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Date Submitted: 2020-10-21 09:12:45

Confirmation Number: 1220710

Template: NSERC_Researcher

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Professor Benoit Gosselin

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes
French	Yes	Yes	Yes	Yes	Yes

Degrees

- 2010/12 Post-doctorate, Biomedical technology, Georgia Institute of Technology
Supervisors: Maysam Ghovanloo, 2010/1 - 2010/12
- 2009/8 Doctorate, Microelectronics, École Polytechnique de Montréal
Supervisors: Mohamad Sawan, 2004/8 - 2009/8
- 2004/8 Master's Thesis, Microelectronics, École Polytechnique de Montréal
Supervisors: Mohamad Sawan, 2002/4 - 2004/8
- 2001/12 Bachelor's, Electrical engineering, École Polytechnique de Montréal
Supervisors: NA, 1997/8 - 2001/12

Recognitions

- 2020/10 Finalist for the Prix Regroupements sectoriels de recherche industrielle 2020 (RSRI) of the ADRIQ-RTCi
Association Pour le Developpement de la recherche et de l'Innovation du Quebec (ADRIQ)-RTCi
Distinction
Catalysts for innovation, the Industrial Research Sectoral Groups (RSRI) promote the transfer of knowledge and technological appropriation by companies in different strategic sectors of the economy by promoting the emergence of links between the research community and the 'industry. The Sectoral Industrial Research Group (RSRI) Prize illustrates the strength of these links. The Prize is awarded jointly to two companies and a public research institution involved in a collaborative innovation project that has resulted in a new product / process / technology.

- 2020/4
Fellow of the Canadian Academy of Engineering
Canadian Academy of Engineering
Honor
The Canadian Academy of Engineering (CAE) comprises many of the country's most accomplished engineers, who have expressed their dedication to the application of science and engineering principles in the interests of the country and its enterprises. The Academy is an independent, self-governing and non-profit organization established in 1987 to serve the nation in matters of engineering concern. The Academy is an active member of the International Council of Academies of Engineering and Technological Sciences (CAETS), which involves 26 leading countries. Fellows of the Academy are nominated and elected by their peers, in view of their distinguished achievements and career-long service to the engineering profession. Fellows work closely with the other national engineering associations in Canada, and with the other Canadian academies that comprise the Council of Canadian Academies.
- 2019/11
Hommage aux personnalités inspirantes, Cérémonie des Prix Summa
Faculté des Sciences et de génie, Université Laval
Distinction
This distinction is for having obtained the Prix Génie Innovation de l'OIQ and the Canada Research Chair in Smart Biomedical Microsystems in 2018-2019
- 2019/5
OIQ Génie Innovation Prize 2019
Ordre des Ingénieurs du Québec (OIQ)
Prize / Award
The purpose of this award of the Ordre des ingénieurs du Québec (OIQ) is to recognize the innovative spirit of engineering and the improvement of the quality of life of human beings.
- 2018/10
Canada Research Chair in Smart Biomedical Microsystems
Natural Sciences and Engineering Research Council of Canada (NSERC)
Honor
The Canada Research Chair on Smart Biomedical Microsystems is a unique transformative strategy that addresses the world's most important questions in the field of biomedical technologies, including human performance enhancement, drug discovery, brain diseases, and aging. The Chair proposes a truly multidisciplinary and innovative research program at the interface of engineering, neuroscience, assistive technology and life sciences.
- 2018/10
Best paper, 2nd place, of the 2018 IEEE Life Sciences Conference
2018 IEEE Life Sciences Conference
Prize / Award
Best paper, 2nd place, of the 2018 IEEE Life Sciences Conference
- 2018/10
Best live demo 1st place, ReSMiQ Innovation Day 2018
2018 ReSMiQ Innovation Day
Prize / Award
A DWT-Based Neural Signal Decoder with Spike Detection/Compression/Clustering for Closed-Loop Optogenetics in 0.13- μ m CMOS
- 2018/10
Best poster, 3rd place, of the 2018 IEEE Life Sciences Conference
2018 IEEE Life Sciences Conference
Prize / Award
Best poster, 3rd place, of the 2018 IEEE Life Sciences Conference

- 2018/8 Selected paper for NEWCAS 2018 Special Issue of the IEEE Transactions on Circuits and Systems I: Regular Papers
NEWCAS 2018 Special Issue of the IEEE Transactions on Circuits and Systems I: Regular Papers
Distinction
"High-DR CMOS Fluorescence Biosensor With Extended Counting ADC and Noise Cancellation"
- 2018/6 Best Paper Award, 3rd place, at the IEEE NEWCAS'18 Conference
IEEE International New Circuits and Systems Conference (NEWCAS)
Prize / Award
M.N. Khiarak, K. Sasagawa, T. Tokuda, J. Ohta, S. Martel, Y. De Koninck and B. Gosselin, "A 17-bit 104-dB-DR High-Precision Low-Power CMOS Fluorescence Biosensor With Extended Counting ADC and Noise Cancellation," IEEE International New Circuits and Systems Conference (NEWCAS), June 24-27, Montreal, Canada, 2018
- 2018/5 2018 Brockhouse Canada Prize - 250,000
Natural Sciences and Engineering Research Council of Canada (NSERC)
Prize / Award
Université Laval nominated Pr Gosselin and 5 other researchers (Yves De Koninck, Daniel Côté, Younès Messaddeq, Michel Piché and Réal Vallée) for the NSERC Brockhouse Canada Prize. The Brockhouse Canada Prize for Interdisciplinary Research in Science and Engineering recognizes outstanding Canadian teams of researchers from different disciplines who have combined their expertise to produce achievements of outstanding international significance in the natural sciences and engineering in the last six years.
- 2018/5 Best Poster Award at the 2018 ReSMiQ Symposium Poster competition, Polytechnique Montreal - 250
2018 ReSMiQ Symposium Poster competition
Prize / Award
A Wireless Fiber Photometry System Based on a High-Precision 0.18 μ m CMOS Biosensor With Embedded Continuous-Time $\Delta\Sigma$ Modulation
- 2018/5 Best poster Award, Journée de la Santé 2018, Alliance Santé Québec - 500
Award, Journée de la Santé 2018, Alliance Santé Québec
Prize / Award
A 0.13 μ m CMOS Mixed SoC for Closed-Loop Multichannel Optogenetics and Neural Recording
- 2018/3 Selected paper for ISCAS 2018 Special Issue of the IEEE Transactions on Circuits and Systems I: Regular Papers
ISCAS 2018 Special Issue of the IEEE Transactions on Circuits and Systems I: Regular Papers
Distinction
"An Energy-Efficient CMOS Biophotometry Sensor With Incremental DT-Delta-Sigma ADC Conversion"
- 2018/3 Selected paper for ISCAS 2018 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems
ISCAS 2018 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems
Distinction
"A Smart Neuroscience Platform with Wireless Power Transmission for Simultaneous Optogenetics and Electrophysiological Recording"

- 2018/3 Selected paper for ISCAS 2018 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems
 ISCAS 2018 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems Distinction
 “The EcoChip: A Wireless Multi-Sensor Platform for Comprehensive Environmental Monitoring”
- 2018/3 Selected paper for ISSCC 2018 Special Issue of the IEEE Journal of Solid-State Circuits
 ISSCC 2018 Special Issue of the IEEE Journal of Solid-State Circuits Distinction
 “A 0.13 μ m CMOS SoC for Simultaneous Multichannel Optogenetics and Electrophysiological Brain Recording”
- 2017/10 Best live demo (Under graduate), ReSMiQ Innovation Day 2017
 Microsystems Strategic Alliance of Québec (ReSMiQ)
 Prize / Award
 Best live demo (Under graduate) at the ReSMiQ Innovation Day presented by PhD student Tristan Robitaille, October 2017
- 2017/10 Best live demo (Graduate, 1st place), ReSMiQ Innovation Day 2017
 Microsystems Strategic Alliance of Québec (ReSMiQ)
 Prize / Award
 Best live demo (Graduate, 1st place) at the ReSMiQ Innovation Day presented by PhD student G. Gagnon-Turcotte, October 2017
- 2017/10 2017 Franklin V. Taylor Memorial Award for the best paper and best oral presentation on 2017 IEEE Systems, man and cybernetics Conference
 Prize / Award
 Ulysse Côté-Allard supervised by Benoit Gosselin won the 2017 Franklin V. Taylor Memorial Award for the best paper and best oral presentation for his paper on Transfer learning and sEMG hand gesture recognition using convolutional neural networks, at the 2017 IEEE Systems, man and cybernetics Conference
- 2017/10 Best live demo (Graduate, 2nd place), ReSMiQ Innovation Day 2017
 Microsystems Strategic Alliance of Québec (ReSMiQ)
 Prize / Award
 Best live demo (Graduate, 2nd place) at the ReSMiQ Innovation Day presented by PhD student Mehdi Noormohammadi Khirak, October 2017
- 2017/9 Selected paper for NEWCAS 2017 Special Issue of the Analog Integrated Circuits and Signal Processing, Declined
 NEWCAS 2017 Special Issue of the Analog Integrated Circuits and Signal Processing Distinction
 “A Wireless Photostimulator for Optogenetics with Live Animals”
- 2017/9 Brian L. Barge Award for Excellence in Microsystems Integration - 2,500
 TEXPO/CMC Microsystems
 Prize / Award
 Gabriel Gagnon-Turcotte (Université Laval, supervisor Benoit Gosselin): Brian L. Barge Microsystems Integration Award for “High Resolution CMOS Neural Interface for Synchronized Electrophysiology and Optogenetics.” Judges pointed to the high level of difficulty in his prototype of the first wireless “brain-machine interface”, singling out his impressive integration of mixed analog/digital integrated circuits in a system with a wireless link and extensive signal processing, and to its strong commercial potential.

- 2017/9 Selected paper for NEWCAS 2017 Special Issue of the Analog Integrated Circuits and Signal Processing, Declined
NEWCAS 2017 Special Issue of the Analog Integrated Circuits and Signal Processing Distinction
"A High- Precision CMOS Biophotometry Sensor With Noise Cancellation and Two-Step A/D Conversion"
- 2017/8 Selected paper for ISCAS 2017 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems
ISCAS 2017 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems Distinction
"A Multimodal Adaptive Wireless Control Interface for People with Upper-Body Disabilities"
- 2017/8 Selected paper for ISCAS 2017 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems
ISCAS 2017 Special Issue of the IEEE Transactions on Biomedical Circuits and Systems Distinction
"A High-Sensitivity CMOS Biophotometry Sensor With Embedded Continuous-Time Sigma-Delta Modulation"
- 2017/5 Best live demo, IEEE International Symposium on Circuits and Systems 2017
IEEE
Prize / Award
Best live demo award at the IEEE International Symposium on Circuits and Systems 2017, presented by PhD student Cheikh Latyr Fall, May 2017
- 2016/10 Best live demo (Undergrad.), ReSMiQ Innovation Day 2016 - 600
Microsystems Strategic Alliance of Québec (ReSMiQ)
Prize / Award
Best live demo (Undergraduate) at the ReSMiQ Innovation Day presented by MSc student L. L. Gagnon, October 2016
- 2016/10 Best live demo (Graduate), ReSMiQ Innovation Day 2016 - 1,500
Microsystems Strategic Alliance of Québec (ReSMiQ)
Prize / Award
Best live demo (Graduate) at the ReSMiQ Innovation Day presented by PhD student G. Gagnon Turcotte, October 2016
- 2015/11 Mitacs Award for Outstanding Innovation – Master's
Mitcas
Prize / Award
Internship award, Gabriel Gagnon Turcotte, MSc. student
- 2015/10 Best Paper Award, 2nd place, at the IEEE BioCAS'15 Conference - 500
IEEE
Prize / Award
G. Gagnon-Turcotte, Y. LeChasseur, C. Bories, Y. De Koninck and B. Gosselin, "A Wireless Optogenetic Headstage with Multichannel Neural Signal Compression", IEEE BioCAS'15 Conference, 2015, pp. 1-4.
- 2015/6 - 2016/5 Best New IEEE Chapter Award - 1,500
IEEE
Prize / Award
Best New IEEE Chapter Award, IEEE EMBS Chapter, Quebec Section
- 2014/11 Best Student Poster Award, 4th place, MEDTEQ Forum, Quebec City - 500
Medteq
Prize / Award
Best Student Poster Award

- 2014/10 - 2014/10 Finalist for the Best Paper Award, IEEE BioCAS'14 Conference, Lausanne, Switzerland
IEEE
Prize / Award
S. A. Mirbozorgi, M. Sawan, and B. Gosselin, "A smart multi-receiver power transmission system for long-term biological monitoring", The IEEE BIOCAS'14 Conference, 2014, pp. 412-415.
- 2014/6 Best Student Paper Award, 3rd place, at the IEEE NEWCAS'14 Conference, Trois-Rivières, Québec, June 22-24, 2014
IEEE NEWCAS Conference
Prize / Award
H. Sepehrian, S.A. Mirbozorgi, and B. Gosselin, "A Low-Power Current-Reuse Analog Front-End for Multi-Channel Neural Signal Recording", IEEE NEWCAS'14 Conference, 2014, pp. 440-443.

User Profile

Research Specialization Keywords: Analog/mixed-mode integrated circuit design, Biomedical instrumentation, Brain computer interfaces, CMOS micro/nanoelectronics, Implantable & wearable electronics, Low-power circuits and systems, Neuroscience, Point-of-care diagnostics, Wireless microsystems, Wireless power transmission

Employment

- 2019/6 Full Professor
Electrical and Computer Engineering, Sciences and Engineering, Université Laval
Full-time, Professor
Tenure Status: Tenure
Research and teaching
- 2015/6 Associate Professor
Electrical and Computer Engineering, Sciences and Engineering, Université Laval
Full-time, Associate Professor
Tenure Status: Tenure
Research in smart biomedical microsystems within the Department of Electrical and Computer Engineering
- 2010/9 - 2015/8 Assistant Professor
Electrical and Computer Engineering, Sciences and Engineering, Université Laval
Full-time, Assistant Professor
Tenure Status: Tenure Track
Research in smart biomedical microsystems within the Department of Electrical and Computer Engineering
- 2010/1 - 2010/12 Postdoctoral Fellow
Electrical & Comp. Eng., Sciences and Engineering, Georgia Institute of Technology
Full-time
Tenure Status: Non Tenure Track
Designed and tested the first integrated tongue drive system at the GT-Bionics Lab under supervision of Director Maysam Ghovanloo
- 2009/9 - 2009/12 Mixed-Signal Layout Designer
Mixed-Signal Layout, PMC-Sierra Inc.
Development of integrated building blocks for a GPON in CMOS 65 nm and 45 nm

2007/1 - 2009/9	Lecturer Electrical Engineering, École Polytechnique de Montréal, École Polytechnique de Montréal Part-time Tenure Status: Non Tenure Track Development and teaching of a course in analog, digital and mixed signal electronics for fourth year and graduate students
2002/1 - 2009/8	Research Assistant Electrical Engineering, École Polytechnique de Montréal, École Polytechnique de Montréal Full-time Tenure Status: Non Tenure Track Advisor: Professor Mohamad Sawan
2002/1 - 2008/12	Laboratory instructor Electrical Engineering, École Polytechnique de Montréal, École Polytechnique de Montréal Part-time Tenure Status: Non Tenure Track Development and teaching of a course in digital electronics for fourth year students
2001/5 - 2001/8	Defence Research assistant Milsatcom, Defence Research Establishment Development of digital signal processing core for military satellite communications

Research Funding History

Awarded [n=30]

2019/3 - 2024/4 Principal Applicant	Smart bioelectronic microsystems manufacturing and multi-technology integration facility, Grant Funding Sources: Canada Foundation for Innovation (CFI) John Evans Total Funding - 250,000 Portion of Funding Received - 250,000 Funding Competitive?: Yes
2018/10 - 2023/11 Principal Applicant	Canada Research Chair Tier 2 Allocation, Research Chair Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) Canada Research Chairs Tier 2 Allocation Total Funding - 100,000 Portion of Funding Received - 100,000 Funding Competitive?: Yes
2018/11 - 2023/11 Principal Applicant	Canada Research Chair in Smart Biomedical Microsystems, Research Chair Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) Canada Research Chair Tier 2 Total Funding - 500,000 Portion of Funding Received - 500,000 Funding Competitive?: Yes
2020/5 - 2023/6 Principal Applicant	Plateforme électro-optique intelligente pour le contrôle neuronal en boucle fermée chez les animaux en mouvement libre, Grant Funding Sources: Fonds Québécois de la Recherche sur la Nature et les Technologies (FQRNT)

Projets de recherche en équipe

Total Funding - 150,000

Portion of Funding Received - 100,000

Funding Competitive?: Yes

Co-applicant : Benoit Labonté; Christian Éthier; Christophe Proulx; Leslie Rusch

2017/4 - 2023/3
Co-applicant

Smart, Autonomous, Adaptive Sensing, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

CREATE

Total Funding - 1,350,000

Portion of Funding Received - 200,000

Funding Competitive?: Yes

Co-applicant : André Marette; Marcel Babin; Marc Hébert; Pierre Marquet; Réal Vallée;
Simon Thibault; Tigran Galstian; Warwick Vincent; Yves De Koninck;

Principal Applicant : Daniel Côté

2020/1 - 2022/12
Principal Applicant

Smart neuroscience platform enhancement and pilot data on using KCC2 as a new target
for Alzheimer's disease, Grant

Funding Sources:

W. Garfield Weston Foundation

Rapid response - Follow on funding

Total Funding - 1,000,000

Portion of Funding Received - 500,000

Funding Competitive?: Yes

Co-applicant : Majid Mohajerani; Yves De Koninck

2019/4 - 2022/4
Co-applicant

A multimodal seizure detection artificial intelligence-based smart wear, Grant

Funding Sources:

Canadian Institutes of Health Research (CIHR)

Collaborative Health Research Projects

Total Funding - 570,000

Portion of Funding Received - 135,000

Funding Competitive?: Yes

Co-applicant : François Laviolette; Marie-Pierre Gagnon; Mohamad Sawan; Nicolas
Merveille;

Collaborator : Diane Tapp;

Principal Applicant : Dang Nguyen

2019/1 - 2022/1
Co-applicant

Versatile Systems-on-Chip Integration to Reduce Aircraft Weight and Gas Emission
(VairCRAFT), Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Collaborative research and development Grants

Total Funding - 996,000

Portion of Funding Received - 249,000

Funding Competitive?: Yes

Co-applicant : Ahmed Lakhssassi; Yvon Savaria;

