

Curriculum Vitae (6-page Format)

May 2021

	English	/	Mandarin
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I. ACADEMIC BACKGROUND

<i>Degrees</i>	<i>Institution</i>	<i>Country</i>	<i>Month/Year</i>
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

<i>Position</i>	<i>Dates</i>	<i>Organisation</i>
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

2021	Kunpeng Plan Expert Award;
2021	Chinese Zhejiang Westlake 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;
HONORS AND AWARDS (Cont'd)
2013 Recipient of the Queen-Elizabeth II Diamond Jubilee Medal;
2013-... Member of the Board of Governors 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 researcher 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 Honorary 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 Intravenous 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;

OTHER DISTINCTIONS AND ACHIEVEMENTS (Cont'd)

- 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 Microelectronics;
- 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 Microelectronics;
- 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 (CAMPSS2006);
- 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;

OTHER DISTINCTIONS AND ACHIEVEMENTS (Cont'd)

- 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: 11000, H-Index: 48 (May 2021)

Publications (Summary)	Last 6 years	Total
Refereed Journal publications (published/accepted)	105	275
Books and book chapters	7	17
Patents (Awarded and Pending)	6	21
Invited talks / Keynote speeches	95	297
Refereed conference papers	93	552
Refereed abstracts and posters	26	114
Technical reports	2	13
Total (Publications)	334	1289

Students and Other Personal Supervision (Appendix D)	Supervised	Completed
Ph.D.	22	50
M.A.Sc.+M.Eng.	3	129
Postdoctoral Fellows, Research assistants and associates, Hosted faculties	6	76
Hosted Invited Faculties	0	10
Undergraduate training R&D projects	5	347
Total (Students and Other Personal)	36	612

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

LIST OF RECENT PUBLICATIONS (Jan 2021)
(Refereed Journal Publications: Published and Accepted)

