



Annual Report of the Biomedical and Life Science Circuits and Systems (BioCAS) Technical Committee 2014/2015

Compiled by Kea-Tiong (Samuel) Tang

1) Introduction

The Biomedical and Life Science Circuits and Systems (BioCAS) Technical Committee of the IEEE CAS society can look back on a very active year. The number of committee members has increased to 112 members. They have been involved in a large number of various activities advancing and promoting the field of BioCAS, as will be detailed in the following sections. The two major activities, the BioCAS conference and the Transactions on BioCAS are now well established and continue to attract great quality papers.

2) IEEE ISCAS 2015, Lisbon, Portugal

The biomedical circuits and system track had 104 submissions, which was more than 10% drop from previous year submissions (2014: 120, 2013: 122, 2012: 163, 2011: 74, 2010: 85). It ranks No. 5 among the 15 tracks in ISCAS after Analog Signal Processing, CAS for Communications, Digital Signal Processing, and VLSI systems architectures and applications. 35 members from the BIOCAS TC helped to serve as RCMs and did a phenomenal job in providing efficient, high quality and timely reviews. A total of 424 reviewers were assigned, with an average of 4.1 reviewers per paper. The average review per paper submitted was 3.7 3.6 . The result of the review process was an acceptance of 50 papers out of 104 submitted papers. The acceptance rate is 48%, which is better than the 51% acceptance rate of the ISCAS. The papers were organized in 7 lecture sessions, and 3 poster sessions. The TC members also organized three special sessions. 20 members from the TC volunteered to serve as session chairs for these sessions. Detailed statistics on the submission among different sub-tracks are listed below.

Track ID	Name	Submission	Acceptance
2.0	Biomedical and Life-Science Circuits, Systems and Applications	0	0
2.1	Wireless, Wearable, and Implantable/Injectable Technology	18	9
2.2	Medical Information- and Telecare Systems	0	0
2.3	Harvesting/Scavenging Energy for Biomedical Devices	7	4
2.4	Biometrics, Biomedical Signal Processing and Bioimaging Technology	15	7
2.5	Integrated biomedical systems, BioMEMS, Bio-sensors/actuators and labon-chip	13	7
2.6	Bio-inspired and Biomolecular Circuits and Systems	2	1
2.7	Circuits for Biomedical Systems	40	19
2.8	Biochip for Life & Health Science Applications	9	3
Total		104	50

The track chair (Sonkusale) would like to thank all the authors, reviewers, RCM, session chairs for their time and effort spent to enhance the BIOCAS activities and to help make the track a success at ISCAS.

As is customary, an award sub-committee was formed to vote on the best paper award for the BIOCAS track at ISCAS. This year (2015) winner was the paper titled "A Hybrid OFDM Body Coupled Communication Transceiver for Binaural Hearing Aids in 65nm CMOS", authored by Wala Saadeh, Yonatan Kifle and Jerald Yoo from Masdar Institute in Abu Dhabi, UAE. This award was given out at the IEEE BIOCAS TC meeting in ISCAS.

3) IEEE Biomedical Circuits and Systems 2014 Conference, Lausanne, Switzerland.

This year, the international IEEE conference on circuits in systems for biomedical applications, BioCAS 2014, has been organized by Sandro Carrara in Lausanne (first photo). The conference venue was the new conference center at EPFL. The theme of this edition was a "Breakthrough for distributed diagnostics and therapy", highlighting the enormous potential that circuits and systems have in developing distributed diagnostics and therapy, the next generation of medical care !

Several historical "fathers" of the field went in Lausanne, like Tony Turner, the father of glucometers invented in 80s, Evgeny Katz, father of biofuel cells, John Rogers, father of the dissolvable electronics, an absolutely recent and revolutionary invention.

This edition was also the occasion to celebrate the 10th anniversary of this advanced conference. For the occasion, a special cake was offered to all the participants at the gala dinner, organized in the spectacular main dinner-room at the Beau-Rivage Hotel in Ouchy. All the past general chairmen were invited in Lausanne (second photo). Past general chairs came from the most prestigious international institutions, like Johns Hopkins University, University of California San Diego, and TU-Delft. This also demonstrates the attention and effort provided worldwide to this field of research, which constantly grows over the past 10 years as further shown by the huge increase in term of participants that came in Lausanne this year. A video has been also realized for this exceptional anniversary. The video explains how the conference was funded and then developed over the years to provide an unique forum for all the experts and to leverage new research in this field of highly impact in the human health and wellbeing (video available at the web site www.biocas2014.org).

The meeting was the occasion to discuss the latest news in the area of brain research too. For example, Tim Denison from Medtronic (top leader in the field) discussed the definitely new approach of "creating windows" in the human brain. Nowadays, the burden of neurological disease represents a large unmet need with significant societal and economic impact. While promising in-roads for treatment have been made for some conditions, the application of medical technology to address the broader space of neurological disorders is often limited by the lack of understanding of the natural pathophysiology, and, in particular, the response of a diseased neural circuit to existing and potential treatments. At the conference, he kept scientists and technologists discussing on how to address the issue by creating translational research tools for neuroscientists. The hope here is creating a joint effort in working with clinicians, scientists and engineers that can then create "windows into the brain" by inserting fixed implants in the human brain meanwhile keeping outside the hardware/software systems required to measure, control and stimulate. Medtronic is working hard to help in making these systems practical, taking into account the balance between the risks and benefits of the system from the patient's perspective.

More than that, the conference in Lausanne has been a great occasion to bring several scientists and researchers from all the top-best industries and academics in order to develop fruitful discussions and contacts to further foster the research in the area of electronic circuits for biomedical applications, a greatly expanding area that will provide all of us, in the next ten years from now, new personal tools to monitor and control our health even remotely.

4) IEEE Transactions on Biomedical Circuits and Systems

Co-sponsored by the IEEE Circuits and Systems Society and IEEE Engineering in Medicine and Biology Society, the IEEE Transactions on Biomedical Circuits and Systems (TBioCAS) is now entering its 9th year of existence, and over the years has emerged as the premier venue for publishing research advances and reviews at the interface between circuits, systems, and biomedicine validated in clinical, biological,

or bioinspired settings.

2014-2015 has again been a strong year for TBioCAS. Thanks to the efforts of the associate editors and reviewers, the average manuscript review took 55 days to reach a first decision, and 65 days to reach a final decision. TBioCAS submissions rose another 15% to currently 300 submissions annually. The page budget remained at 920 pages, with a proposed increase to 1,200 pages spread over 12 monthly issues starting 2016. Acceptance rate remains at 22% per submission or 34% per original submission. The impact factor rose again to 3.149 (25/274 rank by Journal Citation Report in electrical and electronic engineering; 13/77 in biomedical engineering) and the Article Influence Score reached 1.268 (31/274 by JCR in EEE; 7/77 in BE).

We urge the BioCAS community to continue contributing to the success of TBioCAS as avid and frequent readers, inspiring and prolific authors, and critical but constructive and prompt reviewers. The following resources are available to the community:

TBioCAS web site: <http://iee.org/tbiocas/>

Submission site: <https://mc.manuscriptcentral.com/tbcas>

IEEEExplore article search: <http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=4156126>

PubMed/MEDLINE search:

[http://www.ncbi.nlm.nih.gov/pubmed?term=\(%22IEEE%20transactions%20on%20biomedical%20circuits%20and%20systems%22%5BJournal%5D\)](http://www.ncbi.nlm.nih.gov/pubmed?term=(%22IEEE%20transactions%20on%20biomedical%20circuits%20and%20systems%22%5BJournal%5D))

Google Scholar article search:

http://scholar.google.com/scholar?q=&as_publication=IEEE+transactions+on+biomedical+circuits+and+systems

5) Short Courses, Plenary Sessions, Keynote Speakers, Invited Lectures

Andreas Demosthenous:

- “Neuroprosthetics”; IBME (UCL) Workshop on Neuromodulation, February 2015

Tsung-Yi Ho:

- “The Coming of Age of Microfluidics: EDA Solutions for Enabling Biochemistry on a Chip”
IEEE International Symposium on Integrated Circuits (ISIC), Singapore, Dec. 2014
- “Continuous-Flow Biochips: Current platforms and emerging research challenges”
IEEE International Conference on VLSI Design (VLSI), Bangalore, India, Jan. 2015

Paul P. Sotiriadis:

- “All Digital Frequency Synthesis Based on New Sigma-Delta Modulation Architectures”, IEEE Int. Frequency Control Symposium 2015.