Principal Applicant : Mohamad Sawan

2020/3 - 2021/9 Principal Applicant	<p>La plateforme bio-environnementale EcoChip: Prototypage d'une preuve de concept robuste, Grant</p> <p>Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) Canada First Research Excellence Fund, Sentinel North Strategy Total Funding - 85,000 Portion of Funding Received - 85,000 Funding Competitive?: Yes</p> <p>Co-applicant : Jacques Corbeil; Younès Messaddeq</p>
2020/7 - 2021/8 Principal Applicant	<p>Vital Signs Monitoring - for COVID-19 and more - using Ultra-Small Multi Sensing Devices built on Advanced 3D Integration Platform, Grant</p> <p>Funding Sources: Mathematics of Information Technology and Complex Systems (MITACS) Accelerate Total Funding - 60,000 Portion of Funding Received - 60,000 Funding Competitive?: Yes</p>
2020/7 - 2021/8 Principal Applicant	<p>An ultra-small vital sign monitoring multi-sensing platform, Grant</p> <p>Funding Sources: Mathematics of Information Technology and Complex Systems (MITACS) Accelerate Total Funding - 120,000 Portion of Funding Received - 120,000 Funding Competitive?: Yes</p>
2020/2 - 2021/8 Co-applicant	<p>Textile intelligent à base d'électrode de fibres non-invasive et flexible pour la détection en temps réel des activités électrophysiologiques et mécaniques des muscles, Grant</p> <p>Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) Canada First Research Excellence Fund, Sentinel North Strategy Total Funding - 85,000 Portion of Funding Received - 30,000 Funding Competitive?: Yes</p> <p>Co-applicant : Laurent Bouyer; Principal Applicant : Younès Messaddeq</p>
2015/4 - 2021/4 Collaborator	<p>Advanced Design Platform, Grant</p> <p>Funding Sources: Canada Foundation for Innovation (CFI) Innovation Fund Total Funding - 19,252,183 Portion of Funding Received - 375,000 Funding Competitive?: Yes</p> <p>Principal Applicant : Ian McWalter</p>
2015/4 - 2021/4 Co-applicant	<p>Electronic/photonic microsystems for next generation high capacity, Grant</p> <p>Funding Sources: Canada Foundation for Innovation (CFI) Innovation Fund Total Funding - 1,700,000</p>

Portion of Funding Received - 300,000

Funding Competitive?: Yes

Co-applicant : Jose Azana; Leslie Ann Rusch; Mohamad Sawan; Wei Shi; Younès Messaddeq; Yvon Savaria;

Principal Applicant : Sophie LaRoche

2016/4 - 2021/4
Principal Applicant

Smart multimodal neuroscience platform for enabling behavioural experiments with untethered animals, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Discovery Grant

Total Funding - 175,000

Portion of Funding Received - 175,000

Funding Competitive?: Yes

2015/4 - 2021/4
Co-applicant

Microsystems Strategic Alliance of Quebec (ReSMiQ) Strategic Cluster, Grant

Funding Sources:

Fonds de recherche du Québec - Nature et technologies (FRQNT)

Strategic cluster

Total Funding - 2,595,000

Portion of Funding Received - 300,000

Funding Competitive?: Yes

Principal Applicant : Mohamad Sawan

2017/1 - 2020/12
Co-applicant

Sentinel North Strategy, Sub-project 2.8: Development, implementation and use of miniature portable technologies for the prevention, assessment and treatment of chronic diseases in Nordic areas, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Canada First Research Excellence Fund, Sentinelle North Strategy

Total Funding - 646,250

Portion of Funding Received - 80,000

Funding Competitive?: Yes

Co-applicant : Andr anne K. Blanchette; Fran ois Routhier; Jean-S bastien Roy; Marc H bert; Philippe Jackson; Youn s Messaddeq;

Principal Applicant : Laurent Bouyer

2019/4 - 2020/12
Principal Applicant

Plateforme neuro-opto lectronique sans fil autorechargeable pour le d veloppement de traitements efficaces contre les troubles de l'humeur, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Canada First Research Excellence Fund, Sentinelle North Strategy

Total Funding - 85,000

Portion of Funding Received - 85,000

Funding Competitive?: Yes

2017/1 - 2020/12
Co-applicant

Sentinel North Strategy, Sub-project 3.2: Comprehensive environmental monitoring and valorisation: From molecules to microorganisms, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Canada First Research Excellence Fund, Sentinelle North Strategy

Total Funding - 545,000

Portion of Funding Received - 70,000

Funding Competitive?: Yes

Co-applicant : Alexander Culley; Dave Richard; François Laviolette; Michel Allard; Normand Voyer; Sylvain Moineau; Thierry Badard; Younès Messaddeq;

Principal Applicant : Jacques Corbeil

2018/4 - 2020/4
Co-applicant

Brockhouse Canada Prize for Interdisciplinary Research in Science and Engineering, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

2018 Brockhouse Canada Prize

Total Funding - 250,000

Portion of Funding Received - 41,666

Funding Competitive?: Yes

Co-applicant : Daniel Côté; Michel Piché; Réal Vallé; Younès Messaddeq;

Principal Applicant : Yves De Koninck

2018/4 - 2020/4
Principal Applicant

Innovative systems for smart multimodal optoelectronic sensors integration, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Research tools and instruments

Total Funding - 150,000

Portion of Funding Received - 150,000

Funding Competitive?: Yes

Co-applicant : Yves De Koninck

2017/4 - 2020/3
Principal Applicant

Interface optoélectronique sans fil auto-rechargeable pour l'étude en continu du cerveau de petit animaux pendant le comportement, Grant

Funding Sources:

Fonds de recherche du Québec - Nature et technologies (FRQNT)

Projet de recherche en équipe

Total Funding - 222,000

Portion of Funding Received - 141,000

Funding Competitive?: Yes

Co-applicant : Christian Éthier; Igor Timofeev

2019/5 - 2020/1
Principal Applicant

Development of an implantable oximeter for patients suffering from chronic respiration diseases, Grant

Funding Sources:

Mathematics of Information Technology and Complex Systems (MITACS)

Acceleration

Total Funding - 30,000

Portion of Funding Received - 30,000

Funding Competitive?: Yes

2019/2 - 2019/7
Principal Applicant

Low-power autonomous wireless beacon with extended reach and using energy harvesting method, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Engage Grants

Total Funding - 25,000

Portion of Funding Received - 25,000

Funding Competitive?: Yes

- 2019/1 - 2019/6
Principal Applicant
- Maturation de l'échochip, une plateforme bio-environnementale versatile, Grant
- Funding Sources:**
Natural Sciences and Engineering Research Council of Canada (NSERC)
Canada First Research Excellence Fund, Sentinel North Strategy
Total Funding - 30,000
Portion of Funding Received - 30,000
Funding Competitive?: Yes
- 2018/4 - 2019/4
Co-applicant
- Versatile Systems-on-Chip Integration to Reduce Aircraft Weight and Gas Emission (VairCRAFT), Grant
- Funding Sources:**
Mathematics of Information Technology and Complex Systems (MITACS) Accelerate
Total Funding - 332,000
Portion of Funding Received - 65,000
Funding Competitive?: Yes
- Co-applicant : Ahmed Lakhssassi; Yvon Savaria;
Principal Applicant : Mohamad Sawan;
Principal Knowledge User : Thales Canada
- 2017/4 - 2019/3
Co-applicant
- Operations and Maintenance Support of the Neurophotonics Centre, Grant
- Funding Sources:**
Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tools and Instruments
Total Funding - 300,000
Portion of Funding Received - 60,000
Funding Competitive?: Yes
- Principal Applicant : Yves De Koninck
- 2018/6 - 2018/11
Principal Applicant
- Development of an implantable oximeter for patients suffering from chronic respiratory insufficiency: design and validation of a prototype, Grant
- Funding Sources:**
Ministère de l'économie, de la science et de l'innovation
Programme PSVT-2B – volet maturation
Total Funding - 25,000
Portion of Funding Received - 25,000
Funding Competitive?: Yes
- 2014/4 - 2018/4
Principal Applicant
- Advanced biomedical microsystems integration platform, Grant
- Funding Sources:**
Canada Foundation for Innovation (CFI)
John R. Evans Leaders Fund
Total Funding - 416,500
Portion of Funding Received - 416,500
Funding Competitive?: Yes
- 2015/4 - 2018/4
Principal Applicant
- Minimally-invasive, wireless, multimodal micro-optrodes for brain sensing, Grant
- Funding Sources:**
Canadian Institutes of Health Research (CIHR)
Collaborative Health Research Projects
Total Funding - 750,000
Portion of Funding Received - 150,000

Funding Competitive?: Yes

Principal Applicant : Younès Messaddeq; Yves De Koninck

Completed [n=22]

2017/1 - 2018/4
Co-applicant

Internet of things for rural and remote areas over TVWS backhaul, Grant

Funding Sources:

Mathematics of Information Technology and Complex Systems (MITACS)

Acceleration

Total Funding - 30,000

Portion of Funding Received - 15,000

Funding Competitive?: Yes

Principal Applicant : Paul Fortier

2017/3 - 2018/2
Principal Applicant

Design of an embedded controller for a wireless multimodal body-machine interface, Grant

Funding Sources:

Prompt Québec

Prompt Grant

Total Funding - 17,000

Portion of Funding Received - 17,000

Funding Competitive?: Yes

Co-applicant : Alexandre Campeau Lecours; Clément Gosselin

2017/1 - 2018/1
Principal Applicant

A wireless multimodal body-machine interface for smart assistive robotics, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Collaborative Research and Development Grants

Total Funding - 45,000

Portion of Funding Received - 45,000

Funding Competitive?: Yes

Co-applicant : Alexandre Campeau Lecours; Clément Gosselin

2016/1 - 2017/12
Principal Applicant

A smart multimodal neuroscience platform for enabling new drugs and innovative therapeutics against neurodegenerative diseases, Grant

Funding Sources:

W. Garfield Weston Foundation

Rapid response

Total Funding - 150,000

Portion of Funding Received - 150,000

Funding Competitive?: Yes

Co-applicant : Yves De Koninck;

Collaborator : Younès Messaddeq

2017/3 - 2017/7
Principal Applicant

A wireless micropump control interface, Grant

Funding Sources:

Mathematics of Information Technology and Complex Systems (MITACS)

Acceleration

Total Funding - 15,000

Portion of Funding Received - 15,000

Funding Competitive?: Yes

2016/5 - 2017/4
Principal Applicant

Smart home-cage for combined optogenetics and electrophysiology, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Idea to innovation

Total Funding - 20,000

Portion of Funding Received - 20,000

Funding Competitive?: Yes

2016/3 - 2016/8
Principal Applicant

An intuitive body-machine interface to guide unmanned aerial vehicle using the voluntary arm motion, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Engage Grant

Total Funding - 25,000

Portion of Funding Received - 25,000

Funding Competitive?: Yes

2011/4 - 2016/4
Principal Applicant

High-performance biomedical microsystems to build the next generation of assistive technologies, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Discovery grant

Total Funding - 125,000

Portion of Funding Received - 125,000

Funding Competitive?: Yes

2015/7 - 2015/12
Principal Applicant

Ultra low-power wearable respiration sensors for a smart shirt, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Engage Grant

Total Funding - 25,000

Portion of Funding Received - 25,000

Funding Competitive?: Yes

2015/4 - 2015/9
Principal Applicant

Development of a microelectronic circuit board for accurate solar tracking, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)

Engage Grant

Total Funding - 25,000

Portion of Funding Received - 25,000

Funding Competitive?: Yes

2014/10 - 2015/9
Principal Applicant

Wireless multimodal body-machine interface to control a robot arm, Grant

Funding Sources:

Microsystems Strategic Alliance of Quebec (ReSMiQ)

Start-up Grant

Total Funding - 20,000

Portion of Funding Received - 10,000

Funding Competitive?: Yes

Co-applicant : Daniel Massicotte; Mounir Boukadoum; Sébastien Roy

2015/3 - 2015/7
Principal Applicant

A wireless ring pulse oximeter with advanced signal processing, Grant

Funding Sources:

Mathematics of Information Technology and Complex Systems (MITACS)

Accelerate

Total Funding - 15,000
 Portion of Funding Received - 15,000
 Funding Competitive?: Yes

2015/3 - 2015/7
 Principal Applicant

A dual-band optogenetic headstage, Grant

Funding Sources:

Mathematics of Information Technology and Complex Systems (MITACS)
 Accelerate

Total Funding - 15,000
 Portion of Funding Received - 15,000
 Funding Competitive?: Yes

2010/4 - 2015/4
 Collaborator

emSYSCAN (Embedded Systems Canada), Grant

Funding Sources:

Canada Foundation for Innovation (CFI)
 Leading Edge Fund

Total Funding - 50,000,000
 Portion of Funding Received - 650,000
 Funding Competitive?: Yes

Principal Applicant : Ian McWalter

2008/4 - 2015/4
 Collaborator

Microsystems Strategic Alliance of Quebec (ReSMiQ), Grant

Funding Sources:

Fonds de recherche du Québec - Nature et technologies (FRQNT)
 Strategic clusters

Total Funding - 2,475,000
 Portion of Funding Received - 210,000
 Funding Competitive?: Yes

Principal Applicant : Mohamad Sawan

2014/3 - 2014/12
 Principal Applicant

Nouvelles approches de mesure d'oxymétrie intégrées à la plateforme FreeO2, Contract

Funding Sources:

Sovar (Qc)

Research contract

Total Funding - 16,000
 Portion of Funding Received - 16,000
 Funding Competitive?: No

2014/6 - 2014/11
 Principal Applicant

Multimodal wireless sensor network to measure myographic activity, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
 Engage Grant

Total Funding - 25,000
 Portion of Funding Received - 25,000
 Funding Competitive?: Yes

2014/5 - 2014/10
 Principal Applicant

Amélioration d'un système asservi d'administration d'oxygène et de bronchodilatateurs, Grant

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
 Engage Plus Grant

Total Funding - 25,000
 Portion of Funding Received - 25,000
 Funding Competitive?: Yes

- 2014/5 - 2014/10
Principal Applicant
- Pre-commercial version of a wireless optogenetic neural interfacing headstage, Grant
- Funding Sources:**
Natural Sciences and Engineering Research Council of Canada (NSERC)
Engage Plus Grant
Total Funding - 25,000
Portion of Funding Received - 25,000
Funding Competitive?: Yes
- 2014/3 - 2014/8
Principal Applicant
- Système LiDAR embarqué avec traitement de signal temps réel, Grant
- Funding Sources:**
Natural Sciences and Engineering Research Council of Canada (NSERC)
Engage Grant
Total Funding - 25,000
Portion of Funding Received - 25,000
Funding Competitive?: Yes
- 2012/4 - 2014/4
Principal Applicant
- A new energy-efficient CMOS neural interface enabling wireless brain monitoring, Grant
- Funding Sources:**
Fonds de recherche du Québec - Nature et technologies (FRQNT)
New researchers start-up program
Total Funding - 87,500
Portion of Funding Received - 87,500
Funding Competitive?: Yes
- 2014/4 - 2014/4
Principal Applicant
- Packaging Equipment Request, Grant
- Funding Sources:**
Université Laval
Installation fund
Total Funding - 25,000
Portion of Funding Received - 25,000
Funding Competitive?: Yes
- Under Review [n=1]**
- 2020/4 - 2028/5
Co-applicant
- Collaborative Silicon Integrated Circuits and Systems Initiative (CSI2), Grant
- Funding Sources:**
Natural Sciences and Engineering Research Council of Canada (NSERC)
Research and Training Experience Program
Total Funding - 1,700,000
Portion of Funding Received - 170,000
Funding Competitive?: Yes
- Co-applicant : Antonio Liscidini; Catherine C. Gebotys; Hiren Patel; John Long; Natalie Enright-Jerger; Peter Levine; Roman Genov; Shahriar Mirabbasi; Slim Boumaiza;
- Principal Applicant : Sachdev Manoj;
- Principal Knowledge User : Cormac O'Connell; David Lynch; Gayathri Singh

Student/Postdoctoral Supervision

Bachelor's [n=29]

- 2020/5 - 2020/8
Principal Supervisor Michelle Janusz (In Progress) , Laval University
Thesis/Project Title: Detection of Neuromuscular Activity Using New Non-Invasive and Flexible Multimaterial Fiber Dry-Electrodes and Inertial Measurements Units (**ReSMiQ Scholarship**)
Present Position: Research intern, Laval University
- 2020/5 - 2020/8
Principal Supervisor Félix Bergeron (In Progress) , Laval University
Thesis/Project Title: Conception d'une station de base sans fil embarquée et de son microgiciel (**ReSMiQ Scholarship**)
Present Position: Research intern, Laval University
- 2020/5 - 2020/8
Principal Supervisor Marc-Antoine Dion (In Progress) , Laval University
Thesis/Project Title: Design of a hardware bootloader in VHDL for a ASIC microcontroller with volatile memory only (**NSERC USRA Scholarship**)
Present Position: Research intern, Laval University
- 2020/5 - 2020/8
Principal Supervisor Mikaël Perrot (In Progress) , Laval University
Thesis/Project Title: Intégration matérielle sur mesure pour réseau d'neurones de type CNN sur FPGA
Present Position: Research intern, Laval University
- 2019/5 - 2019/8
Principal Supervisor Guillaume Weber-Boisvert (Completed) , Laval University
Thesis/Project Title: Using biopotentials and vital sign to study and predict epileptic seizures
Present Position: Research Intern, Laval University
- 2019/5 - 2019/8
Principal Supervisor Honoré Marcotte (Completed) , Laval University
Thesis/Project Title: The EcoChip: A Wireless Multi-Sensor Platform for Comprehensive Environmental Monitoring
Present Position: Research Intern, Laval University
- 2019/5 - 2019/8
Academic Advisor Karim Bouzid (Completed) , Laval University
Thesis/Project Title: Charge distribution in the flow produced by an Annular Plasma Synthetic Jet Actuator, Università di Bologna (**Mitacs Globalink Research Internship**)
Laval University
Present Position: Master student, Laval University
- 2019/5 - 2019/8
Principal Supervisor Nathan Demers (Completed) , Laval University
Thesis/Project Title: Mouse activity tracker for social behavior testing
Present Position: Research Intern, Laval University
- 2017/5 - 2017/8
Principal Supervisor Guillaume Fillion (Completed) , Université Laval
Thesis/Project Title: Conception d'une station de base sans fil embarquée et de son microgiciel (**ReSMiQ Undergraduate Research Scholarship**, Internship)
Present Position: Undergraduate student, Université Laval
- 2017/5 - 2017/8
Principal Supervisor Jean-Michel Fortin (Completed) , Université Laval
Thesis/Project Title: Li-Fi communication system design for a wireless optogenetic platform (**NSERC USRA Scholarship**)
Present Position: Undergraduate student, Université Laval

