Curriculum Vitae

(Brief)

January 2020

	English / Mandarin	
SAWAN	Last Name/姓	**萨旺**
Mohamad	First Name/名	**默罕默德**
Canadian; Lebanese	Citizenships/国籍	加拿大；黎巴嫩
Married	Status/婚姻状态	已婚
English, French, Arabic & Mandarin	Languages/语言	英语，法语，阿拉伯语，普通话
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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*
Chair Professor	01-19/…	School of Engineering, Westlake University, China
Adjunct Professor	06-20/…	Electrical Engineering, Polytechnique Montreal
Professor	06-98/20	Electrical Engineering, Polytechnique Montreal
Director	06-99/19	ReSMiQ interuniversity research center, Quebec
Adjunct Professor	09-11/…	Electrical & Computer Engineering, Laval University
Advisory Professor	09-06/19	School of Microelectronics, Shanghai 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

2019 Awarded Chinese National Thousand Talent Program;
2019 Awarded Chinese Qianjiang Friendship Ambassador;
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;

HONORS AND AWARDS (Cont'd)

2015 Recipient of the Shanghai City Award for International Collaboration;
2014 Awarded Ambassador of the Palais de congrès de Montréal;
2014 Recipient of the Polytechnique Montreal First Research and Innovation Award;
2013 Recipient of the Queen-Elizabeth II Diamond Jubilee Medal;
2013-16 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 Chair of the international selection committee of the biomedical researcher of the year;
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;
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;
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;
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);
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;

IV. OTHER AWARDS

2019 Co-recipient of the 1st place competition award from the 2019 IEEE-Sensors Conference;
2014 Co-recipient of the 1st best paper award from IEEE-SBCCI 2014;
2014 Co-recipient of the 1st place award from MEDTEQ 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 Award from the Society for Technology in Anesthesia;
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;
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;

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;
2015-19 Editor-in-chief of the IEEE Transactions on Biomedical Circuits and Systems Journal;
2013-... Associate Editor of the IEEE Transactions on Biomedical Engineering Journal;
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;

OTHER DISTINCTIONS AND ACHIEVEMENTS (Continued)

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);
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;
2009-… Member of the International Editorial Board of the Journal of Healthcare Engineering;
2008-… Member of the Editorial Board of the International Journal of Circuit Theory and Applications;
2008 Member of the Quebec technology mission to Taiwan;
2007-14 Associate Editor of the IEEE Transactions on Biomedical Circuits and Systems Journal;
2007 Member of Canada Bio & nanotechnology mission to India;
2007 General Chair of the Int. Biomedical Circuits and Systems (BiOCAS2007);
2007 General Chair of the Int. Midwest Symposium on Circuits and Systems (MWSCAS2007);
2006 General Co-Chair of the IEEE Int. Conf. On Electronics, Circuits and Systems (ICECS2006);
2005 Member of the Quebec technology mission to China.
2005 General Chair of the Int. Functional Electrical Stimulation Society Conference (IFESS2005);
2004 Editor of the Springer Mixed-signal letters for the Americas;
2003-07 Member of the Board of Directors of Montreal rehabilitation interdisciplinary research ctr. (CRIR);
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);
2000-… Interviews with news media: newspapers, magazines, TV, and radio (prestigious TV reports);
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);
1994-… Founder and director of the Polystim Neurotechnologies Laboratory;

VI. SUMMARY OF RESEARCH CONTRIBUTIONS

Citations: 9980, H-Index: 46 (Februray 2020)

Publications (Summary)	**Last 6 years**	**Total**
Refereed Journal publications (published/accepted)	100	253
Books and book chapters	6	16
Patents (Awarded and Pending)	5	16
Invited talks / Keynote speeches	91	276
Refereed conference papers	93	535
Refereed abstracts and posters	25	111
Technical reports	2	13
Total (Publications)	**322**	**1220**

Students and Other Personal Supervision (Appendix D)	**Supervised**	**Completed**
Ph.D.	18	46
M.A.Sc. (108) + M. Eng. (20)	4	128
Postdoctoral Fellows, Research assistants and associates, Hosted faculties	6	86
Internships & supervision of industrial training for undergraduate students	5	157
Undergraduate training R&D projects	0	190
Total (Students and Other Personal)	**39**	**607**

LIST OF REFEREED JOURNAL PUBLICATIONS (SAMPLES)