Yong Lian:

- “Wearable Wireless Biomedical Sensors: Challenges and Future”, a keynote in the 2015 Symposium on Engineering, Medicine and Biology Applications (SEMBA'2015), Jan. 30 – Feb. 1, 2015, Kaohsiung, Taiwan.

Shuenn-Yuh Lee:

- 15th Emerging Information and Technology Conference (EITA-Bio 2015)

Maysam Ghovanloo:

- Invited talk on “Implantable and Wearable Microelectronic Devices to Improve Quality of Life for People with Disabilities” Department of Electrical and Computer Engineering, University of Utah, Salt Lake City, UT, Jan. 2015.
- Invited talk on “Implantable and Wearable Microelectronic Devices to Improve Quality of Life for People with Disabilities” Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, Sep. 2014.
- Invited talk on “Implantable and Wearable Microelectronic Devices to Improve Quality of Life for People with Disabilities” Kilby Labs, Texas Instruments Corp., Dallas, TX, June 2014.

Jie Chen:

- “Pulsed-Wave Technology for Tissue Engineering, Cell Therapy and Renewable Biofuel”, invited talk at the Department of Computer Science and Engineering, Washington University in St. Louis, Sept. 2014
- “Personalized Companion Diagnostic Handheld Device Design”, invited talk at the 8th multi-disciplinary symposium of Canadian Chinese Professors, Niagara-on-the-Lake, Ontario, August 2014

Giacomo Indiveri:

- UZH Robotics and perception Group Seminar series, Zurich, Switzerland
- DATE’15 Conference, 2nd International Workshop on Neuromorphic and Brain-Based Computing Systems, Grenoble, France
- University of Bielefeld - CITEC Virtual Faculty Guest talk, Bielefeld, Germany
- IEEE Swiss CAS/ED Workshop 2014 on Memristive Devices and Neuromorphic Applications, Zurich, Switzerland
- Bernstein Conference 2014, Satellite Workshop “Brain-like Computation in Hardware: Advances in Neuromorphic Engineering”, Goettingen, Germany
- KTH Dean’s Forum Workshop on Brain-Like Computing, Stockholm, Sweden
- Italian Institute of Technology Seminar Series, Genova, Italy
- IBM Research, Zurich, Switzerland
- University of Cyprus, Invited tutorial, Nicosia, Cyprus
- 1st International Symposium on Neuromorphic and Nonlinear Engineering, Tokio, Japan
- CASFEST - Circuits & Systems Society Forum on Emerging & Selected Topics, Melbourne, Australia

Themis Prodromakis:

- “Reliably Unreliable Nanoelectronics”, Department of Electronic & Electrical Engineering”, University College London, May 2014, UK.

Zhiping Lin:

- “Example Talk Title”, invited seminar at The University of Manchester, December 2011.
- “Another Example Title”, keynote talk at 3rd International Workshop on Systems Way Better Than the Ones We Have Already, Grantchester, 31 December 2011

Wouter A. Serdijn:

- Wouter A. Serdijn: Power-Efficient Neural Stimulator Circuits, invited talk, John Choma Commemorative Sessions at ISCAS 2015, Lisbon, Portugal, May 25
- Wouter A. Serdijn: Sensing and Stimulating the Body with Electroceuticals, invited talk, the Sense of Contact 17, Kontakt der Kontinenten, Soesterberg, the Netherlands, April 2, 2015
- Wouter A. Serdijn: Circuits and Systems for Electroceuticals, invited IEEE Distinguished Lecturer presentation, University of Brasilia (UNB), Brasilia, Brazil, Nov. 21, 2014
- Wouter A. Serdijn: Recent Developments in Cochlear Implants, invited presentation, University of Santa Catarina, Florianopolis, Brazil, Nov. 19, 2014

- Wouter A. Serdijn: Circuits and Systems for Electroceuticals, invited IEEE Distinguished Lecturer presentation, University of Rio de Janeiro, Rio de Janeiro, Brazil, Nov. 17, 2014
- Wouter Serdijn: Getting Better with Electricity, invited presentation at the Border Sessions 2014, the International Technology Festival, part of the Crossing Borders Festival, The Hague, the Netherlands, Nov. 12 and 13, 2014
- Wouter A. Serdijn: Wearable Active Implantable Medical Devices, invited presentation, École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland, June 19, 2014
- Wouter A. Serdijn: Circuits and Systems for Electroceuticals, invited presentation, University of Melbourne, Australia, May 30, 2014
- Wouter A. Serdijn: Circuits and Systems for Electroceuticals, invited IEEE Distinguished Lecturer presentation, University of Bologna, Italy, May 19, 2014

Edmund Lam:

- “Computational sectioning and resolution enhancement in optical scanning holography”, invited talk at OSA Digital Holography and Three-dimensional Imaging, July 2014.
- “Efficient autofocusing in optical scanning holography”, invited talk at Japan Society of Applied Physics (JSAP) and The Optical Society (OSA) Joint Symposia, September 2014.

Viktor Gruev:

- “Bio-Inspired Sensors: From Optics and Circuits to Medical Applications,” Philips Research, May 6, 2014.
- V. Gruev, “Polarization Imaging Sensors For Imaging Through Fog and Rain,” Autoliv Inc, Stockholm, Sweden, June 22, 2014.
- “Bio-inspired polarization imagers,” Airforce Office of Scientific Research Meeting, Ft. Walton Beach, FL, October 8, 2014.
- “Sensor level filtering”, RTI International, Durham NC, October 15, 2014.
- “Nanomaterials for bio-inspired imagers,” Institute for Material Science, Washington University, St. Louis, MO, October 31, 2014.
- “Bio-Inspired Spectral-Polarization Imagers: From Optics and Circuits to Medical Applications,” Johns Hopkins University Applied Physics Lab, Columbia, MD, December 10, 2014.
- “Bio-Inspired Spectral-Polarization Imaging Sensors for Medical Applications,” in Frontiers in Optics 2014, Tucson, AZ, 2014.
- “Bio-Inspired Sensory Systems for Image Guided Surgery,” Ferreyra Research Institute, Cordoba, Argentina, 2015.

Pantelis Georgiou:

- “Bio-inspired Semiconductors for Healthcare”, Symposium on Emerging Trends in Electronics, Montreux, Switzerland, 2-Dec-2014
- “Bio-inspired Semiconductors for Healthcare”, IEEE UK and Ireland Section public keynote talk, London, 30-Oct-2014.
- “The Bio-inspired Artificial Pancreas for Treatment of Diabetes”, UK Electronic Skills Foundation, Southampton, 10-Jul-2014

Eugenio Culurciello:

- JHU APL, November 5th 2014, Host: Roos Matthew, Title: Enabling gadgets to perceive the world
- Purdue University, Dawn or Doom Summit, Thursday September 18, 2014, Title: Visual Intelligence and the Terminator
- University of Udine, July 10th 2014, Host: Andrea Fusiello <andrea.fusiello@uniud.it>
- Invited Talk EVW at CVPR <http://cvisioncentral.com/promotion/evw2014/> June 28th 2014, Host: Sek Chai, SRI

Robert Rieger:

- “Selected Circuit Designs for Biomedical Signal Acquisition”, invited tutorial speaker at SEMBA (Symposium on Engineering,

- Medicine and Biology Applications), Taiwan, January 2015.
- “Amplifier Design for Biomedical Signal Acquisition”, invited lecture at National Chia-Yi University, Chiayi, Taiwan, May 2014.