- 2017/5 - 2017/8
Principal Supervisor Anne-Marie Zaccarin (Completed) , Université Laval
Thesis/Project Title: Algorithmed'annulation d'artéfacts induits par effet photoélectrique (**NSERC USRA Scholarship**)
Present Position: Undergraduate student, McGill
- 2017/5 - 2017/8
Principal Supervisor Caroline Taguay (Completed) , Université Laval
Thesis/Project Title: Design of a eye tracking system for a wireless body-machine interface (Research internship)
Present Position: Undergraduate student, Université Laval
- 2017/5 - 2017/8
Principal Supervisor Gabriel Pouleur (Completed) , Université Laval
Thesis/Project Title: Design of a eye tracking system for a wireless body-machine interface (Research internship)
Present Position: Undergraduate student, Université Laval
- 2016/5 - 2016/8
Principal Supervisor Guillaume Bilodeau (Completed) , Université Laval
Thesis/Project Title: Multi-receiver multimodal optogenetic headstage (**NSERC USRA Internship**)
Present Position: Undergraduate student, Université Laval
- 2016/5 - 2016/8
Principal Supervisor Simon Beaudoin (Completed) , Université Laval
Thesis/Project Title: A wireless electrical stimulator for deep brain stimulation applications (Research internship)
Present Position: Undergraduate student, Université Laval
- 2016/5 - 2016/8
Principal Supervisor Simon Tam (Completed) , Université Laval
Thesis/Project Title: Smart STED microscopy (**ReSMiQ Undergraduate Research Scholarship**, Internship)
Present Position: Undergraduate student, Université Laval
- 2016/5 - 2016/8
Principal Supervisor Léonard L. Gagnon (Completed) , Université Laval
Thesis/Project Title: A smart headstage for combined optogenetics and electrophysiology recording (Research internship)
Present Position: Master student, Université Laval
- 2016/5 - 2016/8
Principal Supervisor Francis Quevillon (Completed) , Université Laval
Thesis/Project Title: Multimodal wireless body-machine interface enablin smart assistive robotics (**NSERC USRA Internship**)
Present Position: Undergraduate student, Université Laval
- 2015/7 - 2015/8
Principal Supervisor Philippe Turgeon (Completed) , Université Laval
Thesis/Project Title: Réseau de capteurs multimodes pour le contrôle d'un robot (**ReSMiQ Undergraduate Scholarship**, Internship)
Present Position: Master student, Université Laval
- 2015/7 - 2015/12
Principal Supervisor Charles-Olivier Dufresne Camaro (Completed) , Université Laval
Thesis/Project Title: Analyse d'un algorithme de compression de signaux électrophysiologiques (**NSERC USRA Scholarship**)
Present Position: Master student, Université Laval
- 2015/5 - 2015/8
Principal Supervisor Jean-Sébastien Pelletier-Rioux (Completed) , Université Laval
Thesis/Project Title: Évaluation d'algorithmes de *onset detection* pour un capteur EMG (Research internship)
Present Position: Master student, Université Laval
- 2015/5 - 2015/8
Principal Supervisor Mathieu Lévesque (Completed) , Université Laval
Thesis/Project Title: Conception d'une station de base et d'un lien de données sériel à haut débit (Research internship)
Present Position: Undergraduate student, Université Laval

2014/5 - 2014/8 Principal Supervisor	Charles-Olivier Dufresne Camaro (Completed) , Université Laval Thesis/Project Title: Plateforme sans fil d'étude des biopotentiels (NSERC USRA internship) Present Position: Master student, Université Laval
2014/5 - 2014/8 Principal Supervisor	Philippe Turgeon (Completed) , Université Laval Thesis/Project Title: Réseau de capteurs multimodes pour le contrôle d'un robot (NSERC USRA internship) Present Position: Master student, Université Laval
2014/5 - 2014/8 Co-Supervisor	Jessy Mathault (Completed) , Université Laval Thesis/Project Title: Plateforme d'étude des neurotransmetteurs (NSERC USRA internship) Present Position: Master student, Université Laval
2014/5 - 2014/6 Principal Supervisor	Jean-François Melanson (Completed) , Université Laval Thesis/Project Title: Plateforme sans fil d'étude des biopotentiels (Research internship) Present Position: Undergraduate student, Université Laval
2014/5 - 2014/8 Principal Supervisor	Carl Nadeau (Completed) , Université Laval Thesis/Project Title: Plateforme personnalisée de régulation de la SpO2 (Research internship) Present Position: Master student, Université Laval
2014/2 - 2014/8 Principal Supervisor	Audrey Primc (Completed) , ENSEIRB-MATMECA Thesis/Project Title: Réseau de capteurs pour la mesure sans fil de la fréquence respiratoire (Foreign research internship) Present Position: RF Designer, Bull Amesys
2014/2 - 2014/8 Principal Supervisor	Tamer Elfaramawy (Completed) , ENSEIRB-MATMECA Thesis/Project Title: Évaluation de la sécurité et de la robustesse des communications Bluetooth dans les dispositifs biomédicaux (Foreign research internship) Present Position: Master student, Université Laval

Bachelor's Equivalent [n=2]

2017/2 - 2017/8 Principal Supervisor	Quentin Mascret (Completed) , École nationale supérieure de l'électronique et de ses applications Thesis/Project Title: Development and integration of a voice command for users with speech disabilities (Foreign research internship) Present Position: Master student, Université Laval
2014/2 - 2014/5 Co-Supervisor	Cécile Lombart (Completed) , Haute École Léonard de Vinci - ECAM Thesis/Project Title: Guidage d'un quadrirotor stabilisé à partir des signaux générés par un casque d'électroencéphalographie (Foreign research internship) Present Position: Postgraduate student, Haute École Léonard de Vinci - ECAM

Master's Thesis [n=31]

2020/1 - 2021/5 Principal Supervisor	Karim Bouzid, Laval University Thesis/Project Title: L'EcoChip2 : une nouvelle plateformes bio-environnementale autonome pour mesurer l'impact des changements climatiques dans le grand-nord (NSERC MSc Scholarship and SMAART-CREATE Scholarship) Present Position: Master student, Laval University
2019/5 - 2021/1 Principal Supervisor	Nicolas Gauthier (In Progress) , Laval University Thesis/Project Title: Design of smartwear devices for motion sensing Present Position: Graduate student, Laval University

- 2019/5 - 2020/12
Principal Supervisor Hicham Jouaicha (In Progress) , Laval University
Thesis/Project Title: Design and implementation of smart home-cage with wireless power transmission
Present Position: Graduate student, Laval University
- 2019/1 - 2021/1
Principal Supervisor Karim Ouazaa (In Progress) , Laval University
Thesis/Project Title: Design of a multi-sensor environmental monitoring system for the Northern climates (**NSERC SMAART-CREATE Scholarship**)
Present Position: Graduate student, Laval University
- 2018/8 - 2021/6
Principal Supervisor Amine Chériti (In Progress) , Laval University
Thesis/Project Title: Evaluation of stress and fatigue using biosignal monitoring
Present Position: Master student
- 2018/5 - 2019/8
Principal Supervisor Guillaume Bilodeau (Completed) , Laval University
Thesis/Project Title: Wireless multi-channel optogenetic headstage with vital signs monitoring (**ReSMiQ and SMAART-CREATE Scholarship**)
Present Position: PhD student, Laval University
- 2018/5 - 2019/12
Principal Supervisor Nicolas Juteau (Completed) , Laval University
Thesis/Project Title: Smart positioning system and vital signs monitoring system in an ecologically relevant naturalized environment
Present Position: Designer, Amotus Solutions
- 2018/5 - 2020/8
Principal Supervisor Simon Tam (Completed) , Laval University
Thesis/Project Title: Design of an embedded system for sEMG pattern classification dedicated to a myoelectric hand prosthesis (**CIRRIS and ReSMiQ MSc Scholarships**)
Present Position: PhD student, Laval University
- 2017/10 - 2019/9
Principal Supervisor Quentin Mascret (Completed) , Université Laval
Thesis/Project Title: A wireless multimodal body-machine interface (**SMAART-CREATE Scholarship**)
Present Position: Master student, Université Laval
- 2017/9 - 2020/8
Co-Supervisor Sanaz Ghafouri (Completed) , Université Laval
Thesis/Project Title: Multifunctional fiber-electrode arrays for sEMG sensing
Present Position: PhD student, Université Laval
- 2017/5 - 2019/5
Principal Supervisor Anita Ebrahemyan Masihi (In Progress) , Laval University
Thesis/Project Title: Energy-efficient CMOS power management circuits
Present Position: Master student, Laval University
- 2017/5 - 2019/4
Principal Supervisor Jean-Sébastien Pelletier-Rioux (In Progress) , Université Laval
Thesis/Project Title: Robust respiration rate measurement using multimodal wireless wearable sensors
Present Position: Master student, Université Laval
- 2017/5 - 2019/5
Principal Supervisor Matthieu Sylvain (Completed) , Université Laval
Thesis/Project Title: Design of a multi-sensor environmental monitoring system
Present Position: Master student, Aerex avionique
- 2017/1 - 2019/1
Principal Supervisor Zahra Rezeai (Completed) , Université Laval
Thesis/Project Title: Motion tracking system for a smart neuroscience platform
Present Position: Master student, Université Laval
- 2017/1 - 2018/12
Principal Supervisor Roxane Crepin (Completed) , Université Laval
Thesis/Project Title: Design of a myoelectric hand prosthesis based on sEMG pattern classification
Present Position: Research associate, Université Laval

2016/9 - 2017/12 Co-Supervisor	Francis Lehoux (Completed) , Université Laval Thesis/Project Title: Internet of things for rural and remote areas over TVWS backhaul Present Position: Mitacs Intern, Université Laval
2016/9 - 2017/12 Principal Supervisor	Léonard L. Gagnon (Completed) , Université Laval Thesis/Project Title: A high-resolution multimodal neuroscience platform Present Position: Master student, Université Laval
2015/9 - 2017/9 Principal Supervisor	Mounir Mechqrane (Completed) , Université Laval Thesis/Project Title: Design of NFC and Bluetooth point-of-care and diagnostic devices Present Position: Analyste-programmeur, Université Laval
2015/1 - 2017/1 Principal Supervisor	Tamer Elfaramawy (Completed) , Université Laval Thesis/Project Title: Design and implementation of a smart wireless sensor network for the continuous measurement of vital signs (BMP Innovation Scholarship) Present Position: Master student, Université Laval
2014/9 - 2016/12 Principal Supervisor	Soodeh Arab (Completed) , Université Laval Thesis/Project Title: Design of low-power short range transceivers for continuous health monitoring Present Position: Master student, Université Laval
2014/8 - 2017/8 Co-Supervisor	Elnaz Ghodsevali (Completed) , Université Laval Thesis/Project Title: Potentiostat arrays for measurement of chemical neuronal activity (ReSMiQ MSc Scholarship) Present Position: Professional engineer, Université Laval
2014/8 - 2016/8 Principal Supervisor	Ulysse Côté Allard (Completed) , Université Laval Thesis/Project Title: High-performance signal processing algorithms for a wearable brain-computer interface Present Position: PhD student, Université Laval
2014/5 - 2015/10 Principal Supervisor	Gabriel Gagnon-Turcotte (Completed) , Université Laval Thesis/Project Title: Wireless optogenetic headstage for in-vivo brain research (NSERC Master Scholarship and General Governor's of Canada Gold Medal) Present Position: Research Engineer, Université Laval
2014/1 - 2015/11 Principal Supervisor	Seyed Alireza Ghaffari (Completed) , Université Laval Thesis/Project Title: Low-power CMOS impedance spectroscopy system Present Position: Research associate, Polytechnique Montreal
2014/1 - 2016/1 Principal Supervisor	Alireza Avakh (Completed) , Université Laval Thesis/Project Title: High-efficiency CMOS circuits for on-chip pulse oximetry (ReSMiQ Master Scholarship) Present Position: Research associate, École de technologie Supérieure
2013/5 - 2019/12 Principal Supervisor	Éric Bahrucha (Completed) , Université Laval Thesis/Project Title: Low-power low-noise bioinstrumentation circuits Present Position: Technical Leader, Olympus Inc.
2013/5 - 2015/5 Co-Supervisor	Simon East-Lavoie (Completed) , Université Laval Thesis/Project Title: Embedded Lidar system (BMP Innovation Scholarship) Present Position: Design engineer, Phantom Intelligence
2013/5 - 2015/11 Principal Supervisor	Mouhamad Yassine (Completed) , Université Laval Thesis/Project Title: Transcutaneous optical telemetry link Present Position: Brand Ambassador, Advantage Solutions: Sales, Marketing, Technology
2013/5 - 2015/11 Co-Supervisor	Victor Bélanger-Garnier (Completed) , Université Laval Thesis/Project Title: Multiconductor Transmission Line Fibers Present Position: Research Scientist, Qube-4D

2013/5 - 2015/12 Co-Supervisor	Carl Poirier (Completed) , Université Laval Thesis/Project Title: Hardware accelerator for automatic DNA Sequencing Present Position: Design engineer, EATON Corporation
2012/8 - 2015/5 Principal Supervisor	Reza Ameli (Completed) , Université Laval Thesis/Project Title: Design and implementation of a wireless optogenetic headstage Present Position: Design engineer, Nutaq
Doctorate [n=23]	
2020/9 - 2023/9 Principal Supervisor	Guillaume Bilodeau (In Progress) , Laval University Thesis/Project Title: Wireless multi-channel optogenetic headstage with vital signs monitoring (ReSMiQ and SMAART-CREATE Scholarships) Present Position: PhD student, Laval University
2020/9 - 2023/9 Principal Supervisor	Hadi Hayati Konimi (In Progress) , Laval University Thesis/Project Title: Low-power implantable wireless telemetry Present Position: PhD student, Laval University
2020/9 - 2020/9 Principal Supervisor	Simon Tam, Laval University Thesis/Project Title: Design of an embedded system for sEMG pattern classification dedicated to a myoelectric hand prosthesis (CIRRIS and ReSMiQ MSc Scholarships) Present Position: PhD student, Laval University
2020/7 - 2023/7 Principal Supervisor	Jad Bakieh, Laval University Thesis/Project Title: Smart wearable microsensors design for continuous biophysical data monitoring Present Position: Phd student, Laval University
2020/5 - 2023/5 Principal Supervisor	Elmira Yekani Khoei (In Progress) , Laval University Thesis/Project Title: Real-time biophysical data analysis for smart wearable sensors Present Position: Phd student, Laval University
2020/1 - 2023/1 Principal Supervisor	Eric Bharucha, Laval University Thesis/Project Title: Low-power low-noise bioinstrumentation circuits Present Position: PhD student, Laval University
2019/9 - 2022/9 Principal Supervisor	Hamid Bouyghf (In Progress) , Laval University Thesis/Project Title: Design of high speed wireless transceiver for biomedical applications Present Position: PhD candidate, Laval University
2019/9 - 2023/9 Principal Supervisor	Msadeghm Monfared (In Progress) , Laval University Thesis/Project Title: Artificial intelligence on a chip (SMAART-CREATE Scholarship) Present Position: PhD candidate, Laval University
2019/9 - 2023/9 Principal Supervisor	Mohamad Feshki (In Progress) , Laval University Thesis/Project Title: Design and test of a neuroscience electro-optic platform (SMAART-CREATE Scholarship) Present Position: PhD candidate, Laval University
2018/5 - 2021/5 Principal Supervisor	Mousa Karimi (In Progress) , Laval University Thesis/Project Title: Smart wireless implantable oximeter with vital signs monitoring Present Position: PhD student, Laval University
2018/2 - 2018/5 Co-Supervisor	Wan Shen Hee (Completed) , Graduate School of Materials Science Nara Institute of Science and Technology Thesis/Project Title: Thin-film optical filters for CMOS fluorescence sensors Present Position: PhD student, Graduate School of Materials Science Nara Institute of Science and Technology

- 2017/5 - 2021/4
Principal Supervisor
Seyedeh Nazila Hosseini (In Progress) , Université Laval
Thesis/Project Title: Design of an integrated environmental monitoring platform (**SMAART-CREATE Scholarship**)
Present Position: PhD student, Université Laval
- 2016/9 - 2019/12
Principal Supervisor
Ulysse Côté-Allard (Completed) , Université Laval
Thesis/Project Title: High-performance signal processing algorithms for a wearable brain-computer interface (**FRQNT and IRSST PhD Scholarships**)
Present Position: PhD student, Université Laval
- 2016/9 - 2021/8
Principal Supervisor
Vahid Khojasteh (In Progress) , Université Laval
Thesis/Project Title: A Multi-Wavelength Diffuse Spectroscopy Platform for brain monitoring (**SMAART-CREATE Scholarship**)
Present Position: PhD student, Université Laval
- 2015/9 - 2019/7
Principal Supervisor
Gabriel Gagnon-Turcotte (Completed) , Université Laval
Thesis/Project Title: Wireless brain computer interfaces for close loop optogenetics (**NSERC Graham Bell Doctoral Scholarship**)
Present Position: PhD student, Université Laval
- 2015/8 - 2019/1
Principal Supervisor
Mahdi Noormohammadi (Completed) , Université Laval
Thesis/Project Title: Smart optogenetic headstage with real-time digital signal processing (**ReSMiQ Doctoral Scholarship and Anas Ahmoui Award**)
Present Position: IC Designer at SemTech, SemTech
- 2014/8 - 2017/8
Principal Supervisor
Esmaeel Maghsoudloo (Completed) , Université Laval
Thesis/Project Title: High-performance wireless power and data transfer interface for implantable medical devices (**ReSMiQ Doctoral Scholarship**)
Present Position: IC Designer, Ciena
- 2014/8 - 2017/8
Principal Supervisor
Masoud Rezaei (Completed) , Université Laval
Thesis/Project Title: A high-density wireless brain-computer interface (**ReSMiQ Doctoral Scholarship**)
Present Position: PhD student, Université Laval
- 2014/1 - 2019/1
Principal Supervisor
Cheikh Latyr Fall (Completed) , Université Laval
Thesis/Project Title: Wireless EMG sensors for rehabilitation robotics (**ReSMiQ PhD scholarship and ISCAS 2017 Best Demo Award**)
Present Position: Lead Design Engineer at Tought Technologies, Icentia
- 2013/8 - 2018/8
Principal Supervisor
Hassan Seperian (Withdrawn) , Université Laval
Thesis/Project Title: Low-noise multimodal neural interfacing microsystems
Present Position: Graduate student, Université Laval
- 2013/5 - 2017/5
Co-Supervisor
Stepan Gorgutsa (Completed) , Université Laval
Thesis/Project Title: RF-emissive fibers for broadband mobile technologies
Present Position: Research associate, Université Laval
- 2012/1 - 2015/8
Principal Supervisor
Abdollah Mirbozorgi (Completed) , Université Laval
Thesis/Project Title: High-performance wireless energy harvesting and data transfer interface for implantable medical devices (**ReSMiQ Doctoral Scholarship**)
Present Position: Assistant Professor at University of Alabama, Georgia Institute of Technology
- 2011/9 - 2015/8
Principal Supervisor
Hadi Bahrami Abarghouei (Completed) , Université Laval
Thesis/Project Title: Ultra-low-power ultra-wide-band wireless telemetry for medical applications
Present Position: Design engineer, Huawei

Post-doctorate [n=8]