- [275] RONG G., ZHENG Y., **SAWAN M.**, “Energy Solutions for Wearable Sensors: A Review”, To appear, *MDPI Sensors*, Vol. 21, Art. 3806, **2021**.
- [274] AKBARI M., HONARPARVAR M., SAVARIA Y., **SAWAN M.**, “Power Bound Analysis of a Two-Step MASH Incremental ADC Based on Noise-Shaping SAR ADCs”, To appear, *IEEE-TCAS-I*, **2021**.
- [273] ALI M., ELSAYED A., S., MENDEZ A., SAVARIA, Y., **SAWAN, M.**, "Contact and Remote Breathing Rate Monitoring Techniques: A Review", To appear in *IEEE Sensors*, **2021**.
- [272] XIA F., **SAWAN M.**, “Clinical and Research Solutions to Manage Obstructive Sleep Apnea: A Review”, To appear in *MDPI Sensors*, **2021**.
- [271] XU Y., YANG J., **SAWAN M.**, “Trends and Challenges of Processing Measurements from Wearable Devices Intended for Epileptic Seizure Prediction”, To appear in *MDPI Sensors*, **2021**
- [270] CHAMPAGNE P.O., SANON N., CARMANT L., POULIOT P., BOUTHILLIER A., **SAWAN M.**, “Feasibility of implantable iron oxide nanoparticles in detecting brain activity- proof of concept in a rat model”, To appear in *Epilepsy Research*, Feb **2021**.
- [269] MIRBOZORGI A., MAGHSOUDLOO E., BAHRAMI H., **SAWAN M.**, GOSSELIN B., “Multi-Resonator Arrays for Smart Wireless Power Distribution: Comparison with Experimental Assessment”, To appear in *IET power electronics*, **2021**.
- [268] MIRFAKHRAEI S., AUDET Y., HASSAN A., ALI M., **SAWAN M.**, “A Galvanic Isolated Amplifier based on CMOS Integrated Hall-effect Sensors”, *IEEE Transactions on Circuits and Systems I*, Vol. 68, No. 4, April **2021**, pp. 1388-1397.
- [267] HAMMOUD A., NGUYEN DK, **SAWAN M.**, “The development of molecular imprinted PEDOT glassy carbon electrode for Carbamazepine detection”, To appear in *Elsevier Bioelectronics and Biosensors*, **2021**.
- [266] BIAN S., RONG G., **SAWAN M.**, “Continuous Drug Monitoring: A Future Tool for Individualised Therapy”, To appear in *Journal of Pharmaceutical Analysis*, **2021**.
- [265] CHEN Y., **SAWAN M.**, “Trends and Challenges of Wearable Multimodal Technologies for Stroke Risk Prediction”, *MDPI Sensors*, Vol. 21, No. 2, Jan **2021**, pp. 460.
- [264] ROSTAMI M.-S., NEJAD M.-M., **SAWAN M.**, “A Low-Power Time-to-Digital Converter for Sensor Interface Circuits” *IEEE Transactions on Circuits and Systems II*, Vol. 67, No.12, Dec **2020**, pp. 2853-2857.
- [263] YANG, J., **SAWAN M.**, “Towards Smart and Fully Embedded Seizure Prediction Engine: A Review”, *IEEE Transactions on Biomedical Circuits and Systems (TBioCAS)*, Vol. 14, No. 5, **2020**, pp. 1932-4545.
- [262] NAJARPOUR-FAROUSHANI, A., NEUPANE, S., DE HEREDIA PASTOR, P., PACK, C., **SAWAN, M.**, "Spatial resolution of local field potential signals in macaque V4", *IOP Science, Journal of Neural Engineering*, Vol. 17, No. 2., **2020**, 026003.
- [261] TRIGUI A., ALI M., HACHED S., DAVID J.-P., AMMARI, A., SAVARIA, Y., **SAWAN, M.**, "Generic Wireless Power Transfer and Data Communication System Based on a Novel Modulation Technique", *IEEE Transactions on Circuits and Systems I*, Vol. 67, No. 11, Nov **2020**, pp. 3978-3990.
- [260] SU Y., BIAN S., **SAWAN M.**, “Real-time *In Vivo* Detection Techniques for Neurotransmitters: A Review”, *Analyst Journal*, No. 145, **2020**, pp. 6193 - 6210.
- [259] HASSAN A., AMER M., SAVARIA Y., **SAWAN M.**, “Fully Integrated Digital GaN-based LSK Demodulator for High-Temperature Applications”, *IEEE Transactions on Circuits and Systems II: Express Briefs (TCAS II)*, Vol. 67, No. 9, Sept. **2020**, pp. 1549-1583.
- [258] HONARPARVAR M., DE LA ROSA J., **SAWAN M.**, “A 10-MHz BW 77:3-dB SNDR 640-MS/s GRO-based CT MASH SD Modulator”, *IEEE TCAS-II*, Vol. 67, No. 9, Sept. **2020**, pp. 1519-1523.