Sandro Carrara:

- The IronIC project: new perspectives in Human Metabolism Telemetry (Plenary talk), CMOS Emerging Technology Research Conference, Grenoble, France, July 6-8, 2014
- A tiny laboratory under the skin, PhyCS, International Conference on Physiological Computing Systems, organized in conjunction with Sensornets 2014, Lisbon, Portugal, January 7-9, 2014
- Memristors for Biosensing, International Conference NanotechItaly 2014, Venice, Italy, November 27th, 2014
- New Frontiers in Human Telemetry, ETHZ, Zurich, Switzerland, October 17th, 2014
- Adaptive Materials/Devices for Biosensing Aim, ICNAAM, 12th International Conference of Numerical Analysis and Applied Mathematics, Symposium on Adaptive Materials and Devices, Rhodes, Greek, September 27th, 2014
- New Frontiers in Human Telemetry, Laval University, Quebec City, Canada, September 4th, 2014
- New Frontiers in Human Telemetry, Michigan State University, Lansing, US, September 2nd, 2014
- Electrochemical Biochip for Applications to Wireless and Batteryless Monitoring of Free-Moving Mice, EMBC 2014, 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 26-30, 2014, Chicago (US)

Karim G. Oweiss:

- “Reverse Engineering the Brain: Implications for Clinically Viable Brain Machine Interfaces” Department of Biomedical Engineering, University of Florida, FL, 10/27/2014
- “Clinically Viable, Bi- - directional Brain Machine Interfaces,” Neurology Grand Rounds, Department of Neurosurgery, Spectrum Health System, Grand Rapids, MI, 05/21/2014
- “Clinically Viable Brain Computer Interfaces”, Center for Neural Engineering, Biomedical Engineering Department, Columbia University, 05/05/2014

Mohamad Sawan:

- “Engineering Neurosensing and Treatment Through Heterogeneous Devices”, Invited Seminar at HKUST, Hong Kong, March 2015.
- “Brain-Machine-Brain Interfaces for Sensing and Subsequent Treatment”, Tutorial at the IEEE-Int'l Conference n Microelectronics, Doha, Qatar, December 2014.
- “Toward Brain-Machine-Brain Interfaces for the Recovery of Vital Functions”, Invited Talk at Université Paul-Sabatier, Toulouse, France, December 2014.
- “Microsystems for neuroengineering sensing and treatment”, Keynote at the ICESTI, Annaba, Algeria, October 2014.
- “Motivation and Outcomes in National and International Academic Collaboration”, Keynote at the CITEF, Beirut, Lebanon, October 2014.
- “Estimation of Bladder Volume From Afferent Neural Activity”, Invited Talk at the ACRM, Toronto, Canada, October 2014.
- “Bio-Microsystems for Neuroscience Treatments”, Invited Talk at the University of Alberta, Edmonton, Canada, September 2014.
- “Sensing and Treatment using Smart Implantable Brain-Machine Interfaces”, Summer School Tutorial, Tainan, Taiwan, September 2014.
- “Circuits and Systems for Low-Power Budget Applications”, Invited Seminar, Huawei, Ottawa, Canada, September 2014.
- “Biosensors and prostheses for neurorecording and neurostimulation”, Invited Seminar at University Federal of Santa Catarina, Florianopolis, Brazil, August 2014.
- “Challenges of Wirelessly Managing Power and Data for Implantable Bioelectronics”, Invited Seminar at Cyber-Physical Systems Summer School, Grenoble, July 2014.
- “Multimodal Wearable Brain-Computer Interface for Clinical Imaging Applications”, Invited Talk at CMOS Emerging Technology Workshop, Grenoble, July 2014.

- “Toward Brain-Machine Interfaces for Diagnostic and Treatment of Complex Neural Diseases”, Keynote at FTFC, Monte Carlo, Monaco, May 2014.
- “Implantable Brain-Computer Interfaces for Parallel Neurosensing and Subsequent Treatment”, Invited Seminar at CREATE SSI, Montreal, May 2014.
- “Toward Brain-Machine Interfaces for Diagnostic and Treatment of Complex Neural Diseases”, Invited Seminar at KUSTAR, Abu Dhabi, UAE, April 2014.
- “Implantable Brain-Machine Interfaces for the Recovery of Neuromuscular Vital Functions”, Keynote at MELECON’14, Beirut, Lebanon, April 2014.
- “Challenges of Wirelessly Managing Power and Data for Implantable Bioelectronics”, Keynote at ISBB’14, Taipei, Taiwan, April 2014.

Pau-Choo (Julia) Chung:

- Joint Conference on Medical Informatics in Taiwan (JCMIT 2014), “Vision of Healthcare from the development of wearable devices”, Nov. 2014
- 2014 IEEE International Symposium on Computer, Consumer and Control (IS3C 2014), “Depth Estimation using Spatial and Temporal Consistency Information”, June 2014.
- The 8th International Conference on Advanced Information Technologies (AIT 2014), “Intelligent Sensing for Healthcare Applications”, April 2014
- 2014 International Workshop on Advanced Image Technology (IWAIT 2014), “Intelligent Sensing for Healthcare Applications”, January 2014

Pedram Mohseni:

- “Integrated systems for high-fidelity sensing and manipulation of brain neurochemistry,” Integrated Systems Seminar Series, Ming-Hsieh Dept of Electrical Engineering, University of Southern California, Los Angeles, CA, November 21, 2014.
- “A closed-loop brain prosthesis for functional recovery after TBI,” International Neurotechnology Consortium Workshop: Frontiers of Neurotechnology – Innovations and Translation, 36th Annu. Int. IEEE Eng. Med. Biol. Conf. (EMBC’14), Chicago, IL, August 26, 2014.

Milutin Stanačević:

- “Real-time Low-power VLSI Microsystem for Smart Acoustic Interfaces”, invited lecture by The IEEE Long Island Chapter of Circuits and Systems Society, May 2015.

Sameer Sonkusale:

- “Terahertz Metamaterials for Modulation and Detection”, Keynote talk for the session on “THz Sources 1” at SPIE Defense Sensing and Security Conference, Baltimore, April 2015
- “CMOS-X: Emerging Applications in Sensing and Medical Diagnostics”, invited seminar at Michigan State University, April 2015
- “Lab on a chip optical sensory array for medicine and healthcare”, invited seminar at Washington University in St. Louis, February 2015
- “Nano-enabled flexible sensors and low power circuits for biomedical and lifesciences”, invited seminar at Worcester Polytechnic Institute (WPI), December 2014

Manuel Delgado-Restituto:

- “Implantable Neural Recording Interfaces”, tutorial at the VI Latin American Symposium on Circuits & Systems - LASCAS 2015, February 2015, Montevideo (Uruguay).

Julius Georgiou:

- “Memristors: The Challenging Leap from Devices to Systems”, 2014 CAS-FEST Keynote Speaker, 5th June 2014, Melbourne, Australia.