- 2020/10 - 2021/10
Principal Supervisor Mohammed Hasanuzzaman, Laval University
Thesis/Project Title: Design of an ultra-small vital signs monitoring system for COVID-19 management (**Mitacs PDF**)
Present Position: Postdoctoral Fellow, Laval University
- 2020/7 - 2021/8
Principal Supervisor Fereidoon Hashemi Noshahr (In Progress) , Laval University
Thesis/Project Title: Design of an ultra-small vital signs monitoring system for COVID-19 management (**Mitacs PDF**)
Present Position: Postdoctoral Fellow, Laval University
- 2020/1 - 2020/12
Principal Supervisor Olivier Tsiakaka (In Progress) , Laval University
Thesis/Project Title: Design and test of a spinal cord monitoring implant
Present Position: Postdoctoral Fellow, Laval University
- 2019/9 - 2020/9
Principal Supervisor Partha Sarati Das (In Progress) , Laval University
Thesis/Project Title: Design of test of smart wearable sensors to predict and monitor epileptic seizures
Present Position: Postdoctoral Fellow, Laval University
- 2019/6 - 2020/6
Principal Supervisor Omidreza Ghasemi (Completed) , Laval University
Thesis/Project Title: Design and implementation of smart bio-environmental, wearable implantable sensors
Present Position: Postdoctoral Fellow, Laval University
- 2018/1 - 2018/3
Principal Supervisor Bahar Youssefi (Completed) , Laval University
Thesis/Project Title: Analog neural networks for smart sensors (**ReSMiQ Postdoctoral Scholarship**)
Present Position: Lead Design Engineer at Cadence Design Systems, Cadence Design Systems
- 2015/6 - 2016/6
Principal Supervisor François Nougrou (Completed) , Université Laval
Thesis/Project Title: Wireless intuitive multi-sensors based controller for smart rehabilitation robotics (**ReSMiQ PDF Scholarship**)
Present Position: Professor, Université du Québec à Trois-Rivières
- 2013/8 - 2015/8
Principal Supervisor Ridha Ghayoula (Completed) , Université Laval
Thesis/Project Title: Smart antennas
Present Position: Professor, Faculté des Sciences Mathématiques physiques et Naturelles de Tunis

Diploma [n=1]

- 2017/9 - 2019/5
Principal Supervisor Tristan Robitaille (Completed) , College St-Anne, Montreal
Thesis/Project Title: Real-Time Control of an Assistive Robotic Arm using a Wireless Finger Motion Sensor
Present Position: College student, College St-Anne, Montreal

Research Associate [n=2]

- 2019/6 - 2020/6
Principal Supervisor Gabriel Gagnon-Turcotte (In Progress) , Laval University
Thesis/Project Title: Design and implementation of a smart electro-optic neuroscience platform
Present Position: Research Engineer, Laval University
- 2012/9 - 2015/4
Principal Supervisor Louis Bélanger (Completed) , Université Laval
Thesis/Project Title: Microelectronics and microsystems
Present Position: Research professional, Université Laval

Event Administration

2020/6 - 2022/8	General Chair, IEEE NEWCAS Conference, Quebec City, Canada, Conference, 2022/6 - 2022/6
2020/2 - 2020/11	Special session organizer and chair, IEEE NEWCAS Conference, Montreal, Canada, November 2-4, 2020, Conference, 2020/11 - 2020/11
2019/9 - 2020/11	Special session Co-chair, IEEE NEWCAS Conference, Montreal, Canada, November 2-4, 2020, Conference, 2020/11 - 2020/11
2019/3 - 2020/9	Technical Program Chair, IEEE Engineering in Medicine and Biology 2020, Montreal, Canada, Conference, 2020/8 - 2020/8
2018/9 - 2019/7	Technical Program Chair, IEEE NEWCAS Conference, Munich, Germany, June 23-26, 2019, Conference, 2019/6 - 2019/6
2019/5 - 2019/5	Regular Session Chair, C6L-I, Wearable Sensors, Circuits and Systems, IEEE ISCAS'19 Conference, Sapporo, Japan, May 23-27, 2019, Conference, 2019/5 - 2019/5
2018/4 - 2018/11	Technical Program Chair, IEEE Life Science Conference, Montreal, Canada, October 28-30, Conference, 2018/10 - 2018/11
2018/7 - 2018/10	Special Session Organizer and Chair, "EMG Sensing & Signal Processing," the IEEE Life Sciences Conference, Montreal, October 28-30, 2018, Conference, 2018/10 - 2018/10
2018/7 - 2018/10	Special Session Organizer and Chair, "Sensors & Actuators for Animal Models," the IEEE Life Sciences Conference, Montreal, October 28-30, 2018, Conference, 2018/10 - 2018/10
2018/6 - 2018/7	Member of the Technical Program Committee, IEEE BioCAS'18 Conference, Cleveland, USA, Oct. 17-19, 2018, Conference, 2018/10 - 2018/10
2018/6 - 2018/6	Regular Session Chair, A5L-B, Biomedical Circuits and Systems, IEEE NEWCAS'18 Conference, Montreal, Canada, June 24-27, 2018, Conference, 2018/6 - 2018/6
2018/6 - 2018/6	Regular Session Chair, C3L-A, Digital Signal Processing 2: Life Sciences Applications, IEEE NEWCAS'18 Conference, Montreal, Canada, June 24-27, 2018, Conference, 2018/6 - 2018/6
2018/6 - 2018/6	Regular Session Chair, C1L-A, Digital Signal Processing 1: Telecommunications and Power Systems, IEEE NEWCAS'18 Conference, Montreal, Canada, June 24-27, 2018, Conference, 2018/6 - 2018/6
2017/9 - 2018/6	Member of the technical program committee, IEEE International NEWCAS Conference, Montreal, Québec, Canada, June 24 to 27, 2018, Conference, 2018/6 - 2018/6
2017/9 - 2018/5	Publications Co-chair, 31st Annual IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2018), Québec City, Canada on May 13–16, 2018, Conference, 2018/5 - 2018/5
2017/9 - 2018/5	Member of the technical program committee, 31st Annual IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2018), Québec City, Canada on May 13–16, 2018, Conference, 2018/5 - 2018/5
2017/3 - 2017/9	Member of the Technical Program Committee, IEEE EMBC'17 Conference, Jeju Island, Korea, July 11-15, 2017, Conference, 2017/8 - 2017/9
2017/2 - 2017/8	Member of the Technical Program Committee, Analog circuits and systems Track Chair, IEEE MWSCAS'17 Conference, Boston, USA, August 6-9, 2017, Conference, 2017/8 - 2017/8
2017/6 - 2017/6	Regular sessions Chair, IEEE NEWCAS'17 Conference, Strasbourg, France, June 25-28, 2017, Conference, 2017/6 - 2017/6

- 2017/5 - 2017/5 Regular sessions Chair, IEEE ISCAS'17 Conference, Baltimore, USA, May 28-31, 2017, Conference, 2017/5 - 2017/5
- 2017/1 - 2017/3 Special sessions Organizer and Co-chair, IEEE NEWCAS'17 Conference, Strasbourg, France, June 25-28, 2017, Conference, 2017/6 - 2017/6
- 2016/9 - 2017/3 Special session Co-chair, IEEE NEWCAS'17, Strasbourg, France, June 2016, Conference, 2017/6 - 2017/6
- 2016/10 - 2016/12 Member of the Technical Program Committee, IEEE ISCAS'17 Conference, Baltimore, USA, May 28-31, 2017, Conference, 2017/5 - 2017/5
- 2016/10 - 2016/10 Organizer, Takashi Tokuda, Graduate School of Materials Science, Nara Institute of Science and Technology (NAIST), JAPAN, "CMOS-based implantable biodevices", at the ECE Dept. Université Laval, IEEE Quebec Section, October 28, 2016., Seminar, 2016/10 - 2016/10
- 2016/8 - 2016/8 Special session Organizer and Chair, IEEE EMBC'16 Conference, Orlando, USA, Aug. 16-20, 2016, Conference, 2016/8 - 2016/8
- 2016/6 - 2016/7 Member of the Technical Program Committee, IEEE BioCAS'16 Conference, Shanghai, China, Oct. 17-19, 2016, Conference, 2016/10 - 2016/10
- 2016/6 - 2016/6 Regular session Chair, IEEE NEWCAS'16, Vancouver, British Columbia, June 26-29, 2016, Conference, 2016/6 - 2016/6
- 2016/6 - 2016/6 Special session Organizer and Chair, IEEE NEWCAS'16, Vancouver, British Columbia, June 26-29, 2016, Conference, 2016/6 - 2016/6
- 2015/1 - 2016/6 Young Professional Special Session Co-Chair, IEEE ISCAS'16 Conference, Montreal, Canada, May 22-25, 2016, Conference, 2016/5 - 2015/7
- 2016/5 - 2016/5 Organizer, Maysam Ghovanloo, School of Electrical and Computer Engineering, Georgia Institute of Technology, "Implantable and Wearable Microelectronic Devices to Improve Quality of Life for People with Disabilities", IEEE Quebec section, May 30, 2016., Seminar, 2016/5 - 2016/5
- 2016/5 - 2016/5 Special session Organizer and Chair, IEEE ISCAS'16 Conference, Montreal, Canada, May 22-25, 2016, Conference, 2016/5 - 2016/5
- 2016/5 - 2016/5 Regular session Chair, IEEE ISCAS'16 Conference, Montreal, Canada, May 22-25, 2016, Conference, 2016/5 - 2016/5
- 2016/4 - 2016/5 Member of the Technical Program Committee, IEEE NEWCAS'16, Vancouver, British Columbia, June 26-29, 2016, Conference, 2016/6 - 2016/6
- 2016/3 - 2016/4 Member of the Technical Program Committee, IEEE EMBC'16 Conference, Orlando, USA, Aug. 16-20, 2016, Conference, 2016/8 - 2016/8
- 2016/1 - 2016/2 Tutorial co-chair, IEEE NEWCAS'16, Vancouver, British Columbia, June 26-29, 2016, Conference, 2016/6 - 2016/6
- 2015/12 - 2015/12 Organizer, Mounir Boukadoum, Département d'informatique, Université du Québec à Montréal, "Spectrométrie à diodes émettrices de lumière et RNA pour l'identification ou mesure de concentration de substances et d'organismes", IEEE Quebec Section, Dec. 11, 2015., Seminar, 2015/12 - 2015/12
- 2015/4 - 2015/10 Special session Organizer and Chair, IEEE BioCAS'15, Atlanta, USA, October 22-24, 2015, Conference, 2015/10 - 2015/10
- 2014/6 - 2015/10 Publicity/Exhibitors/Patron Co-Chair, IEEE BIOCAS'15 Conference, Atlanta, USA, October 22-24, 2015, Conference, 2015/10 - 2015/10

2015/6 - 2015/7	Member of the Technical Program Committee, IEEE BIOCAS'15 Conference, Atlanta, USA, 2015, Conference, 2015/10 - 2015/10
2014/8 - 2015/6	Special session Organizer and Chair, IEEE ISCAS'15, Lisbon, Portugal, May 24-27, 2015, Conference, 2015/5 - 2015/5
2015/3 - 2015/5	Member of the Technical Program Committee, IEEE EMBC'15 Conference, Milano, Italy, Aug. 25-29, 2015, Conference, 2015/8 - 2015/8
2014/12 - 2015/5	Special session Organizer and Chair, IEEE EMBC'15, Milano, Italy, Aug. 25-29, 2015, Conference, 2015/8 - 2015/7
2015/4 - 2015/4	Organizer, Igor Timofeev, Department of Psychiatry and Neuroscience, School of Medicine, Université Laval, "Brain activities during sleep, wake and seizures", Université Laval, IEEE Seminar, Quebec Section, Seminar, 2015/4 - 2015/4
2015/3 - 2015/3	Organizer, Philip Häfliger, Department of Informatics, University of Oslo, Norway, "Microelectronics for the Body and for Space: The Nanoelectronics Group at the University of Oslo", at the ECE Dept. Université Laval, IEEE Seminar, Quebec Section, Seminar, 2015/3 - 2015/3
2015/2 - 2015/3	Member of the Technical Program Committee, IEEE NEWCAS'15 Conference, Grenoble, France, 2015, Conference, 2015/6 - 2015/6
2014/11 - 2014/11	Organizer, Zahra Moussavi, University of Manitoba, "Obstructive Sleep Apnea Prediction during Wakefulness: Challenges and Future Directions", at the ECE Dept. Université Laval, IEEE Seminar, Quebec Section, Seminar, 2014/11 - 2014/11
2014/9 - 2014/9	Organizer, Sandro Carrara, École Polytechnique Fédérale de Lausanne, "New Frontiers in Human Telemetry", at the ECE Dept. Université Laval, IEEE Seminar, Quebec Section, Seminar, 2014/9 - 2014/9
2014/6 - 2014/7	Member of the Technical Program Committee, IEEE BIOCAS'14 Conference, EPFL, Lausanne, Switzerland, 2014, Conference, 2014/10 - 2014/10
2014/6 - 2014/6	Regular Session Chair, IEEE NEWCAS'14 Conference, Trois-Rivières, Québec, 2014, Conference, 2014/6 - 2014/6
2014/6 - 2014/6	Regular Session Chair, IEEE NEWCAS'14 Conference, Trois-Rivières, Québec, 2014, Conference, 2014/6 - 2014/6
2014/4 - 2014/4	Organizer, Mohsen Rais-Ghasem, IBM Canada, "Towards Semantic Data Analysis", at the ECE Dept. Université Laval, IEEE Seminar, Quebec Section, Seminar, 2014/4 - 2014/4
2014/2 - 2014/3	Member of the Technical Program Committee, IEEE NEWCAS'14 Conference, Trois-Rivières, Québec, 2014, Conference, 2014/6 - 2014/6
2014/1 - 2014/3	Tutorial co-chair, IEEE NEWCAS'14, Trois-Rivières, Québec, June 22-25, 2014, Conference, 2014/6 - 2014/6
2014/2 - 2014/2	Organizer, Alex Edwards, CMC Microsystems, "Innovation, Prototypes, and Manufacturing", at the ECE Dept. Université Laval, IEEE Quebec Section, Seminar, 2014/2 - 2014/2
2013/12 - 2014/2	Special session Organizer and Chair, IEEE EMBC'14 Conference, Chicago, USA, Conference, 2015/8 - 2015/8

Editorial Activities

2020/4 - 2020/12	Guest Editor, Sensors, Basel. Special issue on Wearable Biomedical Sensors, Journal
2019/12 - 2020/12	Editorial Board Member, Sensors, Basel, Journal

2019/12 - 2020/7	Guest Editor, IEEE Transactions on Biomedical Circuits and Systems, Special issue on IEEE BioCAS 2019, Journal
2019/6 - 2020/2	Guest Editor, IEEE Transactions on Circuits and Systems I: Regular Papers, Special issue on IEEE NEWCAS 2019, Journal
2015/11 - 2019/12	Associate Editor, IEEE Transactions on Biomedical Circuits and Systems, Journal
2018/10 - 2019/5	Guest Editor, Special issue Wearable Wireless Sensors, Sensors, 2018, Journal
2014/1 - 2018/12	Reviewer, Journal of Neural Engineering, Journal
2010/1 - 2018/12	Reviewer, IEEE Journal of Solid-State Circuits, Journal
2007/1 - 2018/12	Reviewer, IEEE Transactions on Biomedical Circuits and Systems, Journal
2007/1 - 2018/12	Reviewer, IEEE International Symposium on Circuits and Systems (ISCAS), Conference Abstract
2006/1 - 2018/12	Reviewer, IEEE international Northeast Workshop on Circuits and Systems (NEWCAS), Conference Abstract
2004/1 - 2018/12	Reviewer, IEEE Biomedical Circuits and Systems Conference (BIOCAS), Conference Abstract
2018/7 - 2018/9	Reviewer, IEEE Life Science Conference 2018, Conference Abstract
2008/1 - 2017/12	Reviewer, IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), Conference Abstract
2006/1 - 2017/12	Reviewer, Annual Int. Conference of the IEEE Engineering in Medicine and Biology (EMBC), Conference Abstract
2005/1 - 2017/9	Reviewer, IEEE Transactions on Neural Systems and Rehabilitation Engineering, Journal
2015/1 - 2017/7	Reviewer, IEEE Transactions on Industrial Electronics, Journal
2017/5 - 2017/6	Reviewer, IEEE Transactions on Power Electronics, Journal
2016/1 - 2016/12	Reviewer, Journal of Neurophysiology, Journal
2016/1 - 2016/12	Reviewer, Journal of Neuroscience Methods, Journal
2011/1 - 2016/12	Reviewer, International Journal of Circuit Theory and Applications, Journal
2006/1 - 2016/12	Reviewer, IEEE International Conference on Electronics, Circuits and Systems (ICECS), Conference Abstract
2006/1 - 2016/12	Reviewer, IEEE Transactions on Biomedical Engineering, Journal
2005/1 - 2016/12	Reviewer, IEEE Transactions on Circuits and Systems I, Journal
2014/1 - 2015/12	Reviewer, IEEE Journal of Sensors, Journal
2013/1 - 2015/12	Reviewer, International IEEE EMBS Neural Engineering Conference (NER), Conference Abstract
2010/1 - 2015/12	Reviewer, IET Circuits, Devices & Systems, Journal
2006/1 - 2015/12	Reviewer, IEEE Transactions on Circuits and Systems 2, Journal
2011/1 - 2014/12	Reviewer, Sensors, Basel, Journal
2005/1 - 2014/12	Reviewer, Springer Analog Integrated Circuits & Signal Processing, Journal
2013/8 - 2014/8	Guest Editor, Special issue on Miniaturized Wireless Biosensors, MDPI Sensors, 2014, Journal

Expert Witness Activities

- 2018/11 - 2019/11 Member, IoT Canada Steering Committee, CMC Microsystem, Canada, Toronto
The purpose of this committee is to develop and refine the key building blocks of a new CFI proposal with particular focus on the research to be enabled and the infrastructure that will be delivered. IoTCanada will provide more than 1200 professors in 61 institutions with a comprehensive toolbox of technologies and methodologies that will enable an unprecedented range of internationally competitive research into all aspects of intelligent microsystems and nanotechnology. The software tools proposed are essential to system architecture exploration and optimization, FPGA-based prototyping and demonstration, and preparation of design data for fabrication of prototype devices in university- based micro-nano fabrication laboratories and commercial fabrication suppliers. The project is cast into a five-year period (2021-2025) delivering multiple installations of design platforms so as to keep pace with changing research needs and technological developments by infrastructure providers.
- 2011/1 - 2018/1 Expert advisor, CMC Microsystems Canada's National Design Network infrastructure and projects orientation (Project emSYSCAN, ADEPT, PAMM, Multi-technology interposer platform, etc.), Canada, Kingston
CMC's staff is regularly organizing advisory meetings with experts to gather recommendations and new ideas to orient their existing programs and platforms and to develop new infrastructure and services. Dr Gosselin is attending these meetings and providing his advises on different topics related to microsystems and embedded system design and manufacturing.
- 2017/11 - 2017/11 Expert advisor, External visiting committee, Canada, Sherbrooke
Évaluation périodique de l'Institut interdisciplinaire d'innovation technologique (3IT) qui regroupe près d'une cinquantaine de professeurs de plusieurs facultés de l'Université

Organizational Review Activities

- 2018/12 - 2019/12 Member of the Steering Committee, CMC Microsystems
Member of the Steering Committee - 2019 CFI Innovation Funds Project
- 2018/9 - 2019/4 Member of the NSERC Research Tools and Instruments Selection Committee, Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC Research Tools and Instruments Selection Committee
- 2012/7 - 2017/4 External Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC Discovery Grant evaluation, 2012-2014, 2016
- 2016/10 - 2016/12 Member of the Review Committee, Alberta Innovate
I reviewed a grant application to this program as an external reviewer
- 2011/1 - 2016/1 Member of the Jury, PhD theses and Master reports examination, Université Laval
Thesis examination: 11 PhD theses and 16 Master reports since 2011.
- 2009/7 - 2016/1 Journals and International conferences Reviewer, IEEE, Springer, IET, etc.
I often review journal and conference papers in the fields of circuits and systems and biomedical engineering.
- 2015/7 - 2015/9 External Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC Strategic Grant evaluation

- 2012/1 - 2015/3 Member of the Review Committee, Fonds de recherche du Québec - Nature et technologies (FRQNT)
I reviewed grant applications to the FRQ-NT Team Grant program in 2013 and in 2015
- 2015/1 - 2015/2 External Reviewer, MITACS
MITACS Accelerate Grant evaluation, 2015
- 2013/1 - 2014/12 Member of the Jury, IEEE Student Branch Competition of electronics, IEEE Student Branch
Member of the Jury, Competition of electronics, IEEE Student Branch, 2013-2014.

