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Polystim Neurotechnologies Research Laboratory

RESEARCH

Research interests

- Design and test of mixed-signal circuits and systems (analog, digital and RF)
- Signal and image processing (analog and digital)
- Medical devices (implantable sensors and microstimulators, ultrasound systems, optical devices)
- Integrated cicuits and reprogrammable systems

Research unit(s)

- LASEM, Responsible
- Neurotechnology Laboratory (Polystim), Responsible
- Integrated mixed signal biosystems (Biostim), Director
- English version not available, Director
- Biomedical Science and Technologies Research Centre (GRSTB), member
- Microelectronics and Microsystems Research Group (GR2M), member

NSERC subjects

- 1900 BIOMEDICAL ENGINEERING
- 1901 Biomedical technology
- 2504 Integrated circuits
- 2506 Electronic circuits and devices
- 2513 Data communications
- 2518 Instrumentation and measurements
- 2519 Microelectronics
- 2523 Semiconductor fabrication and packaging
- 2524 Ultrasonic / ferroelectric devices and applications
- 2525 Wireless communication systems

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- Research
- Supervision
- **Publications**
- Laureates

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PUBLICATIONS

The bibliographic data is imported from Polytechnique Montréal's Directory of Publications. The bibliography below includes a majority of publications written by a professor/researcher affiliated with Polytechnique, since 1994 (if applicable). Publications before the professor's/researcher's affiliation with Polytechnique or before 1994 may also be included in this list. You may also consult the Directory of Scientific & Technical Publications for more information about the document type coverage.

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2 M. Taherzadeh-Sani, S.M. Hussain Hussaini, H. Rezaee-Dehsorkh, F. Nabki, M. Sawan (2017). A 170-dBO CMOS TIA With 52-pA Input-Referred Noise and 1-MHz Bandwidth for Very Low Current Sensing. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, 25(5), p. 1756-1766. DOI : 10.1109/TVLSI.2017.2654452

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12 S.A. Mirbozorgi, H. Bahrami, M. Sawan, L.A. Rusch, B. Gosselin (2016). 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), p. 643-953. DOI : 10.1109/TBCAS.2015.2466592

13 S.A. Mirbozorgi, H. Bahrami, M. Sawan, B. Gosselin (2016). 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), p. 424-434. DOI : 10.1109/TBCAS.2015.2414276

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