Abbes Amira:

- Invited talk “Research Methodology for Graduate Students”, Qatar University, Qatar, 5th November 2014. Delivered to all graduate students at Qatar University and organized through OFID.
- Invited talk-tutorial on “Reconfigurable Computing for Imaging Systems”, the 4th IEEE International Conference on Image Processing Theory, Tools and Applications, Paris, France, 14th October 2014.
- Invited Speaker (Plenary) at the International Conference on Automatic Control Telecommunication and Signals (ICATS’15), 16-18 November 2015, Annaba, Algeria.
- Invited Speaker at the International Conference on Electrical and Electronic Engineering (IC3E 2015), 10-11 August 2015, Malacca, Malaysia.

Donald Lie:

- Invited Paper: “Design of Highly-Efficient Fully-Monolithic SiGe Envelope-Tracking Power Amplifiers (ET-PA) for Broadband Wireless Applications”, D.Y.C. Lie, Y. Li, J. Lopez, and J. Tsay, IEEE Asia Pacific Microwave Conference (APMC’14), pp. 1085-1088, Sendai, Japan, Nov. 4-7 (2014)

Demarchi Danilo:

- System-aware Design Methodology for MEMS with Model-Order-Reduction. Invited Lecture at the Workshop “Smart Sensor and Actuators at the Age of Internet of Things”. Bertinoro (Bo), Italy, August 2014.
- CMOS and Biosensing in a unique IC: reduction of noise, dimensions and cost. Invited talk at CMOS Emerging Technologies Research Symposium, Grenoble, France, July 2014.
- Bio-inspired architectures for the detection and elaboration of biosignals. Invited talk at the 2nd European Conference From Medicine to Bionics, Budapest, Hungary, May 2014.

Chua-Chin Wang:

- Invited Talk, “Future Trend of Taiwan IC Industry from NPIE Perspective” in 2015 Global Technology and Industry Summit Forum (Apr. 2015)
- Invited Talk, “Slew Rate Improved $2\times VDD$ Output Buffer Using Leakage and Delay Compensation” in 2014 IEEE Inter. Conf. on Electron Devices and Solid-State Circuits (June, 2014)

Arindam Basu:

- “Neuromorphic Circuits for Scalable Neuroprosthetics,” invited talk at IEEE CAS, Singapore, Jan 2015.
- “Can neuromorphic systems make use of mismatch and noise, and is it beneficial to do so?” invited talk at Australian Neuromorphic Workshop, Melbourne, June 2014.

Alex Fish:

- “Alternative Logic Families for Energy-Efficient, Fast and Secured Chip Design”, invited talk, Green Photonics symposium, Berlin, March 2015.
- “High performance, low power and secured IC components”, invited lecture, University of Freiburg, August 2014.
- “Alternative circuit level solutions for fast, energy- efficient and secured IC components”, invited lecture, UC Louvain, August 2014.

6) IEEE Service and other Professional Activities

Andreas Demosthenous:

- CASS Representative on the IEEE Life Sciences Technical Community (LSTC) (2011 – present)
- 2015 “Guillemin-Cauer Best Paper Award” Committee Member
- 2015 “Darlington Best Paper Award” Committee Member

Man-Kay Law:

- TC Member, CAS Sensory Systems
- TC Member, CAS Biomedical and Life Science Circuits and Systems

Tsung-Yi Ho:

- IEEE Tainan Chapter CS Society, Chapter Chair (2014-present)

Yong Lian:

- Vice President, Publications, IEEE Circuits and Systems Society.

Shuenn-Yuh Lee:

- IEEE International Symposium on Circuits and Systems(ISCAS)-VLSI Systems and Applications TC Member
- IEEE International Symposium on Circuits and Systems(ISCAS)-Biomedical and Life Science Circuits and Systems TC Member
- IEEE International Symposium on Circuits and Systems(ISCAS)- Nanoelectronics and Gigascale TC Member
- IEEE Asian Solid-State Circuits Conference(A-SSCC)-Emerging Technologies and Applications TC Member
- 2014/2015 International Symposium on Circuits and Systems (ISCAS)
- Paper assign by VLSI Systems and Applications TC (ISCAS)
- Paper assign by Biomedical and Life Science Circuits and Systems TC (ISCAS)
- Paper assign by 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS)
- Paper assign by 2014 Asian Solid-State Circuits Conference (A-SSCC)
- Organize RCM members for paper assign by 2015 4th International Symposium on Bioelectronics and Bioinformatics (ISBB)

Themis Prodromakis:

- IEEE Nanotechnology Council (CAS representative), March 2015
- Member of the Emerging Research Devices working group for shaping the ITRS, July 2014
- Member of the Neural Systems and Applications Technical Program Committee, June 2014

Zhiping Lin:

- IEEE Sensors Council, Board Member (2008-present)
- Scientific Advisor to UK government (2010-present)

Amine Bermak:

- Member of the IEEE circuits and Systems Society's
- IEEE Fellows selection committee

- Member of the IEEE Technical Committee on Sensory Systems (IEEE Circuits and Systems Society)
- Member of the IEEE Technical Committee on Biomedical Circuits and Systems (IEEE Circuits and Systems Society)
- Regular reviewer for a number of international conferences and journals such as “IEEE Sensors”, “IEEE Electron Device Letters”, “IEEE Trans. on Neural Networks”, “IEEE Trans. on Instrumentation and Measurements”, “Microelectronics Journal”, “Analog IC and Signal Processing”, “IEEE Trans. on Circuits and Systems I & II, ISCAS, CICC, DATE, DELTA, ICECS, IWSOC, etc...

Viktor Gruev:

- Technical Committee for Biomedical Circuits and Systems, IEEE ISCAS
- Technical Committee for Sensory Systems, IEEE ISCAS

Pantelis Georgiou:

- IEEE Sensors Council, Circuits and Systems Representative. (2014-present)

Robert Rieger:

- Member of the IEEE Technical Committee on Biomedical and Life Science Circuits and Systems (BioCAS-TC)
- Member of the IEEE VLSI Systems and Applications Technical Committee (VTA-TC)
- Member of the IEEE Technical Committee CAS Education and Outreach (CASEO)

Sandro Carrara:

- BoG member of CAS Society (elected in November 2014)
- Member at large in the IEEE Sensors Council (elected in November 2014)
- CAS representative in the IEEE Sensors Council (until December 2014)

Bin-Da Liu:

- IEEE Tainan Section, Board Member (2008-present)

Derek Ho:

- Executive Committee Member for the IEEE Hong Kong Joint Chapter on Electron Devices and Solid State Circuits (2013-present)

Timothy Constandinou:

- SSecretary, Sensory Systems Technical Committee, IEEE CAS Society
- Member, BioCAS Technical Committee, IEEE CAS Society
- Chair, IET Awards & Prizes Committee
- Member, IET Knowledge Services Board (KSB)
- US Brain Initiative, Review Panel Member
- EPSRC College Member

Karim G. Oweiss:

- Member, IEEE Technical Committee on Biomedical Circuits and Systems; IEEE Technical Committee on Life-- - Science Systems and Applications; IEEE Technical Committee on Neural Systems and Applications; IEEE Engineering in Medicine and Biology Society

Mohamad Sawan:

- Member of the Board of Governors of the IEEE-CASS (2013-present)
- Member CASS's representative of the IEEE LifeScience Technical Committee
- Chair of the IEEE Biomedical Award Committee (2014-Present)

Elisabetta Chicca:

- Member of the IEEE Biomedical Circuits and Systems TC
- Member of the IEEE Neural Systems and Applications TC
- Chair Elect of the IEEE Neural Systems and Applications Technical Committee

Pedram Mohseni:

- IEEE Engineering in Medicine and Biology Society (EMBS) representative to IEEE Sensors Council (2014-2015)

Sameer Sonkusale:

- Chair, IEEE CAS Biomedical and Life sciences Circuits and Systems Technical Committee (BIOCAS TC), 2014-2016
- Member, IEEE CAS Analog Signal Processing Technical Committee (ASPTC), 2006-present

Manuel Delgado-Restituto:

- CAS Biomedical and Life Science Circuits and Systems TC Member
- Scientific Advisor to Spanish government (2009-present)
- EC project evaluation

Milutin Stanačević:

- ETF BAFA Vice President, Scholarship Awards Program

Wouter A. Serdijn:

- Chair of the Circuits and System Plagiarism Committee (2012-2014)
- Member of the CASS Technical Committees Review Committee (2013 - 2014)

Kea-Tiong (Samuel) Tang:

- Member of IEEE Solid-State Circuits Society (SSCS), Circuits and Systems Society (CASS), Engineering in Medicine and Biology Society (EMBS), and Electron Device Society (EDS)
- Technical Committee Member of IEEE Biomedical and Life Science Circuits and Systems Society (BioCAS). Serving as TC secretary, May 2014 ~ April 2016

Julius Georgiou:

- Vice-Chair of Technical Committee for Biomedical and Life Science Circuits and Systems, IEEE ISCAS
- Technical Committee for Sensory Systems, IEEE ISCAS
- Technical Committee for Sensory Systems, IEEE ISCAS
- Technical Committee for Analog Signal Processing, IEEE ISCAS

Donald Lie:

- General Chair, BCTM'14
- General Chair, SiRF'14
- TPC chair/co-chair, VLSI-DAT'14,15
- TC & Steering Committee, MWSCAS'14
- TC SubCom Chair, RFIC Symp.'14

Demarchi Danilo:

- Associate Editor, Section Bioinstrumentation, Biosensors and Bio-Micro/Nano Technologies, Annual IEEE EMBC (Engineering in Medicine and Biology) Conference, Milan, Italy.
- TC member, IEEE IWASI 2015, International Workshop on Advances in Sensors and Interfaces, Bari, Italy.

- TC member, Annual IEEE EMBS Micro and Nanotechnology in Medicine Conference.

7) Organizers: Conferences, Workshops, Panels, Special Sessions, Tutorials

Andreas Demosthenous:

- Member of the Technical Programme Committee for ESSCIRC (2007-present)
- International Solid-State Circuits Conference (ISSCC) Student Research Preview TPC (2012 – present)
- Review Committee Member for ISCAS (2005 – present)
- Review Committee Member for BIOCAS (2006 – present)

Man-Kay Law:

- University LSI Design Contest (UDC) Committee Member, 20th Asia and South Pacific Design Automation Conference (ASP-DAC 2015)
- Technical Program Committee Member, 6th Asia Symposium on Quality Electronic Design (ASQED 2015)

Tsung-Yi Ho:

- ACM/IEEE Design Automation Conference 2014, 2015
- ACM/IEEE Asia and South Pacific Design Automation Conference 2014 (Track Chair), 2015 (Track Chair)
- IEEE/ACM International Conference on Computer-Aided Design 2014
- IEEE/ACM Design Automation and Test in Europe 2015
- ACM International Symposium on Physical Design 2014, 2015
- IEEE/ACM International Workshop on System Level Interconnect Prediction 2014, 2015
- IEEE International SOC Conference 2014 (Track Chair), 2015 (Track Chair)
- IEEE International Symposium on VLSI Design and Testing 2014, 2015
- IEEE International Conference on VLSI Design 2014, 2015
- IEEE International Conference on Computer Design 2014, 2015
- IEEE International Symposium on Circuits and Systems 2014, 2015
- IEEE International Symposium on Integrated Circuits 2014
- IEEE Biomedical Circuits and Systems Conference 2014
- IEEE/IFIP International Conference on Very Large Scale Integration 2014

Paul P. Sotiriadis:

- Technical Program Chair, 2018 IEEE International Symposium on Circuits and Systems (ISCAS 2018), May 2018, Florence, Italy.
- General Chair, 2016 IEEE Biomedical Circuits and Systems Conference (BioCAS 2016), Oct. 2016, Shanghai, China.
- General Co-Chair, 11th International Conference on ASIC (ASICON 2015), Nov. 3-6, 2015, Chengdu, China.
- Technical Program Chair, 20th IEEE International Conference on Digital Signal Processing (DSP 2015), July 21-24, 2015, Singapore.
- Technical Program Chair, 2014 IEEE Asia Pacific Conference on Circuits and Systems, Nov. 17 – 20, Okinawa, Japan.
- Technical Program Committee Member, the 2014 IEEE Asian Solid-State Circuits Conference (A-SSCC'2014), Nov. 10-12, 2014, Kaohsiung, Taiwan.
- Technical Committee member, the 12th International Conference on Solid-State and Integrated Circuit Technology (ICSICT'2014), Oct. 28-31, 2014, Guilin, China.
- International Liaison, 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS'2014), Lausanne, Switzerland, Oct. 22-24, 2014.
- Technical Program Committee member of ICECS 2015

Shuenn-Yuh Lee:

- Technical Program Chair: 2015 International Symposium on Bioelectronics and Bioinformatics (ISBB)

Andrew Mason:

- Publications Chair, IEEE Int. Conf. Biomedical Circuits and Systems (BioCAS) 2016

Maysam Ghovanloo:

- Technical Program Committee Co-Chair, IEEE BioCAS 2014, Lausanne, Switzerland
- General Chair, IEEE BioCAS 2015, Atlanta, Georgia, USA

Jie Chen:

- Special session chair of "Circuit and System Design Challenges in Implementing Recent Findings of Genomics, Proteomics and Metabolomics", in IEEE Symposium on Circuits and Systems, Melbourne, Australia, June 1-5, 2014
- Technical program committee member of IEEE Biomedical and Health Informatics 2014, Valencia, Spain, June 1st-4th 2014
- Giacomo Indiveri:
- Chief Editor Frontiers in Neuromorphic Engineering.

Giacomo Indiveri:

- 2014, 2015 Cognitive Neuromorphic Engineering Workhsop, Sardinia, Italy.
- 2015 MemoCIS Training School on "Memristors - Devices, Models, Circuits, Systems and Applications", Sardinia, Italy.

Themis Prodromakis:

- CAS-FEST on "Memristive devices, circuits, systems & applications", Melbourne, June 2014, Australia

Wouter A. Serdijn:

- General Chair for the IEEE International Symposium on Circuits and Systems (ISCAS) 2015
- Technical Program Chair for the IEEE International Symposium on Circuits and Systems (ISCAS) 2014
- Technical Program Committee member for the 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS2014)
- Member of the BioCAS Steering Committee (2010, 2012 - 2015)

Edmund Lam:

- General Chair of OSA Signal Recovery and Synthesis topical meeting, July 2014.
- Chair of IS&T / SPIE Image Processing: Machine Vision Applications conference, February 2015.

Pantelis Georgiou:

- Demo Session Chair, IEEE ISCAS conference, 2015(Lisbon, Portugal)
- Technical Program Chair, IEEE BioCAS conference, 2014 (Lausanne, Switzerland)

Robert Rieger:

- Track Co-chair IEEE ISCAS 2015 conference, Live-Demo Session

Christoph Posch:

- Review Committee member, IEEE International Symposium on Circuits and Systems, ISCAS (2010-present)
- Review Committee member, IEEE International Conference on Biomedical Circuits and Systems, BioCAS (2012-present)

Sandro Carrara:

- General Chairman of IEEE BioCAS 2014

Bin-Da Liu:

- Member of the Technical Committee for the IEEE BioCAS conference (2014)

Derek Ho:

- Member of the Technical Committee for the IEEE ISCAS conference (2014-present)

HK Kwan:

- Technical Program Co-Chair, International Conference on Digital Signal Processing (DSP2014), Hong Kong.