Knowledge and Technology Translation

- 2019/2 - 2019/7 Principal Investigator, R&D Collaboration with Industry
Group/Organization/Business Serviced: Solutions Amotus
Target Stakeholder: Industry/Business-Small (<100 employees)
Outcome / Deliverable: This project funded by an NSERC Engage Grant (EGP536212 - 18) aims to develop a wireless *Bluetooth Low Energy* beacon operating in a stand-alone mode using one or more energy harvesting methods (radio frequency (RF), solar, vibration, etc.) and offering a longer reach.
Activity Description: Group/Organization/Business Serviced: Solutions Amotus Target Stakeholder: Industry/Business-Small (<100 employees) Outcome / Deliverable: This project funded by an NSERC Engage Grant (EGP536212 - 18) aims to develop a wireless Bluetooth Low Energy beacon operating in a stand-alone mode using one or more energy harvesting methods (radio frequency (RF), solar, vibration, etc.) and offering a longer reach.
- 2018/3 - 2018/9 Principal Investigator, R&D Collaboration with Industry
Group/Organization/Business Serviced: UMANX
Target Stakeholder: Industry/Business-Small (<100 employees)
Outcome / Deliverable: The objective of this project is to develop a wireless charger to charge an autonomous mobile robot. The prototype that will feature a power amplifier circuit board, a power transmitter, a power receiver and a power management unit designed to deliver 100 W at an efficiency above 40% to a receiver coil for charging a 15-V 10-Ah lithium battery from 0 to 100% within 2 hours.
Activity Description: Group/Organization/Business Serviced: UMANX Target Stakeholder: Industry/Business-Small (<100 employees) Outcome / Deliverable: The objective of this project is to develop a wireless charger to charge an autonomous mobile robot. The prototype that will feature a power amplifier circuit board, a power transmitter, a power receiver and a power management unit designed to deliver 100 W at an efficiency above 40% to a receiver coil for charging a 15-V 10-Ah lithium battery from 0 to 100% within 2 hours.

2018/2 - 2018/8

Principal Investigator, R&D Collaboration with Industry

Group/Organization/Business Served: Oxynov Inc.

Target Stakeholder: Industry/Business-Small (<100 employees)

Outcome / Deliverable: The goal of this project, which is funded by a PSVT grant from the Ministry of economy and sciences of Quebec, is to develop an implantable oximeter to measure the SpO₂ continuously in patients who will receive automatically adjusted oxygen in the long term.

Evidence of Uptake/Impact: Once in place, this sensor will reliably and continuously indicate and adjust the rate of saturated oxygen without falling off or losing contact with the skin, and without seeking the patients' or professional interventions, therefore greatly contributing to increasing the relevance of using the FreeO₂ system at home.

Activity Description: Group/Organization/Business Served: Oxynov Inc. Target Stakeholder: Industry/Business-Small (<100 employees) Outcome / Deliverable: The goal of this project, which is funded by a PSVT grant from the Ministry of economy and sciences of Quebec, is to develop an implantable oximeter to measure the SpO₂ continuously in patients who will receive automatically adjusted oxygen in the long term.

Evidence of Uptake/Impact: Once in place, this sensor will reliably and continuously indicate and adjust the rate of saturated oxygen without falling off or losing contact with the skin, and without seeking the patients' or professional interventions, therefore greatly contributing to increasing the relevance of using the FreeO₂ system at home.

2014/6 - 2017/12

Principal investigator, R&D Collaboration with Industry

Group/Organization/Business Served: Kinova

Target Stakeholder: Industry/Business-Medium (100 to 500 employees)

Outcome / Deliverable: A fully wireless multimodal sensor node will be delivered to Kinova. Such a sensor node will measure electromyographic signals, acceleration, orientation and inertia to ease control of JACO by motor impaired patients.

Evidence of Uptake/Impact: This project will greatly enhance JACO assistive robotic arm which will enable Kinova to reach and help much more motor impaired patients.

References / Citations / Web Sites: C. L. Fall et al., IEEE EMBC 2015, C. L. Fall et al. IEEE Journal of Biomedical and Health Informatics, 2015, C. L. Fall et al. IEEE ISCAS 2015.

Activity Description: This project, which is funded by an NSERC Engage Grant (EGP 463620 - 14) and a NSERC CRD Grant (RDCPJ498928 - 16), consists of designing a wireless body sensor network to control JACO, an assistive robotic arm, in a more reliable and natural fashion for motor impaired patients.

- 2016/3 - 2016/8
 Principal Investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Quanser Inc.
 Target Stakeholder: Industry/Business-Medium (100 to 500 employees)
 Outcome / Deliverable: Signal processing and machine learning algorithms that will translate the raw sEMG signals measured from a user's forearm into guiding instructions will be enclosed within an innovative toolbox that will provide the users (the students) with several state-of-the-art methods to quickly test different guidance strategies.
 Evidence of Uptake/Impact: Quanser is looking for innovative approaches to guide quadcopters that will provide a plethora of new training opportunities focused on a multi-disciplinary environment, such as biomedical engineering, bio-informatics, machine learning and new wireless technologies. In particular, the company is looking forward to develop new GNC approaches based on novel strategies such as body-machine interfaces.
 Activity Description: This project funded by an NSERC Engage Grant (EGP 491600 - 15) aims at developing an intuitive sEMG-based body-machine interface to guide Quanser's quadcopter using the voluntary arm motion. The proposed interface will translate the raw sEMG signals measured from a user's forearm into guiding instructions in real-time. The sEMG signals will be measured using the Myo Gesture Control Armband from Thalmic Labs, and converted into a trajectory (i.e. target x-y-x position, direction and speed) through powerful machine learning algorithms that will be designed by our team at Université Laval.
- 2015/7 - 2015/12
 Principal investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Hexoskin - Carré Technologie
 Target Stakeholder: Industry/Business-Small (<100 employees)
 Outcome / Deliverable: A fully functional prototype with improved respiratory inductive plethysmography measurement will be delivered to Hexoskin along with the associated design documentation. The proposed solution will increase precision while decreasing power consumption.
 Evidence of Uptake/Impact: This project will allow Hexoskin to offer a better, unique and more competitive product and capture new markets, such as healthcare and medical research.
 Activity Description: This project funded by an NSERC Engage Grant (EGP 484284 - 15) consists of improving the performance of the respiratory inductive plethysmography measurement system employed in Hexoskin's biometric shirts through innovative circuit techniques.
- 2015/3 - 2015/8
 Principal investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Optique Fullum
 Target Stakeholder: Industry/Business-Small (<100 employees)
 Outcome / Deliverable: The objective of this project funded by an NSERC Engage Grant (EGP 477678 - 14) is to develop a solar microelectronics board prototype that will feature a lightweight CMOS imager, a hemispheric lens, a microelectronic board, and a control program designed to track within $\pm 0.5^\circ$ accuracy the sun throughout the day.
 Evidence of Uptake/Impact: Recent years have seen dramatic improvements in renewable energy cost competitiveness as a result of R&D and accelerated technology deployment. Concentrated solar power can help companies reduce their electricity expenses and meet their sustainable development goals through access to clean energy. Since solar energy is used extensively worldwide, it is expected that this 6-month project will generate the skills needed to foster Canadian-based innovation in solar energy production.
 Activity Description: The company-specific problem requires the development of a microelectronic board that will provide controlled and accurate Sun tracking throughout the day, as well as low power consumption and light weight.

- 2012/7 - 2014/12
 Principal investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Doric Lenses Inc.
 Target Stakeholder: Industry/Business-Small (<100 employees)
 Outcome / Deliverable: The outcome is the design of the first wireless optogenetic headstage combining photostimulation and electrophysiology recording into a single device to study the brain of small awake and fully behaving rodents over long periods of time, which has been delivered to Doric Lenses Inc.
 Evidence of Uptake/Impact: Doric Lenses has commercialized the outcome of this research in 2015, and our related published papers have been cited in several Journals, ex.: the Journal of Neuroscience Methods: D. C. Klorig and D. W. Godwin, "A magnetic rotary optical fiber connector for optogenetic experiments in freely moving animals," Journal of Neuroscience Methods, vol. 227, pp. 132–139, Apr. 2014.
 References / Citations / Web Sites: <http://doriclenses.com/life-sciences/fiberless-and-wireless/920-fiberless-wireless-headstage.html>
 Activity Description: In this project funded by an NSERC Engage Grant (EGP 434000 - 12) and a NSERC Engage Plus Grant (EGP2 461771 - 14), we have designed a wireless optogenetic headstage to study the brain of small awake and fully behaving rodents over long periods of time. Doric Lenses has commercialized this new tool in 2015, which opens up new opportunities to neuroscience researchers all around the world.
- 2014/6 - 2014/11
 Principal investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Oxynov Inc.
 Target Stakeholder: Patients
 Outcome / Deliverable: The design of an improved closed-loop system for oxygen therapy with a new module for the release of bronchodilators will be delivered. Additionally, the developed system employs a multimode body sensor area network to improve control of oxygen delivery.
 Evidence of Uptake/Impact: In addition to decrease traffic and wait at urgency room, this project will allow Oxynov to capture a huge market worldwide.
 References / Citations / Web Sites: F. Lellouche et al., 28th Annual Congress of the European Society of Intensive Care Medicine (ESICM'15), October 3-7, Berlin, Germany, 2015. T. Elfaramawy et al., IEEE ISCAS 2016, Montreal, Canada.
 Activity Description: This project funded by an NSERC Engage Plus Grant (EGP2 462218 - 14) consists of extending the function of a closed-loop system for oxygen therapy by adding an electromechanical module for bronchodilators release and a body area sensor network to improve control of oxygen delivery.
- 2014/5 - 2014/10
 Principal investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Doric Lenses Inc.
 Target Stakeholder: Industry/Business-Small (<100 employees)
 Outcome / Deliverable: A pre-commercial version of a a miniature optogenetic headstage for wirelessly stimulating the brain of transgenic rodents using 2 high-power stimulating LEDs and two electrophysiological recording channels.
 Evidence of Uptake/Impact: In addition to benefit several Canadian researchers by opening up new avenues for brain research, the envisioned technology will give Doric Lenses an edge for capturing a new market with innovative products, and will contribute to the development of high-tech industry in Canada.
 References / Citations / Web Sites: G. Gagnon-Turcotte et al, IEEE TBioCAS 2015 (Pending review). G. Gagnon-Turcotte et al, Sensors, vol. 15, no. 9, pp. 22776-22797, 2015. G. Gagnon-Turcotte et al, IEEE ISCAS 2015, pp. 802-805.
 Activity Description: This project funded by an NSERC Engage Plus Grant (EGP2 462218 - 14) consists of building a pre-commercial version of a wireless headstage previously developed. Doric Lenses intend to put such a unique research tool in his current offering. This tool will enhance small animal brain research capability in several research centers all around the world.

2014/3 - 2014/8 Principal investigator, R&D Collaboration with Industry
 Group/Organization/Business Serviced: Aerostar R&D Canada
 Target Stakeholder: Industry/Business-Small (<100 employees)
 Outcome / Deliverable: The deliverable consists of an embedded real time signal processor based on MUSIC, a powerful algorithm to classify multiple signals under low signal to noise ratio. Such a processor will take advantage of programmable field gate array technology and parallel computing to enable real time processing and to fit within portable format.
 Evidence of Uptake/Impact: This project will contribute to strengthen Canadas's position in the growing sector of LiDAR technologies. The envisioned technology is geared towards increasing safety of transportation, and opening up new opportunities in several areas, such as aerospace and medicine.
 Activity Description: This project funded by an NSERC Engage Grant (EGP 461687 - 13) consists of developing an embedded real time signal processor based on MUSIC, a powerful algorithm to classify multiple signals under low signal to noise ratio. Such a processor will be used by Aerostar to develop several portable Light Detection And Ranging (LiDAR) applications.

International Collaboration Activities

2020/4 - 2021/3 Collaborator, Switzerland
 This collaboration with professor Sandro Carrara consist of developing and testing new miniaturized impedance spectroscopy system. Dr Carrara and I are co-supervising a Master student registered at Laval for a research internship at EPFL in summer 2020.

2017/1 - 2019/12 Collaborator, France
 This collaboration with Dr Ipek Yalcin, Tenure Researcher CR1 CNRS, Institut des Neurosciences Cellulaires et Intégratives (INCI), Strasbourg, consist of developing and utilizing a wireless brain machine interface to decode limbic computation of emotional states in rodents

2016/4 - 2019/4 Collaborator, Japan
 This collaboration with Dr Takashi Tokuda, Graduate School of Materials Science, Nara Institute of Science and Technology (NAIST) consist of developing new optoelectronic bio-interfaces

2012/1 - 2018/12 Collaborator, France
 I'm developing new tools to help COPD patients with Dr Erwan L'Her from, Université de Bretagne Occidentale, Brest, France.

2017/8 - 2018/8 Collaborator, Norway
 I'm developing smart robotic assistive tools with Dr Kyrre Glette from University of Oslo. Dr Glette is specialized in deep learning methods and evolutionary optimization algorithms.

2016/4 - 2018/4 Collaborator, France
 I'm developing new smart electronic devices to perform heart optogenetics in live animals with Dr Aurelien Chatelier, Université de Poitiers, France

Committee Memberships

2019/10 Committee Member, Board of Directors of CMC Microsystems, CMC Microsystems
 2018/12 Committee Member, CMC Microsystem 2019 CFI Innovation Funds Project, CMC Microsystems

2018/6	Committee Member, Board of Directors of the Microsystems Strategic Alliance of Québec (ReSMiQ), Directors of the Microsystems Strategic Alliance of Québec (ReSMiQ) Former Representative Member for UL from 2012 to 2015, and now back since June 2018.
2017/1	Committee Member, Graduate Program Executive Committee, Department of Electrical and Computer Eng., Laval University
2012/4 - 2018/6	Committee Member, Executive Committee of the Microsystems Strategic Alliance of Québec (ReSMiQ), The Microsystems Strategic Alliance of Québec (ReSMiQ)
2015/5 - 2016/5	Committee Member, IEEE Biomedical and Life Science Circuits and Systems (BioCAS TC), IEEE Circuits and Systems Society
2014/5 - 2016/5	Chair, IEEE EMB/CAS Chapter, Quebec Section, IEEE Chapter Founder and Chair

Other Memberships

2020/4	Fellow, the Canadian Academy of Engineering The Canadian Academy of Engineering is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada.
2016/9	Regular Researcher, CERVO Brain Research Center
2016/6	Member, Ordre des Ingénieurs du Québec
2016/1	Regular Researcher, Center for Interdisciplinary Research in Rehabilitation and Social Integration
2015/9	Regular Researcher, Big Data Research Centre (BDRC)
2011/1 - 2016/7	Member, IEEE Engineering in Medicine and Biology Society
2002/11 - 2016/7	Member, IEEE
2011/1 - 2016/1	Member, IEEE Circuits and Systems Society

Presentations

- (2020). Smart Electro-Optic Platforms Enabling New Closed-Loop Neuroscience Tools. FETCH 2020, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
- (2020). Sensors and interface circuits. NSERC Collaborative Research and Training Experience Program SMAART Bootcamp, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
- Prof. Jinhong Guo, University of Electronic Science and Technology of China, Chengdu, China and Prof. Hao Yu, Southern University of Science and Technology of China, Shenzhen, China. (2019). Internet of Medical Things: From Biomedical Circuits and Systems to Healthcare Engineering (Full-day tutorial). International Symposium on Circuits and Systems 2019, Sapporo, Japan
Main Audience: Researcher
Invited?: Yes, Keynote?: No

4. (2019). Wireless Electro-Optic Platform for closed-loop optogenetics and electrophysiology in freely moving animals. Symposium en neurotechnologies, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
5. (2019). Wireless Electro-Optic Neuroscience Platforms. Retraite du Centre CERVO, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
6. (2019). Wireless Electro-Optic Neuroscience Platforms. Invited presentation at York University, Toronto, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
7. (2018). Real-Time Human Physical Activity Recognition with Low Latency Prediction Feedback Using Raw IMU Data. IEEE Engineering in Medicine and Biology, Hawaii, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
8. (2018). Real-Time Control of an Assistive Robotic Arm using a Wireless Finger Motion Sensor. IEEE Engineering in Medicine and Biology, Hawaii, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
9. (2018). Wireless Optoelectronic Microsystems for Combined Optogenetics and Opto-Electrophysiology. 6e Journée du Département de médecine moléculaire de l'Université Laval 2018, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
10. (2018). A Smart Neuroscience Platform with Wireless Power Transmission for Simultaneous Optogenetics and Electrophysiological Recording. IEEE International Symposium on Circuits and Systems, Florence, Italy
Main Audience: Researcher
Invited?: No, Keynote?: No
11. (2018). Wireless Optoelectronic Fiber Photometry Headstage for Deep Brain Structures Monitoring. IEEE Life Sciences Conference (LSC'18), Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
12. (2018). Wireless Optoelectronic Microsystems for Combined Optogenetics and Opto-Electrophysiology. 6th Molecular Medicine Department Day, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
13. (2018). A Wireless Optoelectronic Neuroscience Platform for Chronic Fluorescence Sensing in Freely Behaving Rodents. IEEE Engineering in Medicine and Biology Conference, Hawaii, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
14. (2018). L'humain 2.0: augmenter les performances humaines grâce aux nouvelles technologies. Seminars of the Quebec IEEE Student Branch, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
15. (2018). L'humain 2.0: augmenter les performances humaines grâce aux nouvelles technologies. CEGEP Gérald-Godin, Montreal, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: No

