of spheroids-on-a-chip by surface treatment of PDMS microfluidic platforms", ***Sensors & Diagnostics Journal,*** Vol. 1, ***2022***, pp.750-764**.**

[307] SUN S., YANG J., CHEN Y., MIAO J., **SAWAN M.**, "EEG Signals based Internet Addiction Diagnosis Using Convolutional Neural Networks", ***MDPI, Applied Sciences,*** Vol. 12, No. 13, **2022**, 6297.

[306] WU D., YANG J., **SAWAN M.**, "Bridging the Gap Between Patient-Specific and Patient-Independent Seizure Prediction Via Knowledge Distillation", ***J. Neural Eng.*** Vol. 19, No. 3, **2022**.

[305] TAO Y., BIAN S., WANG P., ZHANG H., BI W., ZHU P., **SAWAN M.**, "Rapid Optical Biosensing of SARS-CoV-2 Spike Proteins in Artificial Samples", ***MDPI Sensors***, Vol. 22, No. 10, **2022**, 3768.

[304] XU Y., YANG J., **SAWAN M.**, "Multichannel Synthetic Preictal EEG Signals to Enhance the Prediction of Epileptic Seizures", ***IEEE Transactions on Biomedical Engineering***, Online, **2022**, 3171982.

[303] WANG C., YANG J., **SAWAN M.**, "NeuroSEE: A Neuromorphic Energy Efficient Processing Framework for Visual Prostheses", ***IEEE Journal of Biomedical and Health Informatics***, *and Featured cover page,* Vol. 26, No. 8, **2022**, pp. 4132-4141.

[302] AZIZIPOUR N., AVAZPOUR R., **SAWAN M.,** AJJI A., ROSENZWEIG D.H., "Surface optimization and design adaptation toward spheroid formation on-chip", ***MDPI, Sensors***, Vol.22, No. 9, **2022**. 3191.

[301] CHEN J., WU H., TARKHAN M., HASHEMI-NOSHAHR F., YANG J., **SAWAN M.**, "Recent Trends and Future Prospects of Neural Recording Circuits and Systems: A Tutorial Brief", ***IEEE Transactions on Circuits and Systems***: ***Express Briefs***, Vol. 69, No. 6, **2022**, pp. 2654-2660.

[300] ZHAO S. FANG C., YANG J., **SAWAN M.**, "Emerging Energy-Efficient Biosignal-Dedicate Circuit Techniques: A Tutorial Brief", ***IEEE Transactions on Circuits and Systems***: ***Express Briefs***, Vol. 69, No. 6, **2022**, pp. 2592-2597.

[299] TARKHAN M., **SAWAN M.**, "A Novel Current Density based Design Approach of Low-Noise Amplifiers", ***IEEE Access Journal***, Vol. 10, **2022**, pp. 42309-42320.

[298] AZIZIPOUR N., AVAZPOUR R., WEBER M., **SAWAN M.**, AJJI A., ROSENZWEIG D., "Uniform tumor spheroids on surface optimized microfluidic biochip for reproducible drug screening and personalized medicine", ***MDPI, Micromachines Journal***, Vol.13, No. 4, **2022**, 587.

[297] DANG B., LI M., GUO L., YUAN S., YE Z., TANG K., BI W., RONG R., **SAWAN M.**, SUN R., YIN X., ZHANG Y., TANG Y.,"Enhanced Trimeric ACE2 Exhibits Potent Prophylactic and Therapeutic Efficacy against the SARS-CoV-2 Delta and Omicron Variants In Vivo", ***Cell research***, Vol. 32, No. 6, **2022**, pp. 589-592.

[296] ZHENG Y., BIAN S., RONG G., **SAWAN M.,** "Label-free LSPR-Vertical Microcavity Biosensor for On-site SARS-CoV-2 Detection", ***MDPI Biosensors,*** Vol. 12, No. 3, **2022**, 151.

[295] ALI M., HASSAN A., NABAVI M., AUDET Y., **SAWAN, M.**, SAVARIA, Y., "A Versatile SoC/SiP Sensor Interface for Industrial Applications: Implementation Challenges", ***IEEE Access***, Vol. 10, **2022**, pp. 24540-24555.

[294] ZHANG H., RONG G., BIAN S., **SAWAN M.,** "Lab-on-Chip Microsystems for *Ex Vivo* Network of Neurons Studies: A Review", ***Front. Bioeng. Biotechnol.,*** Vol.16, No. 10, **2022**, 841389.