Mohamad Sawan:

- General Co-Chair of the IEEE International NEWCAS Conference in Trois-Rivieres, Quebec, Canada, June 2014
- General Co-Chair of the IEEE International Conference in Microelectronics Doha, Qatar, December 2014
- Member of the Technical Committee of the IEEE-BIOCAS conference
- Member of the Steering Committee of the IEEE-NEWCAS conference
- Member of the Steering Committee of the IEEE-ISCAS conference
- Member of the Steering Committee of the IEEE-MWSCAS conference

Elisabetta Chicca:

- Co-organizer of the BCCN Workshop on Neuromorphic Engineering 2014 for the Bernstein Conference
- Review Committee Member IEEE Symposium on Circuits and Systems (ISCAS) 2015

Pau-Choo (Julia) Chung:

- Joint IWAIT & IFMIA 2015 (General Chair)
- IEEE International Symposium on Bioelectronics and Bioinformatics (ISBB 2014): Steering Committee

Pedram Mohseni:

- Technical Program Committee Member, IEEE CICC (2012-present)
- Technical Program Committee Member, IEEE RFIC Symposium (2012-present)

Milutin Stanaćević:

- Member, Technical Program Committee, Biomedical Circuits and Systems Conference, 2008-present
- Member, Technical Program Committee, IEEE Sensors Conference, 2004 – present
- Member, Technical Program Committee, IEEE International Symposium on Circuits and Systems, 2004 – present
- Member, Technical Program Committee of Student Forum, International Solid State Circuits Conference, 2011-2015
- General Chair for the National Science Foundation's (NSF) Division of Biological Infrastructure's PI Meeting, May 2014.

Manuel Delgado-Restituto:

- Review Committee Member, 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS), 2014.
- Technical Program Committee, European Solid-State Circuits Conference, 2014.
- Technical Program Committee, Ph.D. Research in Microelectronics and Electronics (PRIME) conference, 2014-2015.
- Technical Program Committee, 2014 IEEE International Conference on Electronics, Circuits, and Systems (ICECS), 2014.
- International coordinator, 2014 IEEE International Conference on Electronics, Circuits, and Systems (ICECS), 2014.
- Review Committee Member, 2014 IEEE International Symposium on Circuits and Systems (ISCAS), 2014.
- General co-chair, 2015 Bio-MEMS and Medical Microdevices Conference, SPIE Microelectronics 2015.

Kea-Tiong (Samuel) Tang:

- Organizing Committee, International Workshop on Bio-inspired Systems and Prosthetic Devices, 2014, 2015
- Technical Program Committee, IEEE International Symposium on Circuits and Systems, 2014, 2015
- Program Committee Member, Symposium on Engineering, Medicine, and Biology Applications, 2014, 2015
- Track Chair of Sensory System, IEEE Asia Pacific Conference on Circuits and Systems, 2014
- Program Committee, IEEE International Conference on Cyber Technology in Automation, Control and Intelligent Systems, 2014
- Technical Program Committee, IEEE International Electron Devices Meeting, SMB Subcommittee, 2014, 2015

Abbes Amira:

- Invited to join the IET FELLOW evaluation panel.
- Member of the IEEE Technical Committee on Biomedical Circuits and Systems.
- Member of the Steering Committee of the 11th IEEE Workshop on Embedded Vision, EVW 2015, in Conjunction with The IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2015, -12 June 2015, Boston, USA.
- Conference Track Co-Chair of "Multimedia, Computer vision and Image Processing" The 11th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA' 2014), November 10-13, 2014, Doha, Qatar.
- Vice program Co-Chair of 9th IEEE International Design & Test Symposium 2014, 16-18 December, Algiers, Algeria.
- Conference Track Chair of "Computing Platform Architecture", The 27th IEEE
- International System on Chip Conference (SOCC2014), 2-5 September 2014, Las Vegas Nevada, USA.
- Organizing and chairing a special session on "Circuits and Systems for Connected Health" at the 2014 IEEE Conference on Microelectronics, 23-25 December 2014. Doha, Qatar
- General Co-Chair for the 2014 IEEE Conference on Microelectronics, 23-25 December 2014. Doha, Qatar
- Member of the review committee RCM: ISCAS 2015, the IEEE Symposium on Circuits and Systems, Lisbon, Portugal, 24-27 May 2015.
- Member of the program committee of the IEEE International System-on-Chip Conference (SOCC), 8-11 Beijing, China.
- Member of the program committee of the Parallel Computing with FPGAs (ParaFPGA 2015) in conjunction with the ParCo2015 conference "Parallel Computing", Edinburgh 1-4 September 2015.
- Member of the program committee of the First International Conference on Smart Portable, Wearable, Implantable and Disability-oriented Devices and Systems (SPWID 2015), Brussels, Belgium. June 21 - 26, 2015.

- Reviewer for IEEE/Elsevier/Springer/IET Journals and International Conferences

Donald Lie:

- TC Member, BCTM'14
- TC Member, Remain as TC Member and Ex'Com, SiRF'14
- TC Member, On-going (General Chair 2016-2017), VLSI-DAT'14,15
- TC Member, MWSCAS'14
- TC Member, RFIC Symp.'14
- TC Member, PAWR'14
- TC Member, BIOCAS'14
- TC Member, ASICON'14
- TC Member, ICSSE'14

Demarchi Danilo:

- Co-Chair of CMOS Lab-on-Chip Track, IEEE ISCAS 2015, Lisbon, Portugal.
- Track Co-Chair, Analog circuits and systems, IEEE NewCAS 2015, International New Circuits and Systems Conference, Grenoble, France.
- Special Session Chair Member, Bio-Inspired Circuits and Systems for Robotics, IEEE BioCAS 2014, Lausanne, Switzerland.
- Member of the Program Committee, Annual DSD, Euromicro Conference on Digital System Design.

Chua-Chin Wang:

- TPC Co-Chair, 2015 IEEE Inter. SoC Design Conference (2015 ISOCC)
- General Chair, 2015 Symposium on Engineering, Medicine and Biology Applications (2015 SEMBA).

Arindam Basu:

- Member of the Technical Programme Committee for the IEEE VLSI Design conference (2015)
- Member of the Technical Programme Committee for the IEEE ISCAS conference (2012-present)
- Member of the Technical Programme Committee for the IEEE EDSSC conference (2015)

Alex Fish:

- Special Sessions Chair, IEEE Sensors Conference, Seville, Spain, 2014
- Senior Committee member, IEEE S3S Conference, San Francisco, USA, 2014

8) Editorial Services

Andreas Demosthenous:

- Deputy Editor-in-Chief of IEEE Transactions on Circuits and Systems II: Express Briefs (2014 – present)
- Associate Editor for IEEE Transactions on Biomedical Circuits and Systems (2013 – present)
- Associate Editor for IEEE CASS Newsletter (2006 – present)
- International Advisory Board for Physiological Measurement, Institute of Physics (2008 – present)

Tsung-Yi Ho:

- Associate Editor of IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (2014 – present)
- Associate Editor of IEEE Transactions on Very Large Scale Integration Systems (2015 – present)

Paul P. Sotiriadis:

- Associate Editor of IEEE Sensors Journal (2012 – present)

Yong Lian:

- Guest Editor for IEEE Transactions on Circuits and Systems I, Special Issue on Selected Papers from ISCAS'2014
- Associate Editor, IEEE Transactions on Biomedical Circuits and Systems.
- Steering Committee Member, IEEE Transactions on Multimedia.
- Steering Committee Member, IEEE Transactions on Biomedical Circuits and Systems.