16. (2018). Real-Time Hand Motion Recognition Using sEMG Patterns Classification. IEEE Engineering in Medicine and Biology Conference, Hawaii, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
17. (2018). Unobstrusive and wireless electronic oscillometric sphygmomanometer for ambulatory blood pressure monitoring. IEEE Engineering in Medicine and Biology, Hawaii, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
18. (2018). The EcoChip: A Wireless Multi-Sensor Platform for Comprehensive Environmental Monitoring. IEEE International Symposium on Circuits and Systems, Florence, Italy
Main Audience: Researcher
Invited?: No, Keynote?: No
19. (2017). Augmenter les performances humaines grâce aux nouvelles technologies. Pint of Science, Quebec City, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: No
20. (2017). Wireless Optoelectronic Microsystems for Implantable and Wearable Biomedical Applications. ReSMiQ Innovation Day 2017, Microsystems Strategic Alliance of Québec, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
21. (2017). A Wirelessly Powered High-Speed Transceiver for High-Density Bidirectional Neural Interfaces. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
22. (2017). Wireless Optoelectronic Microsystems for Implantable and Wearable Biomedical Applications. Journée du COPL, 2017, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
23. (2017). Smart Neuroscience Platforms Enabling Synchronized Optogenetics and Multichannel Electrophysiology Recording. Ecole d'hiver Francophone sur les Technologies de Conception des Systèmes Embarqués Hétérogènes (FETCH 2017), Mont-Tremblant, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
24. (2017). Collaborative R&D in Biomedical Engineering: From University to Industry. IEEE Research Boost, Montréal, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes
25. (2017). Wireless Brain Computer Interfaces For Synchronized Optogenetics and Electrophysiology. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
26. (2017). A Fully Implantable Multichip Neural Interface with a New Scalable Current-Reuse Front-End. 15th IEEE International New Circuits and Systems Conference (NEWCAS 2017), Strasbourg, France
Main Audience: Researcher
Invited?: Yes, Keynote?: No
27. (2017). Wireless Multimodal Body-Machine nterface: NSERC Collaborative R&D Program. Kinova Robotics, Montreal, Canada, Montreal, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No

28. (2016). A Short-Impulse UWB BPSK Transmitter for Large-Scale Neural Recording Implants. The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16), Orlando, USA, 08/2016, Orlando, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
29. (2016). An 110-nW in-Channel Sigma-Delta Converter for Large-Scale Neural Recording Implants. The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16), Orlando, USA, 08/2016, Orlando, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
30. (2016). Low-Power High-Speed Wireless Transceivers and Antennas for Large-Scale Neural Implants. IEEE NEWCAS Conference (NEWCAS'16), Vancouver, Canada, 06/2016, Vancouver, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
31. (2016). Wireless Brain-Machine Interfaces Enabling Combined Optogenetics and Multichannel Electrophysiology. Invited talk at the Department of Informatics, Université Laval, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
32. (2016). Wireless Brain-Machine Interfaces Enabling Combined Optogenetics and Multichannel Electrophysiology. Invited talk, University of Toronto, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
33. (2015). A Wireless Optogenetic Headstage with Multichannel Neural Signal Compression. The IEEE Biomedical Circuits and Systems Conference (BioCAS'15), Atlanta, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
34. (2015). Integrated UWB Transmitter and Antenna Design for Interfacing High-Density Brain Microprobes. IEEE International Conference on Ubiquitous Wireless Broadband (ICUWB'15), Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
35. S. A. Mirbozorgi. (2015). A Full-Duplex Wireless Integrated Transceiver for Implant-to-Air Data Communications. IEEE Custom Integrated Circuits Conference (CICC'15), San Jose, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
36. (2015). Smart, Wireless and Multimodal Platforms for Probing the Brain Microcircuits. Annual Meeting of the CRIUSMQ, Quebec City, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
37. (2015). A Wireless Headstage for Combined Optogenetics and Multichannel Electrophysiological Recording in Freely Behaving Animals. 4th International Frontiers in Neurophotonics Symposium, Quebec City, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
38. (2015). A Wireless Multichannel Optogenetic Headstage With On-The-Fly Spike Detection. IEEE International Symposium on Circuits and Systems (ISCAS'15), Lisbon, Portugal
Main Audience: Researcher
Invited?: Yes, Keynote?: No

39. (2015). Multichannel Spike Detector With an Adaptive Threshold Based On a Sigma-Delta Control Loop. The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15), Milano, Italy
Main Audience: Researcher
Invited?: Yes, Keynote?: No
40. (2015). Wireless Brain-machine Interfaces for Combined Optogenetics and Multichannel Electrophysiology. Seminar at University of Toronto, Toronto, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
41. (2015). Low-Power Adaptive Spike Detector Based on a Sigma-Delta Control Loop. The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15), Milano, Italy
Main Audience: Researcher
Invited?: Yes, Keynote?: No
42. (2014). A Low-power Current-Reuse Dual-Band Analog Front-End for Multi-Channel Neural Signal Recording. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14), Chicago, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
43. (2014). Energy-efficient neuroengineering microsystems. CMOSETR 2014, Grenoble, France
Main Audience: Researcher
Invited?: Yes, Keynote?: No
44. (2014). Novel resonance-based multicoil array structure for enabling long-term biological monitoring in-vivo. The IEEE Biomedical Circuits and Systems Conference (BIOCAS'14), Lausanne, Switzerland
Main Audience: Researcher
Invited?: Yes, Keynote?: No
45. (2014). Towards a Wireless Optical Stimulation System for Long Term In-Vivo Experiments. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14), Chicago, United States
Main Audience: Researcher
Invited?: Yes, Keynote?: No
46. (2014). A Low-Power Current-Reuse Analog Front-End for Multi-Channel Neural Signal Recording. IEEE NEWCAS Conference (NEWCAS'14), Trois-Rivières, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Broadcast Interviews

- | | |
|----------------------------|---|
| 2018/05/07 -
2021/09/30 | Smart hand prosthesis and wearable electronic sensors, Capsules Scientifique de nature: https://ici.exploratv.ca/videos/2289-lintelligence-de-mains-robotisees/ , ICI Explora |
| 2017/04/21 -
2017/04/21 | Brain computer interfaces, Catherine Lachaussee, Radio-Canada cet après-midi, Radio-Canada |

Text Interviews

- | | |
|------------|---|
| 2020/10/01 | Dominique Lelièvre, "Développement d'un bracelet pour lutter contre la COVID," Journal de Québec, COVID-19 monitoring bracelet, Journal de Québec. [Online]. Available: https://www.journaldequebec.com/2020/10/01/developpement-dun-bracelet-pour-lutter-contre-la-covid |
|------------|---|

2020/10/01	François Cattapan, "Contribution universitaire à un bracelet contre la Covid-19", Québec Hebdo, COVID-19 monitoring bracelet, Québec Hebdo. [Online]. Available: https://www.quebechebdo.com/art-de-vivre/231064/contribution-universitaire-a-un-bracelet-contre-la-covid-19/
2020/03/01	1 million de dollars pour faire avancer la recherche sur la maladie d'Alzheimer, Le Plan
2019/09/01	Prix Génie Innovation 2019 de l'OIQ: Plateforme électro-optique sans fil pour l'étude du cerveau et de ces maladies, Revue Plan, 2019, Revue Plan
2019/04/10	Jean Hamann, "Researchers Develop Intelligent Epidermal Patch to Measure Respiratory Rate and Coughing Outlines," Le Fil, avril 2019., The breath timbre. [Online]. Available: https://www.lefil.ulaval.ca/le-timbre-de-la-respiration/
2016/11/24	Mélissa Guillemette, "Des puces pour le cerveau faites à Québec", Québec science, Nov. 2016., [Online]. Available: http://www.quebecscience.qc.ca/Des-puces-pour-le-cerveau-faites-a-Quebec-
2016/04/01	Optogenetics device shines a new light on brain function, Success Stories 2015-16, CMC Microsystems. [Online]. Available: http://www.cmc.ca/AboutCMC/SuccessStories.aspx
2015/11/26	Étudier le cerveau en mode Bluetooth (Studying the brain in bluetooth mode), Le Fil, Université Laval: http://www.lefil.ulaval.ca/articles/etudier-cerveau-mode-bluetooth-37948.html
2015/07/14	Multicoil Links May Hold the Key to Wireless Charging, Innovation Spotligh - IEEE Xplore
2014/12/01	Des vêtements sans fil (Wireless clothing), Le Fil, Université Laval: http://lefil.ulaval.ca/articles/des-vetements-sans-fil-36684.html
2014/04/14	Wireless power transmission, http://impactcampus.qc.ca/sciences-et-technologies/les-champs-magnetiques-remplaceront-bientot-les-fils/

Publications

Journal Articles

- *U. Côté-Allard, E. Campbell, A. Phinyomark, F. Laviolette, B. Gosselin, E. Scheme. (2020). Interpreting deep learning features for myoelectric control: A comparison with handcrafted features. *Frontiers in Bioengineering and Biotechnology*. 8: 158.
Published
Refereed?: Yes, Open Access?: No
- *E. Maghsoudloo, *G. Gagnon-Turcotte, *Z. Rezaei C. Bories, I. Keramidis, Y. De Koninck and B. Gosselin. (2020). A Smart Neuroscience Platform with Wireless Power Transmission for Simultaneous Optogenetics and Electrophysiological Recording. *IEEE Transactions on Biomedical Circuits and Systems*.
Revision Requested
Refereed?: Yes, Open Access?: No
- *U. Côté-Allard, *G. Gagnon-Turcotte, A. Phinyomark, K. Glette, E. Scheme, F. Laviolette, B. Gosselin. (2020). Unsupervised Domain Adversarial Self-Calibration for Electromyographic-based Gesture Recognition. *IEEE Access*.
In Press
Refereed?: Yes, Open Access?: Yes
- *Q. Mascaret, *G. Gagnon-Turcotte, C.L. Fall, M. Biemann, Bouyer, B. Gosselin. (2020). Real-Time Normalization and Prediction Using Raw Inertial Data for Human Physical Activity Recognition. *IEEE Sensors Journal*.
Submitted
Refereed?: Yes, Open Access?: No

5. Nicolas Juteau, Benoit Gosselin. (2020). Wearable wireless-enabled oscillometric sphygmomanometer: a flexible ambulatory tool for blood pressure estimation. *IEEE Transactions on Biomedical Circuits and Systems*. : (Early access).
In Press
Refereed?: Yes, Open Access?: No
6. *G. Gagnon-Turcotte, *G. Bilodeau, *O. Tsiakaka, B. Gosselin. (2020). Smart Autonomous Electro-Optic Platforms Enabling Innovative Brain Therapies. *IEEE Circuits and Systems Magazine*.
In Press
Refereed?: Yes, Open Access?: No
7. *U. Côté-Allard, *G. Gagnon-Turcotte, A. Phinyomark, K. Glette, E. Scheme, F. Laviolette, B. Gosselin. (2020). Virtual reality to study the gap between offline and real-time EMG-based gesture recognition. *IEEE Trans. Neural Syst. Rehabil. Eng.*
Revision Requested
Refereed?: Yes, Open Access?: No
8. Simon Tam*, Mounir Boukadoum, Alexandre Campeau-Lecours, and Benoit Gosselin. (2020). Intuitive Real-Time Control Strategy for High-Density Myoelectric Hand Prosthesis Using Deep and Transfer Learning. *Scientific Reports*.
Submitted
Refereed?: Yes, Open Access?: Yes
9. Olivier Tsiakaka, Benoit Gosselin, Sylvain Feruglio. (2020). Source–Detector Spectral Pairing-Related Inaccuracies in Pulse Oximetry: Evaluation of the Wavelength Shift. *Sensors*. 20(11): 3302.
Published
Refereed?: Yes, Open Access?: Yes
10. M. Roudjane, *S. Tam, *Q. *Mascret, C.L. *Fall, M. Biemann, R.A.D. de Faria, L. Bouyer, B. Gosselin, Y. Messaddeq. (2019). Detection of Neuromuscular Activity Using New Non-invasive and Flexible Multimaterial fiber Dry-Electrodes. *IEEE Sensors Journal*. 19(23): 11624 – 11633.
Published
Refereed?: Yes, Open Access?: No
11. *U. Côté-Allard, *C. L. Fall, A. Drouin, A. Campeau-Lecours, C. Gosselin, K. Glette, F. Laviolette, and B. Gosselin. (2019). Deep Learning for Electromyographic Hand Gesture Signal Classification by Leveraging Transfer Learning. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 27(4): 760-771.
Published
Refereed?: Yes, Open Access?: No
12. D. St-Onge, *U. Côté-Allard, K. Glette, B. Gosselin and G. Beltrame. (2019). Engaging with Robotic Swarms: Commands from Expressive Motion. *ACM Transactions on Human-Robot Interaction*. 8(2): 11.
Published
Refereed?: Yes, Open Access?: No
13. *S. Tam, M. Boukadoum, A. Campeau-Lecours, B. Gosselin. (2019). A Fully Embedded Adaptive Real-Time Hand Gesture Classifier Leveraging HD-sEMG & Deep Learning. *IEEE Transactions on Biomedical Circuits and Systems*. 14(2): 232-243.
Published
Refereed?: Yes, Open Access?: No
14. *M.N. Khiarak, S. Martel, Y. De Koninck and B. Gosselin. (2019). High-DR CMOS Fluorescence Biosensor With Extended Counting ADC and Noise Cancellation. *IEEE Transactions on Circuits and Systems I: Regular Papers - Selected paper for NEWCAS 2018 Special Issue*. 66(6): 2077 - 2087.
Published
Refereed?: Yes, Open Access?: No

15. *Ulysse Côté-Allard, *Gabriel Gagnon-Turcotte, François Laviolette and Benoit Gosselin. (2019). A low-cost, wireless, 3D printed custom armband for sEMG hand gesture recognition. *Sensors*. 10.3390/s19122811: Open access.
Published
Refereed?: Yes, Open Access?: Yes
16. *G. Gagnon-Turcotte, I. Keramidis, C. Ethier, Y. De Koninck, and B. Gosselin. (2019). A Wireless Electro-Optic Headstage with a 0.13- μm CMOS Custom Integrated DWT Neural Signal Decoder for Closed-Loop Optogenetics. *IEEE Transactions on Biomedical Circuits and Systems*. 13(7): 1036-1051.
Revision Requested
Refereed?: Yes, Open Access?: No
17. A. Campeau-Lecours, *U. Côté-Allard, DS Vu, F. Routhier, B. Gosselin, C. Gosselin. (2019). Intuitive Adaptive Orientation Control for Enhanced Human–Robot Interaction. *IEEE Transactions on Robotics*. 35(2): 509 - 520.
Published
Refereed?: Yes, Open Access?: No
18. *M Rezaei, *E Maghsoudloo, C Bories, Y De Koninck and B Gosselin. (2018). A Low-Power Current-Reuse Analog Front-End for High-Density Neural Recording Implants. *IEEE Transactions on Biomedical Circuits and Systems*. 2(2): 271-280.
Published
Refereed?: Yes, Open Access?: Yes
19. *M.N. Khiarak, K. Sasagawa, T. Tokuda, J. Ohta, S. Martel, Y. De Koninck and B. Gosselin. (2018). An Energy-Efficient CMOS Biophotometry Sensor With Incremental DT-Delta-Sigma ADC Conversion. *IEEE Transactions on Circuits and Systems I: Regular Papers - Selected paper for ISCAS 2018 Special Issue*. NA: Early access.
Published
Refereed?: Yes, Open Access?: No
20. *C. L. Fall, *F. Quevillon, M. Blouin, S. Latour, A. Campeau-Lecours, C. Gosselin, and B. Gosselin. (2018). A Multimodal Adaptive Wireless Control Interface for People with Upper-Body Disabilities. *IEEE Transactions on Biomedical Circuits and Systems (Special Issue on ISCAS 2017)*. 12(3): 564-575.
Published
Refereed?: Yes, Open Access?: No
21. *G. Gagnon-Turcotte, C. Ethier, Y. De Koninck, and B. Gosselin. (2018). A 0.13 μm CMOS SoC for Simultaneous Multichannel Optogenetics and Electrophysiological Brain Recording. *IEEE Journal of Solid-State Circuits - Selected paper for ISSCC 2018 Special Issue*. 53(11): 3087 - 3100.
Published
Refereed?: Yes, Open Access?: No
22. *T. Elfaramawy, *S. Arab, M. Morissette, F. Lellouche and B. Gosselin. (2018). A Wireless Respiratory Monitoring and Coughing Detection Using a Wearable Patch Sensor Network. *IEEE Sensors Journal*. 19: 650-657.
Published
Refereed?: Yes, Open Access?: No
23. *C. Poirier, B. Gosselin and P. Fortier. (2018). DNA Assembly with de Bruijn Graphs Using an FPGA Platform. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. 15: 1003-1009.
Published
Refereed?: Yes, Open Access?: No
24. *M.N. Khiarak, C. Bories, S. Martel, Y. De Koninck and B. Gosselin. (2018). A High-Sensitivity CMOS Biophotometry Sensor With Embedded Continuous-Time Sigma-Delta Modulation. *IEEE Transactions on Biomedical Circuits and Systems (Special Issue on ISCAS 2018)*. 12(3): 495-509.
Published
Refereed?: Yes, Open Access?: No

25. *M. Sylvain, *F. Lehoux, Morency, F. Faucher, *E. Bharucha, F. Raymond, D.M. Tremblay, S. Moineau, M. Allard, J. Corbeil, Y. Messaddeq, and B. Gosselin. (2018). The EcoChip: A Wireless Multi-Sensor Platform for Comprehensive Environmental Monitoring. *IEEE Transactions on Biomedical Circuits and Systems - Selected paper for ISCAS 2018 Special Issue*. 12: 1289-1300.
Published
Refereed?: Yes, Open Access?: No
26. *S.A. Mirbozorgi, *H. Bahrami, M. Sawan, and B. Gosselin. (2017). Analysis and Comparison of Multi-Resonator Wireless Power Transmission Array Topologies. *IEEE Transactions on Power Electronics*.
Revision Requested
Refereed?: Yes
27. *G. Gagnon-Turcotte, Y. LeChasseur, C. Bories, Y. De Koninck, and B. Gosselin. (2017). A Wireless Headstage for Combined Optogenetics and Multichannel Electrophysiological Recording in Freely Behaving Animals. *IEEE Transactions on Biomedical Circuits and Systems*. 11(1): 1-14.
Published
Refereed?: Yes, Open Access?: Yes
28. V. Villette, *M. Levesque, A. Miled, B. Gosselin, L. Topolnik. (2017). Simple platform for chronic imaging of hippocampal activity during spontaneous behaviour in an awake mouse. *Scientific Reports*, doi: 10.1038/srep43388. 7: 43388.
Published
Refereed?: Yes, Open Access?: Yes
29. *E. Ghodsevali, S. Morneau-Gamache, J. Mathault, H. Landari, É. Boisselier, M. Boukadoum, B. Gosselin, A. Miled. (2017). Miniaturized FDDA and CMOS Based Potentiostat for Bio-Applications. *Sensors*. 17(4): 810.
Published
Refereed?: Yes, Open Access?: Yes
30. *CL Fall, *G. Gagnon-Turcotte, *JF Dube, *JS Gagne, *Y Delisle, A Campeau-Lecours, C Gosselin, B Gosselin. (2017). A Wireless sEMG-Based Body-Machine Interface for Assistive Technology Devices. *IEEE Journal of Biomedical and Health Informatics*. 21(4): 967-977.
Published
Refereed?: Yes
31. E. Porter, *H. Bahrami, B. Gosselin, L. A. Rusch, and M. Popovic?. (2016). A Wearable Microwave Antenna Array for Time-Domain Breast Tumor Screening. *IEEE Transactions on Medical Imaging*. 35(6): 1501-1509.
Published
Refereed?: Yes
32. S. Gorgutsa, M. Khalil, *V. Bélanger-Garnier, J. Viens, B. Gosselin, S. LaRochelle, and Y. Messaddeq. (2016). Emissive Performance of Wearable RF Textiles Made from Multi-Material Fibers. *IEEE Transactions on Antennas and Propagation*. 64(6): 2457-2464.
Published
Refereed?: Yes, Open Access?: No
33. *E. Maghsoudloo, *M. Rezaei, M. Sawan, and B. Gosselin. (2016). A High-Speed and Ultra Low-Power Subthreshold Signal Level Shifter. *IEEE Transactions on Circuits and Systems 1: Regular Papers*. 64(5): 1164 - 1172.
Published
Refereed?: Yes, Open Access?: Yes
34. *H. Bahrami, *S.A. Mirbozorgi, B. Gosselin, and L. A. Rusch. (2016). System Level Design of a Full-Duplex Wireless Transceiver for Brain-Machine Interfaces. *IEEE Transactions on Microwave Theory and Techniques*. 64(10): 3332-3341.
Published
Refereed?: Yes