- [257] AZIZIPOUR N., AVAZPOUR R., ROSENZWEIG D., **SAWAN M.***, AJJI A.* (2 co-supervisors, equal contributions), "Evolution of biochip technology: A review from lab-on-a-chip to organ-on-a-chip", **Micromachines, Section B: Biology and Biomedicine Journal**, Vol.11, No. 6, **2020**, pp. 599.
- [256] HONARPARVAR M., DE LA ROSA J., **SAWAN M.**, "A 7.5-mV-Input Boost Converter for Thermal Energy Harvesting With 11-mV Self-Startup", **IEEE TCAS-II**, Vol. 67, No. 8, Aug. **2020**, pp. 1379-1383.
- [255] SAHA S., LESAGE F., **SAWAN M.**, "Compact Optical Probe for Time-resolved NIRS- Imaging", **IEEE Sensors Journal**, Vol. 20, No. 11, June **2020**, pp. 6101-6113.
- [254] JAVANBAKHT, T., GHANE-MOTLAGH, B., **SAWAN M.**, "Comparative Study of Antibiofilm Activity and Physicochemical Properties of Microelectrode Arrays", **Microelectronic Engineering**, Vol. 229, May **2020**.
- [253] RONG, G., MENDEZ, A., BOU ASSI, E., ZHAO, B., **SAWAN, M.**, "Artificial Intelligence in Healthcare: Review and Prediction Case Studies", **Elsevier, Engineering**, Vol. 6, No. 3, Mar. **2020**, pp. 291-301.
- [252] HASHEMI-NOSHAHR F., NABAVI M., **SAWAN M.**, " Multi-Channel Neural Recording Implants: A Review", **Sensors** Vol. 20, No. 3, Feb. **2020**, pp. 904.
- [251] TANTIN, A., BOU ASSI, E., VAN ASSELT, E., HACHED, S., **SAWAN, M.**, "Predicting Urinary Bladder Voiding by means of a Linear Discriminant Analysis: Validation in Rats", **Elsevier Biomedical Signal Processing and Control**, Vol 55, Jan. **2020**, pp. 1016-1067.
- [250] MONTAZERI, L., ELZARIF, N., TRENHOLM, S., **SAWAN, M.**, "Optogenetic Stimulation for Restoring Vision to Patients Suffering from Retinal Degenerative Diseases: Current Strategies and Future Directions", **IEEE Transactions on Biomedical Circuits and Systems**, Vol. 13, No. 6, Dec. **2019**, pp.1792-1807.
- [249] SAHA, S., **SAWAN, M.**, LESAGE, F., "Wearable SiPM-based NIRS Interface Integrated with Pulsed Laser Source", **IEEE Transactions on Biomedical Circuits and Systems**, Vol. 13, No. 6, Dec. **2019**, pp.1313-1323.
- [248] TRIGUI A., SAVARIA, Y., AMMARI, A., **SAWAN, M.**, "Energy Efficient Generic Demodulator for High Data Transmission Rate Over an Inductive Link for Implantable Devices", **IEEE Access**, Vol. 7, No. 1, Dec **2019**, pp. 159379-159389.
- [247] GAGLIANO, L., BOU ASSI, E., NGUYEN, D.K., **SAWAN, M.**, "Bispectrum and Recurrent Neural Networks: Improved Classification of Interictal and Preictal States", **Scientific Reports, Springer Nature**, Vol. 9, No. 15649, **2019**.
- [246] CHEBLI, R., ALI, M., **SAWAN, M.**, "High-CMRR Low-Noise Fully Integrated Front-End for EEG Acquisition Systems", **Electronics**, Vol. 8, No. 10, Oct. **2019**, pp. 1157-1171.
- [245] RADIN R.L., **SAWAN M.**, GALUP-MONTORO C., SCHNEIDER M.C., "A 7.5 mV-Input Boost Converter for Thermal Energy Harvesting with 11 mV Self-Startup", **IEEE Trans. on Circuits and Systems II: Express Briefs**, Vol. 67, No. 8, **2019**, pp. 1379-1383.
- [244] HAMMOUD A., NGUYEN DK, **SAWAN M.**, "Detection Methods and Tools of Administered Anti-Epileptic Drugs – A Review", **Biosensors and Bioelectronics OA**, Online, Feb. **2019**.
- [243] HASSAN A., AMER M., SAVARIA Y., **SAWAN M.**, "GaN-based LSK Demodulator for Wireless Data Receivers in High-Temperature Applications", **Microelectronics Journal**, Vol. 84, Feb. **2019**, pp. 129-135.
- [242] BENAYED H., ALI M., SAHA S., MASMOUDI M., **SAWAN M.**, "Toward a Prototype of an Optoelectronic-based Visual Prosthesis: Control Unit Design and Validation", **Springer ASPIC**, Vol. 98, No. 2, **2019**, pp. 311-320.
- [241] HASSAN, A., ALI, M., TRIGUI, A., SAVARIA, Y., **SAWAN M.**, "A GaN-based Wireless Monitoring System for High-Temperature Applications", **MDPI Sensors J.**, Vol. 19, No. 8, **2019**, pp. 1785
- [240] BENDER-MACHADO, M., NORBERG, F., **SAWAN, M.**, GALUP-MONTORO, C., CHEREM SCHNEIDER, M., "Analysis and Design of the Dickson Charge Pump for sub-50 mV Energy Harvesting," **Microelectronics Journal**, Vol. 90, **2019**, pp. 253-259.
- [239] BOU ASSI, E., RIHANA, S., NGUYEN D.K., **SAWAN, M.**, "Effective Connectivity Analysis of EEG and Accurate Localisation of the Epileptogenic Focus at the Onset of Operculo-Insular Seizures", **Epilepsy Research Journal**, Vol. 152, **2019**, pp. 42-51.

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