Shuenn-Yuh Lee:

- Guest Editor, Journal of Medical and Biological Engineering, Special Issue on Intelligent Body Sensor Network Electronics for Healthy Living (2014-2015)
- Guest Editor: Journal of Medical and Biological Engineering: Special Issue on Bioelectronics and Bioinformatics (2015-2016)
- Guest Editor: IEEE Design & Test: Special Issue on Implantable Medical Devices and Applications (2015-2016)

Andrew Mason:

- Associate Editor, IEEE Trans. on Biomedical Circ. Systems
- Editorial Board, BioNanoScience, Springer

Maysam Ghovanloo:

- Associate Editor, IEEE Transactions on Biomedical Circuits and Systems (TBioCAS)
- Associate Editor, IEEE Transactions on Biomedical Engineering (TBME)

Jie Chen:

- Guest Editor of Special Issue on Selected Papers from ISCAS 2014, May 2014

Giacomo Indiveri:

- Chief Editor Frontiers in Neuromorphic Engineering.
- Associate editor of "Cognitive Computation" (Springer).

Zhiping Lin:

- Editor-in-Chief, Multidimensional Systems and Signal Processing (2011-present)
- Associate Editor and Subject Editor, Journal of The Franklin Institute (2014-present)
- Lead Guest Editor, Special Issue on "Extreme Learning Machine on High Dimension and Large Data Applications," in Mathematical Problems in Engineering (2014 - 2015)

Amine Bermak:

- Associate Editor IEEE Transactions on Biomedical Circuits and Systems.
- Associate Editor IEEE Transactions on Circuits and Systems II
- Associate Editor, Scientific Reports, Nature Publisher

Wouter A. Serdijn:

- IEEE Transactions on Circuits and Systems - I, Guest Editor Special Issue on ISCAS'2014

Edmund Lam:

- Associate Editor of IEEE Transactions on Biomedical Circuits and Systems (2007 – present)
- Associate Editor of IEEE Signal Processing Letters (2014 – present)

Viktor Gruev:

- Associate Editor, IEEE Sensors Journal
- Guest Editor, IEEE T. on Biomedical Circuits and Systems

Pantelis Georgiou:

- IEEE Sensors Journal, Associate Editor
- IEEE Transactions on Biomedical Circuits and Systems (TBioCAS), Special Issue on IEEE BioCAS 2014 (Lausanne, Switzerland).

Robert Rieger:

- Associate Editor for IEEE Transactions on Biomedical Circuits & Systems (TBCAS) (2008 – present)
- Guest Editor for the IEEE Transactions on Circuits and Systems II (TCAS2), Special Issue on Biomedical and Bioelectronic Circuits for Enhanced Diagnosis and Therapy (February 2015)

Christoph Posch:

- Review Editor, Frontiers in Neuromorphic Engineering

Sandro Carrara:

- AE of the IEEE Transactions on Biomedical Circuits and Systems
- TE of the IEEE Sensors Journal
- EiC of BioNanoScience (by Springer)

Bin-Da Liu:

- Associate Editor of IEEE Transactions on Circuits and Systems-I, Regular Papers (2014 – present)
- Associate Editor of IEEE Transactions on Circuits and Systems-II, Express Briefs (2010 – present)
- Associate Editor of Journal of Electrical and Computer Engineering (2008 – present)
- Associate Editor of Journal of Circuits, Systems, and Signal Processing (2014 – present)

Timothy Constandinou:

- Associate editor, IEEE Transactions on Biomedical Circuits and Systems

Karim G. Oweiss:

- Consulting Editor, Academic Press, Elsevier, Biomedical Engineering Book Series, 2012 - present
- Associate Editor, IEEE Transactions on Neural Systems & Rehabilitation Engineering, 2012 - present
- Associate Editor, IEEE Signal Processing Letters, 2009 - present
- Associate Editor, Journal of Computational Intelligence and Neuroscience, 2006 - present
- Review Editor, Journal of Frontiers in Neural Engineering, 2009 - present
- Section Editor, Springer Encyclopedia of Computational Neuroscience: Brain Machine Interfaces, 2013 - present
- Theme Editor, IEEE Eng. In Med & Bio.

Mohamad Sawan:

- Associate Editor of IEEE Transactions on Biomedical Circuits and Systems
- Associate Editor of IEEE Transactions on Biomedical Engineering
- Associate Editor of IEEE Journal of Emerging and Selected Topics on CAS
- Associate Editor of The International Journal on Circuit Theory and Applications

Elisabetta Chicca:

- Co-organizer of the BCCN Workshop on Neuromorphic Engineering 2014 for the Bernstein Conference

Pau-Choo (Julia) Chung:

- IEEE Transactions on Neural Networks and Learning System (TNNLS): AEs
- Multidimensional Systems and Signal Processing (MSSP): AEs

Pedram Mohseni:

- Associate Editor of IEEE Transactions on Neural Systems and Rehabilitation Engineering (2012-present)
- Associate Editor of IEEE Transactions on Biomedical Circuits and Systems (2008-present)

Milutin Stanaćević:

- Associate Editor of IEEE Transactions on Biomedical Circuits and Systems (2010 – present)

Sameer Sonkusale:

- Guest Editor, IEEE Transactions on Biomedical Circuits and Systems (Special Issue of BIOCAS 2014)

Manuel Delgado-Restituto:

- Editor in Chief of the IEEE Journal on Emerging and Selected Topics in Circuits and Systems (2014 – present)

Kea-Tiong (Samuel) Tang:

- Guest Editor, IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS), Special Issue on "Microwatts Wireless", September 2014.
- Associate Editor, IEEE Transaction on Biomedical Circuits and Systems (TBioCAS), 2014~2015.

Julius Georgiou:

- Associate Editor of IEEE Transactions on Biomedical Circuits and Systems (2011 – present).
- Associate Editor of Frontiers in Neuromorphic Engineering (2011-present).

Abbes Amira:

- Member of the Editorial Board of: The International Journal of Computer Vision and Signal Processing.
- Member of the Editorial Board of: The EURASIP Journal on Image and Video Processing.

Donald Lie:

- Associate Editor, IEEE Microwave and Wireless Components Letters (MWCL)
- Associate Editor-in-Chief, Open Journal of Applied Biosensor (OJAB)
- Editorial Board Member, i-manager's Journal on Electrical Engineering
- International Interdisciplinary Advisory and Editorial Board (IIAEB), International Journal of Interdisciplinary Research and Innovation (IJIRI)

Demarchi Danilo:

- Associate Editor, BioNanoScience, Springer

Chua-Chin Wang:

- Associate Editor, IEICE Trans. on Electronics
- Associate Editor, J. of Signal Processing Systems

Xiao Liu:

- Associate Editor for IEEE Transactions on Circuits and Systems II (2014-present)
- Guest Editor for the Special Issue on Biomedical and Bioelectronic Circuits for Enhanced Diagnosis and Therapy, in TCAS-II

Alex Fish:

- Editor-in-Chief, Journal of Low Power Electronics and Applications, MDPI, (2010 – present).
- Associate Editor, IEEE Sensors Journal, since (2010 – present).
- Associate Editor, IEEE Access Journal, since (2013 – present).
- Associate Editor, Integration, the VLSI Journal, Elsevier, (2013 – present).
- Associate Editor, Microelectronics Journal, Elsevier, (2013 – present).