35. *S. A. Ghaffari, W.-O. Caron, M. Loubier, M. Rioux, J. Viens, B. Gosselin, Y. Messaddeq. (2015). A Wireless Multi-sensor Dielectric Impedance Spectroscopy Platform. *Sensors*. 15(9): 23572-23588.
Published
Refereed?: Yes
36. *H. Bahrami, *S.A. Mirbozorgi, L. A. Rusch, and B. Gosselin. (2015). Flexible Polarization-Diverse UWB Antennas for Implantable Neural Recording Systems. *IEEE Transactions on Biomedical Circuits and Systems*. 10(1): 38-48.
Published
Refereed?: Yes
37. *H. Bahrami, E. Porter, A. Santorelli, B. Gosselin, M. Popovic?, and L. A. Rusch. (2015). Flexible Sixteen Antenna Array for Microwave Breast Cancer Detection. *IEEE Transactions on Biomedical Engineering*. 62(10): 2516-2525.
Published
Refereed?: Yes
38. *S. A. Ghaffari, W.-O. Caron, M. Loubier, C.-O. Normandeau, J. Viens, M. Lamhamedi, B. Gosselin, Y. Messaddeq. (2015). Electrochemical Impedance Sensors for Monitoring Trace Amounts of NO₃ in Selected Growing Media. *Sensors*. 15(7): 17715-17727.
Published
Refereed?: Yes, Open Access?: Yes
39. *S.A. Mirbozorgi, *H. Bahrami, M. Sawan, and B. Gosselin. (2015). A Smart Cage with Uniform Wireless Power Distribution in 3D for Enabling Long-Term Experiments with Freely Moving Animals. *IEEE Transactions on Biomedical Circuits and Systems*. 10(2): 424-434.
Published
Refereed?: Yes
40. *S.A. Mirbozorgi, *H. Bahrami, L. Rusch, and B. Gosselin,. (2015). A Single-Chip Full-Duplex High Speed Transceiver for Multi-Site Stimulating and Recording Neural Implants. *IEEE Transactions on Biomedical Circuits and Systems*. 10(3): 643-653.
Published
Refereed?: Yes
41. *H. Bahrami, *S.A. Mirbozorgi, L. A. Rusch, and B. Gosselin. (2015). Biological Channel Modeling and Implantable UWB Antenna Design for Neural Recording Systems. *IEEE Transactions on Biomedical Circuits and Systems*. 62: pp. 88-98.
Published
Refereed?: Yes
42. *G. Gagnon-Turcotte, *A. Avakh, *R. Ameli, *C.-O. Dufresne, Y. LeChasseur, J.-L. Neron, P. Brule Bareil, P. Fortier, C. Bories, Y. De Koninck, and B. Gosselin. (2015). A Wireless Optogenetic Stimulator Headstage with Multichannel Electrophysiological Recording Capability. *Sensors*. 15(9): 22776-22797.
Published
Refereed?: Yes, Open Access?: Yes
43. *S.A. Mirbozorgi, *H. Bahrami, M. Sawan, and B. Gosselin. (2014). A Smart Multicoil Inductively-coupled Array for Wireless Power Transmission. *IEEE Transactions on Industrial Electronics*. 61(11): 6061-6070.
Published
Refereed?: Yes
44. *E. Bharucha, *H. Sepehrian, and B. Gosselin. (2014). A Survey of Neural Front End Amplifiers and Their Requirements toward Practical Neural Interfaces. *Journal of Low Power Electronics and Applications*. 4(4): 268-291.
Published
Refereed?: Yes, Open Access?: Yes

45. S. Gorgutsa, *V. Bélanger-Garnier, B. Ung, J. Viens, B. Gosselin, S. LaRochelle, and Y. Messaddeq. (2014). Novel Wireless-Communicating Textile Devices Made from Multi-Material and Minimally-Invasive Fibers. *Sensors*. 14(10): 19260–19274.
Published
Refereed?: Yes, Open Access?: Yes

Book Chapters

1. *H. Bahrami, L. A. Rusch, and B. Gosselin. (2015). Biological Channel Modeling and Implantable UWB Antenna Design for Neural Recording Systems. S. Carrara, K. Iniewski. *Handbook of Bioelectronics*. : 379-388.
Published, CRC Press
Refereed?: Yes

Conference Publications

1. Ahmed Abuelnasr, Mohamed Ali, Mostafa Amer, Morteza Nabavi, Ahmad Hassan, Benoit Gosselin, Yvon Savaria. (2020). Self-Adjusting Deadtime Generator for High-Efficiency High-Voltage Switched-Mode Power Amplifiers. IEEE International Symposium on Circuits & Systems, Sevilla, Spain
Conference Date: 2020/10
Paper
Accepted
Refereed?: Yes, Invited?: No
2. Mousa Karimi, Mohamed Ali, Morteza Nabavi, Ahmad Hassan, Mostafa Amer, Mohamad Sawan, Benoit Gosselin. (2020). A Versatile Non-Overlapping Signal Generator for Efficient Power-Converters Operation. IEEE International Symposium on Circuits & Systems, Spain
Conference Date: 2020/10
Paper
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Refereed?: Yes, Invited?: No
3. Guillaume Bilodeau, Gabriel Gagnon-Turcotte, Léonard L. Gagnon, Christian Ethier, Igor Timofeev, Benoit Gosselin. (2020). A Wireless Electro-Optic Headstage with Digital Signal Processing and Data Compression for Multimodal Electrophysiology and Optogenetic Stimulation. IEEE International Symposium on Circuits & Systems, Sevilla, Spain
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Paper
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4. Vahid Khojasteh Lazarjan, Seyedeh Nazila Hosseini, Mehdi Noormohammadi Khiarak, Benoit Gosselin. (2020). CMOS Optoelectronic Sensor with Ping-pong Auto-zeroed Transimpedance Amplifier. IEEE 63rd International Midwest Symposium on Circuits and Systems (MWSCAS), Springfield, MA, United States (17-20)
Conference Date: 2020/8
Paper
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5. Partha Sarati Das, Gabriel Gagnon-Turcotte, Karim Ouazaa, Karim Bouzid, Seyedeh Nazila Hosseini, Eric Bharucha, Denise Tremblay, Sylvain Moineau, Younès Messaddeq, Jacques Corbeil, Benoit Gosselin. (2020). The EcoChip 2: An Autonomous Sensor Platform for Multimodal Bio-environmental Monitoring of the Northern Habitat. 42nd Annual International Conferences of the IEEE Engineering in Medicine and Biology Society in conjunction with the 43rd Annual Conference of the Canadian Medical and Biological Engineering Society, Montreal, Canada
Conference Date: 2020/7
Paper
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Refereed?: Yes, Invited?: No
6. Simon Tam, Mounir Boukadoum, Alexandre Campeau-Lecours, Benoit Gosselin. (2020). Forearm High-Density Electromyography Data Visualization and Classification with Machine Learning for Hand Prosthesis Control. Annual International Conferences of the IEEE Engineering in Medicine and Biology Society, Montreal, Canada
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Paper
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Refereed?: Yes, Invited?: No
7. Mohamad Feshki, Mohamad Sadegh Monfared, Benoit Gosselin. (2020). Development of a Dual-Wavelength Isosbestic Wireless Fiber Photometry Platform for Live Animals Studies. Annual International Conferences of the IEEE Engineering in Medicine and Biology Society, Montreal, Canada
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Conference Date: 2020/6
Paper
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Refereed?: Yes, Invited?: Yes
10. Mousa Karimi, Mohamed Ali, Ahmad Hassan, Guillaume Weber-boisvert, Ahmed Abuelnasr, Mohamad Sawan, Benoit Gosselin. (2020). A 1.99-ns 0.5-pJ Wide Frequency Range Level Shifter With Closed-Loop Negative Feedback. IEEE International NEWCAS Conference, Montreal, Canada
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11. Mahin Esmailzadeh, Mohamed Ali, Ahmad Hassan, Morteza Nabavi, Benoit Gosselin, Mohamad Sawan. (2020). A tunable CMOS thyristor-based pulse generator for integrated sensor interface applications. IEEE International Symposium on Circuits and Systems (ISCAS), Sevilla, Spain (1-5)
Conference Date: 2020/5
Paper
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Conference Date: 2019/7
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15. *Ulysse Côté-Allard, François Laviolette, Benoit Gosselin. (2018). Transfer Learning for Electromyographic Hand Gesture Signal Classification. IEEE. IEEE Life Sciences Conference 2018, Montreal, Canada
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Poster
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16. *Gabriel Gagnon-Turcotte, *Cheikh Latyr Fall, *Quentin Mascret, Mathieu Biemann, Laurent Bouyer, Benoit Gosselin. (2018). A Multichannel Wireless sEMG Sensor Endowing a 0.13 μm CMOS Mixed-Signal SoC. IEEE. IEEE Life Sciences Conference 2018, Montreal, Canada (1-4)
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18. *Mehdi Noormohammadi Khiarak, Sylvain Martel, Yves De Koninck, Benoit Gosselin. (2018). Wireless Optoelectronic Fiber Photometry Headstage for Deep Brain Structures Monitoring. IEEE. IEEE Life Sciences Conference 2018, Montreal, Canada (9-12)
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19. *François Nougrou, Alexandre Campeau-Lecours, Daniel Massicotte, Benoit Gosselin. (2018). Muscle Activity Distribution Features Extracted from HD sEMG to Perform Forearm Pattern Recognition. IEEE. IEEE Life Sciences Conference 2018, Montreal, Canada (275-278)
Conference Date: 2018/10
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20. *Cheikh Latyr Fall, Mourane Roudjane, *Sanaz Ghafouri, *Quentin Mascret, Mathieu Biemann, *Simon Tam, Jean-Sébastien Roy, Younès Messaddeq, Benoit Gosselin. (2018). Non-Invasive and Flexible Electrodes Based on Multimaterial Fiber for sEMG Signal Detection. IEEE. IEEE Life Sciences Conference 2018, Montreal, Canada (179-182)
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21. *C. L. Fall, A. Campeau-Lecours, C. Gosselin, B. Gosselin. (2018). Evaluation of a Wearable and Wireless Human-Computer Interface Combining Head Motion and sEMG for People with Upper-Body Disabilities. IEEE. IEEE Life Sciences Conference (LSC), Montreal, Canada
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Refereed?: Yes, Invited?: No
24. *R. Crepin, *C.L. Fall, *Q. Mascret, C. Gosselin, A. Campeau-Lecours and B. Gosselin. (2018). Real-time hand motion recognition using sEMG patterns classification. IEEE. the 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2018), (2655-2658)
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25. *T. M. Robitaille, *C. L. Fall, A. C.-Lecours, C. Gosselin, B. Gosselin. (2018). Real-Time Control of an Assistive Robotic Arm using a Wireless Finger Motion Sensor. the 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2018), Honolulu,
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27. C. L. Fall, A. Campeau-Lecours, C. Gosselin, B. Gosselin. (2018). Evaluation of a Wearable and Wireless Human-Computer Interface Combining Head Motion and sEMG for People with Upper-Body Disabilities. IEEE. IEEE International New Circuits and Systems Conference (NEWCAS 2018), (287-290)
Conference Date: 2018/6
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28. M.N. Khiarak, K. Sasagawa, T. Tokuda, J. Ohta, S. Martel, Y. De Koninck and B. Gosselin. (2018). A 17-bit 104-dB-DR High-Precision Low-Power CMOS Fluorescence Biosensor With Extended Counting ADC and Noise Cancellation. IEEE. IEEE International New Circuits and Systems Conference (NEWCAS 2018), (100-103)
Conference Date: 2018/6
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Refereed?: Yes, Invited?: Yes
29. *E. Maghsoudloo, *G. Gagnon-Turcotte, *Z. Rezaei and B. Gosselin. (2018). A Smart Neuroscience Platform with Wireless Power Transmission for Simultaneous Optogenetics and Electrophysiological Recording. 2018 IEEE International Symposium on Circuits and Systems, (1-5)
Conference Date: 2018/5
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Refereed?: Yes, Invited?: No
30. *M. Sylvain, *F. Lehoux, Morency, F. Faucher, *E. Bharucha, F. Raymond, D.M. Tremblay, S. Moineau, M. Allard, J. Corbeil, Y. Messaddeq, and B. Gosselin. (2018). The EcoChip: A Wireless Multi-Sensor Platform for Comprehensive Environmental Monitoring. 2018 IEEE International Symposium on Circuits and Systems, (1-5)
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31. *M.N. Khiarak, K. Sasagawa and T. Tokuda, J. Ohta, S. Martel, Y. De Koninck and B. Gosselin. (2018). An Energy-Efficient CMOS Biophotometry Sensor With Incremental DT-Delta-Sigma ADC Conversion. 2018 IEEE International Symposium on Circuits and Systems, (1-4)
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32. M. Desjardins, M. Roudjane, Y. Ledemi, G. Gagnon-Turcotte, E. Maghsoudloo, G. Fillion, B. Gosselin and Y. Messaddeq. (2018). Development of electro-conductive silver phosphate-based glass optrodes for in vivo optogenetics. Proc. SPIE 10482, Optogenetics and Optical Manipulation 2018, (104820W)
Conference Date: 2018/2
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Refereed?: Yes, Invited?: No
33. *Gabriel Gagnon-Turcotte, Christian Ethier, Yves De Koninck, Benoit Gosselin. (2018). A 0.13- μm CMOS SoC for Simultaneous Multichannel Optogenetics and Electrophysiological Brain Recording. 2018 IEEE International Solid-State Circuits Conference, (466-468)
Conference Date: 2018/2
Paper
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Refereed?: Yes, Invited?: No
34. *Ulysse Côté Allard, Gabriel Dubé, Richard Khoury, Luc Lamontagne, Benoit Gosselin, François Laviolette. (2017). Time Adaptive Dual Particle Swarm Optimization. 2017 IEEE Congress on Evolutionary Computation (CEC), (2534-2543)
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35. *T. Elfaramawy, *C. Latyr Fall, M. Morissette, F. Lellouche and B. Gosselin. (2017). Wireless Respiratory Monitoring and Coughing Detection Using a Wearable Patch Sensor Network. 15th IEEE International New Circuits and Systems Conference (NEWCAS), Strasbourg, France (197-200)
Conference Date: 2017/6
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Refereed?: Yes, Invited?: No
36. *M.N. Khirak, K. Sasagawa, T. Tokuda, J. Ohta, S. Martel, Y. De Koninck and B. Gosselin. (2017). A High-Precision CMOS Biophotometry Sensor With Noise Cancellation and Two-Step A/D Conversion. 15th IEEE International New Circuits and Systems Conference (NEWCAS), Strasbourg, France (293-296)
Conference Date: 2017/6
Paper
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Refereed?: Yes, Invited?: No
37. *M. Rezaei, *E. Maghsoudloo, C. Bories, Y. De Koninck and B. Gosselin. (2017). A Fully Implantable Multichip Neural Interface with a New Scalable Current-Reuse Front-End. 15th IEEE International New Circuits and Systems Conference (NEWCAS), Strasbourg, France (365-368)
Conference Date: 2017/6
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Refereed?: Yes, Invited?: Yes
38. *G. Gagnon-Turcotte, *E. Maghsoudloo, Y. Messaddeq, Y. De Koninck and B. Gosselin. (2017). A Wireless Photostimulator for Optogenetics with Live Animals. 15th IEEE International New Circuits and Systems Conference (NEWCAS), Strasbourg, France (193-196)
Conference Date: 2017/6
Paper
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39. Dinh-Son Vu, *Ulysse Côté Allard, Clément Gosselin, François Routhier, Benoit Gosselin, Alexandre Campeau-Lecours. (2017). Intuitive adaptive orientation control of assistive robots for people living with upper limb disabilities. 2017 International Conference on Rehabilitation Robotics (ICORR), (795-800)
Conference Date: 2017/5
Paper
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Refereed?: Yes, Invited?: No
40. *Leonard L. Gagnon, *Gabriel Gagnon-Turcotte, Aude Popek, Aurelien Chatelier, Mohamed Chahine and Benoit Gosselin. (2017). A Wireless System for Combined Heart Optogenetics and Electrocardiography Recording. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States (1-4)
Conference Date: 2017/5
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41. *G. Gagnon-Turcotte, *L. L. Gagnon, *G. Bilodeau, and B. Gosselin. (2017). Wireless Brain Computer Interfaces For Synchronized Optogenetics and Electrophysiology. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States (1-4)
Conference Date: 2017/5
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42. *C. L. Fall, *F. Quevillon, A. Campeau-Lecours, S. Latour, M. Blouin, C. Gosselin, B. Gosselin. (2017). A Multimodal Adaptive Wireless Control Interface for People with Upper-Body Disabilities. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States (1-4)
Conference Date: 2017/5
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Refereed?: Yes, Invited?: No
43. *Mehdi Noormohammadi Khirak, Sylvain Martel, Yves De Koninck and Benoit Gosselin. (2017). A High-Sensitivity CMOS Biophotometry Sensor With Embedded Continuous-Time Sigma-Delta Modulation. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States (1-4)
Conference Date: 2017/5
Paper
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44. *E. Maghsoudloo, *M. Rezaei, and B. Gosselin. (2017). A Wirelessly Powered High-Speed Transceiver for High-Density Bidirectional Neural Interfaces. IEEE International Symposium on Circuits and Systems (ISCAS'17), Baltimore, United States (1-4)
Conference Date: 2017/5
Paper
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Refereed?: Yes, Invited?: Yes
45. *Ulysse Côté-Allard, *Cheikh Latyr Fall, Alexandre Campeau-Lecours, Clément Gosselin, François Laviolette and Benoit Gosselin. (2017). Transfer Learning for sEMG Hand Gestures Recognition Using Convolutional Neural Network. 2017 IEEE International Conference on Systems, Man, and Cybernetics, (1663-1668)
Conference Date: 2017/4
Paper
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Refereed?: Yes, Invited?: No