[293] MIRFAKHRAEI S., AUDET Y., HASSAN A., **SAWAN M.,** "A Fully Integrated Low-Power Hall-based Isolation Amplifier with IMR Greater than 120 dB", ***IEEE TCAS-I***, Vol 69, No. 4, April **2022**, pp. 1385-1394.

[292] HASSAN A., NOEL J.-P., SAVARIA Y., **SAWAN M.,** "Circuit Techniques in GaN technology for High-Temperature Environments", ***MDPI Electronics***, Vol. 11, No. 1, **2022**, 42.

[291] HAMMOUD A., ASSAF H., SAVARIA Y., NGUYEN DK, **SAWAN M.,** "A Molecular Imprinted PEDOT CMOS Chip-based Biosensor for Carbamazepine Detection", ***IEEE Transactions on Biomedical Circuits and Systems***, Vol. 16, No. 1, **2022**, pp. 15-23.

[290] CHAMPAGNE P.O., SANON N., CARMANT L., NGUYEN D.K., DESCHENES S., POULIOT P., BOUTHILLIER A., **SAWAN M.,** "Superparamagnetic Iron Oxide Nanoparticles-Based Detection of Neuronal Activity", ***Nanomedicine Journal***, Vol. 40, **2022**, pp. 102478.

[289] SU Y., LI N., WANG L., RONG G., LIN R., ZHENG Y., **SAWAN M.,** "Stretchable transparent supercapacitors for wearable and implantable medical devices", ***Advanced Materials Technologies Journal,*** John Wiley & Sons, *and Featured page,* Vol. 07, No. 1, **2022**, 2100608.

[288] BIAN S., SHANG M., **SAWAN M.,** "Rapid biosensing SARS-CoV-2 antibodies in vaccinated healthy donors", ***Elsevier, Biosensors and Bioelectronics***, Vol. 204, May **2022**, 11405.

[287] ZHAO S., YANG J., **SAWAN M.,** "Energy-Efficient Neural Network for Epileptic Seizure Prediction", ***IEEE Trans. on Biomedical Engineering,*** Vol. 69, No. 1, **2022**, pp. 401-411.

[286] MIRFAKHRAEI S., AUDET Y., HASSAN A., **SAWAN M.,** "A Small Footprint Digital Isolator based on CMOS Integrated Hall-effect Sensor", ***IEEE Sensors***, Vol. 22, No. 1, **2022**, pp. 412-418.

[285] NOGHABAEI, M., RADIN, R., SAVARIA Y., **SAWAN M.,** "A High-Sensitivity Wide Input-Power-Range Ultra-Low-Power RF Energy Harvester for IoT Applications", ***IEEE TCAS-I***, *and Featured page*, Vol. 69, No. 1, **2022**, pp. 440-451.

[284] KARIMI M., ALI M., HASSAN A., **SAWAN M.,** GOSSELIN B., "An Active Dead-Time Control Circuit with Timing Elements for a 45-V Input 1-MHz Half Bridge Converter", ***IEEE-TCAS-I*** *(from ISICAS21),* Vol. 69, No. 1, Sept. **2022**, pp. 30-41.

[283] BIAN S., TAO Y., ZHU Z., ZHU P., WANG Q., WU H., **SAWAN M.,** "On-site biolayer interferometry-based biosensing of carbamazepine in whole blood of epileptic patients", ***MDPI Biosensors***, Vol.11, no.12, **2021**, pp. 516.

[282] WANG Z., YANG J., **SAWAN M.,** "A Power Efficient Refined Seizure Prediction Algorithm Based on an Enhanced Benchmarking", ***Nature Scientific Reports, Springer***, Vol. 11, **2021**, 23498.

[281] **SAWAN M**., YANG J., TARKHAN M., CHEN J., WANG M., WANG Ch., XIA F., CHEN Y., "Emerging Trends of Biomedical Circuits and Systems", ***Foundations and Trends in Integrated Circuits and Systems***: Vol. 1: No. 4, **2021**, pp. 217-411.

[280] WOLF D., DESGENT S., SANON N., CHEN JS., ELKAIM M., BOSOI CM., AWAD P., SIMARD A., SALAM MT., BILODEAU GA., DUSS S., **SAWAN M**., LEWIS EC., WEIL AG., "Sex differences in the developing brain impact stress-induced epileptogenicity following hyperthermia-induced seizures", ***Elsevier-Neurobiology of Disease***, Vol. 161, **2021**, 105546.

[279] GAGLIANO, L., BOU ASSI, E., **SAWAN, M**., NGUYEN, D.K., "Epileptic Prodromes: Insights from Surveying 196 Patients and 150 Caregivers", ***The Canadian Journal of Neurological Sciences***, Vol. 1, **2021**, pp.1-27.

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