[1] HASHEMI-NOSHAHR F., NABAVI M., SAWAN M., " Multi-Channel Neural Recording Implants: A Review", In Press in ***MDPI Biomedical Sensors***, Jan. 2020.
[2] SAHA, S., LESAGE, F., SAWAN, M., "Compact Optical Probe for Time-resolved NIRS- Imaging", In Press in ***IEEE Sensors Journal***, Dec. 2019.
[3] 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", Online, ***IEEE Transactions on Circuits and Systems***, Nov. 2019.
[4] SAHA, S., SAWAN, M., LESAGE, F., "Wearable SiPM-based NIRS Interface Integrated with Pulsed Laser Source", In Press in the ***IEEE Transactions on Biomedical Circuits and Systems***, 2019.
[5] GAGLIANO, L., BOU ASSI, E., NGUYEN, D.K., SAWAN, M., "Bispectrum and Recurrent Neural Networks: Improved Classification of Interictal and Preictal States", In Press in ***Springer Scientific Reports***, 2019.
[6] RONG, G., MENDEZ, A., BOU ASSI, E., ZHAO, B., SAWAN, M., "Artificial Intelligence in Healthcare: Review and Prediction Case Studies", In press in ***Elsevier, Engineering,*** 2019.
[7] CHEBLI, R., ALI, M., SAWAN, M., "High-CMRR Low-Noise Fully Integrated Front-End for EEG Acquisition Systems", ***MDPI Electronics***, Oct. 2019, 8, 1157
[8] HAMMOUD A., NGUYEN DK, SAWAN M., "Detection Methods and Tools of Administered Anti-Epileptic Drugs – A Review", ***Biosensors and Bioelectronics OA,*** Online, Feb. 2019.
[9] BOU ASSI, E., GAGLIANO, L., RIHANA, S., NGUYEN D.K., SAWAN, M., "Bispectrum Features and Multilayer Perceptron Classifier to Enhance Seizure Prediction", ***Scientific Reports, Springer Nature***, Vol. 8, 15491, 2018.
[10] 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, February 2019, pp. 311-320
[11] TREMBLAY J., MARTINEZ-MONTES E., VANNASING P., NGUYEN D., SAWAN M., LEPORE F., LASSONDE M., GALLAGHER A., "Comparison of source localization techniques in Diffuse Optical Tomography (DOT) using realistic head model", ***Brain Imaging Methods, Frontiers in Neuroscience***, Vol. 9, No.7, 2018, pp. 2994-3016.
[12] 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.
[13] CHAMPAGNE P.O., BOUTHILLIER A., SAWAN M., "Colloidal Stability of Superparamagnetic Iron Oxide Nanoparticles in the Central Nervous System: A Review", ***Nanomedicine Journal***, Vol. 13, No. 11, 2019, pp. 1385-1400.
[14] NABOVATI, G., GHAFAR-ZADEH, E., LETOURNEAU, E., SAWAN, M., "Smart Cell Culture Monitoring and Drug Test Platform Using CMOS Capacitive Sensor Array", ***IEEE Transactions on Biomedical Engineering***, Vol. 66, No. 4, 2019, pp. 1094-1104.
[15] ZGAREN, M., MORADI, A., TANGUAY, L.F., SAWAN, M., "ISM-band 902-928 MHz FSK Transceiver with Scalable Performance for Medical Devices", ***International Journal of Circuits Theory and Applications***, Vol. 46, no. 12, Dec. 2018, pp. 2266-2282.
[16] SAHA, S., SAWAN, M., LESAGE, F., "Compact Fast Optode based Probe for Single-Photon Counting Applications", ***Photonics Technology Letters***, Vol 30, No. 17, 2018, pp.1515-1518.
[17] BOU ASSI, E., NGUYEN, D.K., RIHANA, S., SAWAN, M., "A Functional-Genetic Scheme for Seizure Forecasting in Canine Epilepsy", ***IEEE Transactions on Biomedical Engineering***, Vol. 65, No. 6, 2018, pp. 1339-1348.
[18] NAJARPOUR-FAROUSHANI, A., PACK, C., SAWAN, M., "Cortical visual prostheses: from microstimulation to functional percept ", ***IOP Science, Journal of Neural Engineering***, Vol. 15, No. 2, 2018.
[19] GAGLIANO, L., BOU ASSI, E., NGUYEN, D.K., RIHANA, S., SAWAN, M., "Bilateral Preictal Signature of Phase-Amplitude Coupling in Canine Epilepsy", ***Epilepsy Research***, Vol. 139, 2018, pp. 123-128.

[20] HASANUZZAMAN, M., MOLTAGH, B., HASSAN, A., MOUNAIM, F., RAUT, R., SAWAN, M., "Toward an Energy-Efficient High-Voltage Compliant Visual Intracortical Multichannel Stimulator***", IEEE Trans. on VLSI***, Vol. 26, No. 5, 2018, pp. 878-891.

[21] KASSAB, A., LELAN, J., TREMBLAY, J., VANNASING, P., DEHBOZORGI, M., POULIOT, P., GALLAGHER, A., LESAGE, F., SAWAN, M., NGUYEN, D., "Multichannel Wearable fNIRS-EEG System for Long-Term Clinical Monitoring", ***Human Brain Mapping,*** Vol. 39, 2018, pp. 7-23.

[22] GHAFAR-ZADEH, E., GHOLAMZADEH, B., PARASTOO, AC., RAVERI, B., MATYNIA, M., SAWAN, M., AWWAD, F., MAGIEROWSKI, S., "Toward spirometry-on-chip: design, implementation and experimental results", ***Microsystem technologies***, Vol. 23, No. 10, 2017, pp. 4591-4598.