46. Ulysse Côté-Allard, David St-Onge, Philippe Giguere, François Laviolette, Benoit Gosselin. (2017). Towards the use of consumer-grade electromyographic armbands for interactive, artistic robotics performances. 26th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), 2017, (1030-1036)
Conference Date: 2017/4
Paper
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Refereed?: Yes, Invited?: No
47. *T. Elfaramawy, *M. Rezaei, M. Morissette, F. Lellouche and B. Gosselin. (2016). Design of a Tunable Low Pass Analog Filter Using Linearized Pseudo-resistors. The IEEE ICECS'16 International Conference, Monaco, Monaco (221-224)
Conference Date: 2016/12
Paper
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Refereed?: Yes, Invited?: No
48. *M. N. Khiarak, S. Martel, Y. De Koninck, and B. Gosselin. (2016). A CMOS Lock-in-Amplifier with Semi-Digital Automatic Phase Tuning. The IEEE Biomedical Circuits and Systems Conference (BioCAS'16), Shanghai, China (300-303)
Conference Date: 2016/10
Paper
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Refereed?: Yes, Invited?: No
49. *U. Côté-Allard, F. Nougrou, *C. Latyr Fall, P. Giguère, C. Gosselin, F. Laviolette and B. Gosselin. (2016). A convolutional neural network for robotic arm guidance using sEMG based frequency-features. The 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'16), Daejeon, Korea, Republic of (2464-2470)
Conference Date: 2016/10
Paper
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Refereed?: Yes, Invited?: No
50. M. Rezaei, H. Bahrami, A. Mirbozorgi, Leslie A. Rusch, B. Gosselin. (2016). A Short-Impulse UWB BPSK Transmitter for Large-Scale Neural Recording Implants. The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16), Orlando, United States (6315-6318)
Conference Date: 2016/8
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Refereed?: Yes, Invited?: Yes
51. *M. Rezaei, *E. Maghsoudloo, M. Sawan, and B. Gosselin. (2016). A 110-nW in-Channel Sigma-Delta Converter for Large-Scale Neural Recording Implants. The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16), Orlando, United States (5741-5744)
Conference Date: 2016/8
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Refereed?: Yes, Invited?: Yes
52. *A. Avakh Kisomi, H. Landari, M. Boukadoum, A. Miled, B. Gosselin. (2016). Towards a Multi-Wavelength Spectroscopy Platform for Blood Characterization and Analysis. The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16), Orlando, United States (2994-2997)
Conference Date: 2016/8
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53. *E. Ghodsevali, H. Landari, M. Boukadoum, B. Gosselin, Amine Miled. (2016). A Wide Range and High Sensitivity four-channel Compact Electrochemical Biosensor for Neurotransmitter Detection on a Microfluidic Platform. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16), Orlando, United States (5753-5756)
Conference Date: 2016/8
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Conference Date: 2016/8
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Refereed?: Yes, Invited?: No
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Conference Date: 2016/6
Paper
Published
Refereed?: Yes, Invited?: Yes
56. *E. Ghodsevali, M. Boukadoum, B. Gosselin, A. Miled. (2016). Low-Power and Low-Noise Fully Differential Difference Amplifier for Sub-Nanoampere On-Chip Potentiostat. IEEE NEWCAS'16 International Conference, Vancouver, Canada (1-4)
Conference Date: 2016/6
Paper
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Refereed?: Yes, Invited?: Yes
57. *G. Gagnon-Turcotte, Y. LeChasseur, C. Bories, Y. De Koninck and B. Gosselin. (2016). A Low-Power Adaptive Spike Detector for In-Vivo Behavioural Neuroscience Experiments. IEEE International Symposium on Circuits and Systems (ISCAS'16), Montreal, Canada (1098-1101)
Conference Date: 2016/5
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58. *A. Avakh Kisomi, A. Miled, M. Boukadoum, F. Lellouche, M. Morissette, B. Gosselin. (2016). A Novel Wireless Ring-shaped Multi-site Pulse Oximeter. IEEE International Symposium on Circuits and Systems (ISCAS'16), Montreal, Canada (2451-2454)
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59. *E. Maghsoudloo, *M. Rezaei, M. Sawan, and B. Gosselin. (2016). A New Charge Balancing Scheme for Electrical Microstimulators Based on Modulated Anodic Stimulation Pulse Width. IEEE International Symposium on Circuits and Systems (ISCAS'16), Montreal, Canada (2443-2446)
Conference Date: 2016/5
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60. Erwan L'Her, Pierre-Alexandre Bouchard, Mathieu Delorme, *Tamer Elfaramawy, Martin Morissette, Benoit Gosselin, F Lellouche. (2016). Automated Oxygen Titration During High Flow Oxygen Therapy. Evaluation Of The Feasibility In Healthy Subjects. American Thoracic Society International Conference, Washington DC, United States (A5312-A5312)
Conference Date: 2016/5
Paper
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Refereed?: Yes, Invited?: No
61. A. Hassan, B. Gosselin, and M. Sawan. (2015). Ultra-Low Power CMOS Voltage Reference for High Temperature Applications Up to 300°C. IEEE Intl Conference on Electronics, Circuits, & Systems (ICECS'15), Cairo, Egypt (77-80)
Conference Date: 2015/12
Paper
Published
Refereed?: Yes, Invited?: Yes
62. S. Gorgutsa, M. Khalil, *V. Bélanger-Garnier, J. Viens, B. Gosselin, S. Laroche, and Y. Messaddeq. (2015). Novel Wearable RF Textile-Integrated Antennas Made from Multi-Material Fibers. Optical Society of America. Workshop on Specialty Optical Fibers and their Applications, Hong-Kong, (WW3A. 4)
Conference Date: 2015/11
Paper
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Refereed?: Yes, Invited?: No
63. B. Gosselin. (2015). A Wireless Headstage for Combined Optogenetics and Multichannel Electrophysiological Recording in Freely Behaving Animals. 4th International Frontiers in Neurophotonics Symposium, Quebec, Canada
Conference Date: 2015/10
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64. *E. Ghodsevali, B. Gosselin, M. Boukadoum, A. Miled. (2015). High Accuracy and Sensitivity Differential Potentiostat with Amplifier-Based Error Cancellation Feedback Loop. The IEEE Biomedical Circuits and Systems Conference (BioCAS'15), Atlanta, United States (1-4)
Conference Date: 2015/10
Paper
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Refereed?: Yes, Invited?: No
65. F. Lellouche, Erwan L'Her, P.-A. Bouchard, M. Delorme, *T. Elfaramawy, B. Gosselin. (2015). New device to support patients with acute respiratory distress: high flow, nebulization and oxygen therapy with automated FiO2 titration. 28th Annual Congress of the European Society of Intensive Care Medicine (ESICM'15), Berlin, Germany (1-2)
Conference Date: 2015/10
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66. *G. Gagnon-Turcotte, Y. LeChasseur, C. Bories, Y. De Koninck, and B. Gosselin. (2015). A Wireless Optogenetic Headstage with Multichannel Neural Signal Compression. The IEEE Biomedical Circuits and Systems Conference (BioCAS'15), Atlanta, United States (1-4)
Conference Date: 2015/10
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67. *H. Bahrami, *S.A. Mirbozorgi, L. Rusch, and B. Gosselin. (2015). Integrated UWB Transmitter and Antenna Design for Interfacing High-Density Brain Microprobes. IEEE International Conference on Ubiquitous Wireless Broadband (ICUWB'15), Montreal, Canada (1-5)
Conference Date: 2015/10
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Refereed?: Yes, Invited?: Yes
68. A. Hassan, B. Gosselin, and M. Sawan. (2015). Spatial Carrier Position Modulation Based Multichannel Capacitive Link for Bioelectronic Implants. The IEEE Biomedical Circuits and Systems Conference (BioCAS'15), Atlanta, United States (1-4)
Conference Date: 2015/10
Paper
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Refereed?: Yes, Invited?: No
69. *S.A. Mirbozorgi, *H. Bahrami, M. Sawan, L. Rusch, and B. Gosselin. (2015). A Full-Duplex Wireless Integrated Transceiver for Implant-to-Air Data Communications. IEEE Custom Integrated Circuits Conference (CICC'15), San Jose, United States (1-4)
Conference Date: 2015/9
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Refereed?: Yes, Invited?: No
70. *C. Poirier, B. Gosselin, and P. Fortier. (2015). DNA Assembly with de Bruijn Graphs on FPGA. The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15), Milano, Italy (6489-6492)
Conference Date: 2015/8
Paper
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Refereed?: Yes, Invited?: No
71. *C.L. Fall, *P. Turgeon, V. Maheu, A. Lecours, M. Boukadoum, S. Roy, D. Massicotte, C. Gosselin, and B. Gosselin. (2015). Intuitive Wireless Control of a Robotic Arm for Upper Body Disabled People. The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15), Milano, Italy (4399-4402)
Conference Date: 2015/8
Paper
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Refereed?: Yes, Invited?: No
72. *G. Gagnon-Turcotte, M. Sawan, and B. Gosselin. (2015). Low-Power Adaptive Spike Detector Based on a Sigma-Delta Control Loop. The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15), Milano, Italy (2167-2170)
Conference Date: 2015/8
Paper
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Refereed?: Yes, Invited?: Yes
73. *G. Gagnon-Turcotte, *C.-O. Dufresne Camaro, and B. Gosselin. (2015). Multichannel Spike Detector With an Adaptive Threshold Based On a Sigma-Delta Control Loop. The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15), Milano, Italy (7123-7126)
Conference Date: 2015/8
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Refereed?: Yes, Invited?: Yes

74. S. Gorgutsa, M. Khalil, *V. Bélanger-Garnier, J. Viens, B. Gosselin, and S. LaRochelle, and Y. Messaddeq. (2015). Emissive Performance of Wearable RF Textiles Made from Unobtrusive Multi-Material Fibers. The 12th International Conference on Wearable and Implantable Body Sensor Networks (BSN'15), Boston, United States
 Conference Date: 2015/6
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 Refereed?: Yes, Invited?: No
75. *M. Rezaei, *E. Maghsoudloo, M. Sawan, and B. Gosselin. (2015). A Novel Multichannel Analog-to-Time Converter Based on a Multiplexed Sigma Delta Converter. The IEEE NEWCAS'15 International Conference, Grenoble, France (1-4)
 Conference Date: 2015/6
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76. *E. Maghsoudloo, *M. Rezaei, M. Sawan, and B. Gosselin. (2015). A Power-Efficient Wide-Range Level-Converter. The IEEE NEWCAS'15 International Conference, Grenoble, France (1-4)
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77. *G. Gagnon-Turcotte, *C.-O. Dufresne Camaro, *A. Avakh, *R. Ameli, and B. Gosselin. (2015). A Wireless Multichannel Optogenetic Headstage With On-The-Fly Spike Detection. IEEE International Symposium on Circuits and Systems (ISCAS'15), Lisbon, Portugal (1758–1761)
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78. *G. Gagnon-Turcotte, *C.-O. Dufresne Camaro, and B. Gosselin. (2015). Comparison Of Low-Power Biopotential Processors For On-The-Fly Spike Detection. IEEE International Symposium on Circuits and Systems (ISCAS'15), Lisbon, Portugal (802–805)
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79. *C.L. Fall, *P. Turgeon, A. Lecours, V. Maheu, M. Boukadoum, S. Roy, D. Massicotte, C. Gosselin, B. Gosselin. (2015). A Wireless and Intuitive Controller for upper body disabled people. 2015 ReSMiQ Symposium, Rimouski, Canada
 Conference Date: 2015/5
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 Refereed?: Yes, Invited?: No
80. J. Mathault, B. Gosselin, and A. Miled. (2015). 4V microfluidic platform for biological manipulation with glycine, glutamate, GABA and acetylcholine. IEEE 28th Canadian Conference on Electrical and Computer Engineering (CCECE'15),
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81. *V. Belanger-Garnier, S. Gorgutsa, B. Ung, M. Blais-Roberge, J. Viens, B. Gosselin, S. LaRochelle, Y. Messaddeq. (2014). Novel multi-material fibers for wireless communication textile devices. Antennas and Propagation Conference (LAPC'14), Loughborough, United Kingdom (368-371)
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Refereed?: Yes, Invited?: No
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84. *S.A. Mirbozorgi, M. Sawan, and B. Gosselin. (2014). A smart multi-receiver power transmission system for long-term biological monitoring. The IEEE Biomedical Circuits and Systems Conference, Lausanne, Switzerland (412-415)
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85. *G. Gagnon-Turcotte, *R. Ameli, *A. Avakh Kisomi, *C.-O. Dufresne, B. Gosselin. (2014). A Multi-channel Optogenetic Wireless Headstage With on-the-fly Spike Detection. ReSMiQ Innovation Day, Montreal, Canada
Conference Date: 2014/9
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87. M. El Khaled, *H. Bahrami, P. Fortier, B. Gosselin and L.A. Rusch. (2014). Capacity of UWB Wireless Channel for Neural Recording Systems. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, United States (3965-3968)
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88. S. B. Lee, B. Lee, B. Gosselin, and M. Ghovanloo. (2014). A Dual Slope Charge Sampling Analog Front-End for a Wireless Neural Recording System. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, United States (3134-3137)
Conference Date: 2014/8
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89. *V. Bélanger-Garnier, S. Gorgutsa, B. Ung, J. Viens, B. Gosselin, S. LaRoche, and Y. Messaddeq. (2014). Novel wireless-communicating textile devices made from multi-material and minimally-invasive fibers. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, United States (6278-6281)
Conference Date: 2014/8
Paper
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90. *H. Sepehrian, and B. Gosselin. (2014). A Low-power Current-Reuse Dual-Band Analog Front-End for Multi-Channel Neural Signal Recording. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, United States (5284-5287)
Conference Date: 2014/8
Paper
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Refereed?: Yes, Invited?: Yes
91. *H. Bahrami, E. Porter, A. Santorelli, B. Gosselin, M. Popovic, L. Rusch. (2014). Flexible sixteen monopole antenna array for microwave breast cancer detection. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14), Chicago, United States (3775-3778)
Conference Date: 2014/8
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92. *H. Bahrami, *S.A. Mirbozorgi, L.A. Rusch, and B. Gosselin. (2014). BER Performance of Implant to Air High-Speed UWB Data Communications for Neural Recording Systems. The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, United States (3961-3964)
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93. *S.A. Mirbozorgi, *H. Bahrami, L.A. Rusch, B. Gosselin. (2014). A Low-Power 2.4-GHz Receiver for Wireless Implantable Neural Stimulators. IEEE International Symposium on Circuits and Systems, Melbourne, Australia (1082-1085)
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Refereed?: Yes, Invited?: No
94. *H. Sepehrian, *S.A. Mirbozorgi, and B. Gosselin. (2014). A Low-Power Current-Reuse Analog Front-End for Multi-Channel Neural Signal Recording. The 12th IEEE North-East Workshop on Circuits and Systems, Trois-Rivières, Canada (440-443)
Conference Date: 2014/6
Paper
Published
Refereed?: Yes, Invited?: Yes

Intellectual Property

Patents

1. Pulse processing device and method of associating pulse-related wavelet coefficients to a corresponding reference pulse shape. United States. 2020/07/21.
Patent Status: Pending
Inventors: Gabriel Gagnon-Turcotte, Benoit Gosselin
2. System for acquiring bio-signal, fiber sensor therefor, and method of generating composite indication of muscle fatigue. United States. USPTO 63/010,868. 2020/04/16.
Patent Status: Pending
Inventors: Younès Messaddeq, Benoit Gosselin, Laurent Bouyer, Mourad Roudjane, Gabriel Gagnon-Turcotte, Nicolas Gauthier, Mathieu Bielman
This application relates to wearable technology, and more specifically to the acquisition of signals indicative of movement and/or muscular activity from the body of a mammal, and in particular from humans.
3. New autonomous sensor platform intended for culturing and monitoring the growth of microorganisms and their environmental conditions in-situ. United States. USPTO 16/402,277. 2019/05/16.
Patent Status: Pending
Inventors: Benoit Gosselin, Éric Bharucha, Jacques Corbeil, Younès Messaddeq
In an aspect, there is described a cellular behaviour monitoring device for monitoring changes in behaviour of cells contained in a sample. It is intended that monitoring cellular behaviour can include the monitoring of, but not limited to, cellular growth, cellular growth stagnation and/or cellular death pertaining to the sample.
4. System for delivering variable gas air/oxygen mixture rates with respect to measured physiological parameters. United States. USPTO 62/237.252. 2015/10/05.
Patent Status: Pending
Inventors: Benoit Gosselin, François Lellouche, Nguyen, Quang-Thang and Herwan L'Her
This novel device allows to continuously adjusting FiO₂ with high flows of air/oxygen based on an adaptive approach that titrates oxygen flow delivered to patients with the aim to maintain a constant oxygenation.
5. System and method for detecting spikes in noisy signals. United States. USPTO 62/209.103. 2015/08/24.
Patent Status: Pending
Inventors: Gabriel Gagnon-Turcotte and Benoit Gosselin
According to an aspect, a method is provided for automatically determining a threshold for spike detection in an electrophysiological signal. The method includes the steps of estimating a standard deviation of noise in the electrophysiological signal using a Sigma-delta control loop, and automatically adjusting the threshold according to the estimated standard deviation.
6. Smart Multicoil Inductively-coupled Array for Wireless Power Transmission. United States. USPTO 14/899,949. 2015/12/18.
Patent Status: Granted/Issued
Year Issued: 2019
Inventors: Abdollah Mirbozorgi, Mohamad Sawan and Benoit Gosselin
This invention consists in a novel resonance-based multicoil array structure to wirelessly charge or power up apparatus, like smart phones, computer mice, smart animal research systems, or implanted medical devices. The proposed array consists of a novel multicoil inductive link, which primary resonator is made of several identical coil elements connected in parallel, and arranged in an array. Such a structure presents several key features compared to previous inductive coil arrays that benefit the design and the implementation of better power transmission surfaces. The proposed approach 1) can deliver power with superior efficiency over longer separation distances, 2) can naturally track the receiver position and localize transmitted power through nearby coil array elements without the need for complex control and detection circuitry, and 3) can either accommodate short or long range power transmission applications, simply by slightly modifying the receiver topology.

Disclosures

1. Non-invasive and Flexible Electrodes Based on Multimaterial Fiber for biosignal Detection
Disclosed
Filing Date: 2018/12/14
2. New autonomous sensor platform intended for culturing and monitoring the growth of microorganisms and their environmental conditions in-situ.
Disclosed
Filing Date: 2018/07/17
3. A ring shaped pulse oximeter with practical optimization
Disclosed
Filing Date: 2015/08/21
Confidential
4. A high-precision bio-electronic interface based on a Sigma-Delta modulator with operators in the loop
Disclosed
Filing Date: 2015/05/01
Confidential
5. Appareil délivrant des débits de mélange gazeux air/oxygène variables et des débits variables en fonction de paramètres physiologiques mesurés
Disclosed
Filing Date: 2015/04/27
6. High dynamic range wavelet data compression
Disclosed
Filing Date: 2015/04/01
Confidential
7. Seuillage adaptatif avec boucle de retroaction
Disclosed
Date Issued: 2015/4
Confidential