[23] BOU ASSI, E., RIHANA, S., SAWAN, M., " EEG Signal Processing for Motor Imagery Brain Computer Interface Applications", ***J. Biomedical Science and Engineering,*** Vol. 10, No.6, 2017, pp. 326-341.

[24] MAGHSOUDLOO, E., REZAEI, M., SAWAN, M., GOSSELIN, M., "A High-Speed and Ultra Low-Power Subthreshold Signal Level Shifter", ***IEEE Transactions on Circuits and Systems-I,*** Vol. 64, No.5, 2017, pp. 1164-1172.

[25] BOU ASSI, E., NGUYEN, D.K., RIHANA, S., SAWAN, M., "Towards Accurate Prediction of Epileptic Seizures: A Review", ***Elsevier Biomedical Signal Processing and Control***, Vol. 34, 2017, pp. 144-157.

[26] NABOVATI, G., GHAFAR-ZADEH, E., LETOURNEAU, E., SAWAN, M., "Towards High Throughput Cell Growth Screening: A New CMOS 8x8 Biosensor Array for Life Science Applications", ***IEEE Transactions on Biomedical Circuits and Systems,*** Vol. 11, No. 2, 2017, pp. 380-391.

[27] GHANE-MOLTAGH, B., CHOUEIB, M., HAJHOSSEINI, AM., HASSANUZZAMAN, M., SAWAN, M., "Direct Growth of Carbon Nanotubes on New High-Density 3D Pyramid-Shaped Microelectrode Arrays for Brain-Machine Interfaces", ***MDPI, Micromachines,*** Vol. 7, No. 163, 2016, pp. 642-650.

[28] MIRBOZORGI, A., BAHRAMI, H., SAWAN, M., GOSSELIN, B., "A Single-Chip Full-Duplex High-Speed Transceiver for Multi-Site Stimulating and Recording Neural Implants", ***IEEE Trans. on Biomedical Circuits and Systems,*** Vol. 10, No. 3, 2016, pp. 643-653.

[29] WATSON, M., SAWAN, M., DANCAUSE N., "The duration of Motor Responses Evoked with Intracortical Microstimulation in Rats is Primarily Modulated by Stimulus Amplitude and Train Duration", ***PLOS One***, Vol. 11, No. 7, 2016.

[30] GHANE-MOLTAGH, B., JAVANBAKHT, T., SHOGHI, F., WILKINSON, K., MARTEL, R., SAWAN, M., "Physicochemical properties of peptide-coated microelectrode arrays and their in vitro effects on Neuroblast cells", ***Elsevier Materials Science and Engineering C,*** Vol. 68, Nov 2016, pp. 642-650.

[31] MAGHAMI, M.H., SODAGAR, A., SAWAN, M., "Versatile Stimulation Back-End with Programmable Exponential Current Pulse Shapes for a Retinal Visual Prosthesis", ***IEEE Trans. on Neural Signals and Rehabilitation Engineering,*** Vol. 21, No. 11, 2016, pp.1243-1253.

[32] MASSICOTTE, G., CARRARA, S., DI MICHELI, G., SAWAN, M., "A CMOS Amperometric System for Multi-Neurotransmitter Detection", ***IEEE Trans. on Biomedical Circuits and Systems,*** Vol. 10, No. 3, 2016, pp. 731-741.

[33] MIRBOZORGI, A., BAHRAMI, H., SAWAN, M., GOSSELIN, B., "A Smart Cage with Uniform Wireless Power Distribution in 3D for Enabling Long-Term Experiments with Freely Moving Animal", Under revision for the ***IEEE Trans. on Biomedical Circuits and Systems,*** Vol. 10, No. 2, 2016, pp. 424–434.

[34] FARTOUMI, S., EMERIAUD, G., SAWAN, M., "Computerized Decision Support System for Traumatic Brain Injury Management", ***Journal of Pediatric Intensive Care***, Vol. 2, No. 1, 2016, pp.1-40.

[35] WATSON, M., DANCAUSE N., SAWAN, M., "Intracortical Microstimulation Parameters Dictate the Amplitude and Latency of Evoked Responses", ***Brain Stimulation***, Vol. 9, No. 2, Nov. 2015, pp. 276-284.

[36] ZHENG, Y., SHANG, N., HADDAD, P., SAWAN, M., "A Microsystem for Magnetic Immunoassay Based on Planar Microcoil Array", ***IEEE Trans. on Biomedical Circuits and Systems,*** Vol. 10, No. 2, April 2015, pp. 477-486.

[37] SEMMAOUI, H., LI N., HOSSEINI-KHAYAT, S., MARTINEZ-TRUJILLO, J.C., SAWAN, M., "An Adaptive Recovery Method in Compressed Sensing of Extracellular Neural Recording", ***Journal of Neurology and Neuroscience,*** Vol. 6, No. 2, 2015, pp. 19-31.