9) Awards, Honors, Patents

Man-Kay Law:

- M. K. Law, A. Bermak and H. C. Luong, “Low voltage low power sub-threshold CMOS temperature sensor circuit”, US Patent 8,931,953, Jan. 13, 2015

Tsung-Yi Ho:

- Hans Fischer Fellowship, Institute for Advanced Study, Technical University of Munich, Germany
- JSPS Invitation Fellowship, Japan Society for the Promotion of Science, Japan
- Award for Junior Research Investigators, Academia Sinica, Taiwan

Paul P. Sotiriadis:

- Broadcom Foundation USA, Research Award, 2014
- Finalist in the 2014 Broadcom Foundation USA Research Competition, Irvine, USA

Yong Lian:

- 2014 Chen-Ning Yang Award in Science and Technology for New Immigrant

Shuenn-Yuh Lee:

- IEEE Solid-State Circuits Society Tainan Chapter Chair

Andrew Mason:

- Best Student Paper Finalist, IEEE Int. Symp. Circuits and Systems (ISCAS), May 2014

Maysam Ghovanloo:

- M. Ghovanloo, “Systems and Methods for Multichannel Wireless Implantable Neural Recording,” US patent 8,958,868, Applied: May 18, 2009, Granted: Feb. 17, 2015.

- Selected as an IEEE Circuits and Systems Society Distinguished Lecturer for 2015-2016. On topics: "Implantable and Wearable Microelectronic Devices to Improve Quality of Life for People with Disabilities" and "Efficient Power and Wideband Data Transmission in Near Field."

Jie Chen:

- Elected as a Fellow of the Engineering Institute of Canada, January 2014. The Engineering Institute includes all engineering disciplines (electrical, civil, mechanical, chemical, aerospace, biomedical engineers)

Themis Prodromakis:

- Visiting Professor, Centre for Quantum Information and Interdisciplinary Science and Technology, National University of Defense Technology, Changsha, October 2014, China.
- P1. T. Prodromakis and D. Moschou, "A sensor for use in analyzing biomolecules", GB 1415405.8.
- P2. T. Prodromakis and D. Moschou, "A PCB integrated reference electrode", GB 1415406.6.
- P3. T. Prodromakis and D. Moschou, "A microfluidic chip connector assembly", GB 1415404.1.

Zhiping Lin:

- M. E. H. Ong, Z. Lin, W. Ser and G.-B. Huang, "Method of predicting acute cardiopulmonary events and survivability of a patient," US patent No. 8,932,220, 15 Jan. 2015.

Amine Bermak:

- Fellow of IEEE, for contributions to sensing and processing of vision and olfactory circuits and system
- IEEE Distinguished Lecturer for CAS society

Wouter A. Serdijn:

- IEEE Distinguished Lecturer (2013-2014)

Edmund Lam:

- IEEE Fellow (2015)

Viktor Gruev:

- S. Achilefu, Y. Liu, V. Gruev, J. P. Culver, W. Akers and A. Bauer, "Goggle imaging systems and methods," patent pending 2014.
- V. Gruev and S Powell, "Calibration of Polarization Imaging Sensors" patent pending 2014.

Eugenio Culurciello:

- Eugenio Culurciello new startup TeraDeep won a Structure Data award as one of most-promising startups to launch in 2014.
- TeraDeep was invited to the Re.Work Deep Learning Summit.
- TeraDeep is one of 60 Hot Startups to Watch! TeraDeep is on the list of "EE Times Silicon 60: Hot Startups to Watch"

Robert Rieger:

- Macronix Award 2014 of the IEEE Tainan Section for outstanding contributions to advances of circuit design for wearable and implantable biomedical applications
- NSYSU Academic Research Excellence Award 2014-2015
- National Sun Yat-Sen University Young Scholar Award 2014

- Patent US8,990,137 B2, "Apparatus for memristor/neuron emulation and testing", Sun, Y.; Rieger, R., March 2015.
- Patent TW100102616, Piezo-Electric Transducer System and Signal Processing Method Thereof, R. Rieger, July 2014.

Christoph Posch:

- C. Posch et al, „Method for the generation of an image in electronic form, picture element (pixel) for an image sensor for the generation of an image as well as image sensor“, US 8780240 B2

Sandro Carrara:

- Irene Taurino, Magrez Arnaud, Forro Laszlo, Giovanni De Micheli, Sandro Carrara, Close and Selective Integration of Carbon Nanomaterials by CVD onto working microelectrodes of multi sensing electrochemical biosensors, PCT application n° PCT/IB2014/064528 filed September 15, 2014

Timothy Constandinou:

- IEEE Early-Career Fellowship

Mohamad Sawan:

- Polytechnique Montreal's First Research and Innovation 2014 Award
- Mirbozorgi, A., Sawan, M., Gosselin, B., "Smart Multicoils Inductively-coupled Array for Wireless Power Transmission", Patent Pending, PCT/IB2014/062595, June 2014.

Pedram Mohseni:

- P. Mohseni, P. A. Garris, and B. Bozorgzadeh, Methods and Associated Neural Prosthetic Devices for Control of Brain Neurochemistry, Invention Disclosure No. 2015-2896, Case Western Reserve University, April 2015
- R. J. Nudo, P. Mohseni, D. Guggenmos, and M. Azin, Methods and Associated Neural Prosthetic Devices for Bridging Brain Areas to Improve Function, U.S. Patent No. 9,008,780 Awarded on April 14, 2015
- P. Mohseni, M. Suster, U. Gurkan, and M. Bakhshiani, Sensor Apparatus, System and Methods of Making and Using Same, U.S. Provisional Application No. 62006560 Filed on June 2, 2014

Milutin Stanačević:

- P. Gouma and M. Stanačević, "Gas Sensor with Compensations for Baseline Variations", United States Patent 8,955,367 B2, February 17, 2015.

Sameer Sonkusale:

- Invited participant at the National Academies (NAS) Frontiers Meeting on Science Engineering and Medicine, Arab-America Frontiers Meeting, Muscat Oman, December 2014
- Won Best Paper Award, IEEE Biomedical Circuits and Systems Conference (BIOCAS), 2014
- Nominated for Best Poster Award, International Conf. on Miniaturized Systems for Chemistry and Lifesciences (microTAS), 2014
- Recipient of two National Academies Arab-American Frontiers Fellowship, 2015 with seed grant for collaborative research with researchers in Middle East and North Africa.

Manuel Delgado-Restituto:

- European Patent WO2014016458 A1, "Wireless range-finding system for the monitoring of static and dynamic variables," M. Delgado-Restituto, J. A. Rodríguez, J. Ruiz-Amaya, Jens Masuch, and A. Rodríguez-Pérez.

Kea-Tiong (Samuel) Tang:

- Superior award, the 14th Golden Silicon Award, 2014

- Outstanding Young Scholar Project, Ministry of Science and Technology, 2014-2017
- Special Design Award, National Chip Implementation Center, 2014
- Best paper Award, 2014 IEEE International Symposium on Bioelectronics and Bioinformatics (ISBB2014)
- Outstanding Design Award, National Chip Implementation Center, 2014
- Wu Ta-You Memorial Award, Ministry of Science and Technology, 2014
- Outstanding Project Award, National Program of Intelligent Electronics, MOST, 2014
- National Innovation Award, 2014

Karim G. Oweiss:

- K. Oweiss, M. Aghagolzadeh, "Multiscale Intra- - Cortical Neural Interface System" US Patent 20,110,307,079

Julius Georgiou:

- WO/2014/037808, "Hybrid MEMS Microfluidic Gyroscope", Julius Georgiou, Charalambos Andreou
- WO/2014/199240, "All-CMOS, Low-voltage, Wide-temperature range, Voltage Reference" , Julius Georgiou, Charalambos Andreou.

Abbes Amira:

- 2014 IEEE/ACS AICCSA prize for the best paper award (PhD forum)

Donald Lie:

- Best Paper Award, "A Wideband Envelope Modulator Design for Envelope-Tracking SiGe Power Amplifier (ET-PA) for Broadband Wireless Applications", Y. Li, J. Lopez and D.Y.C. Lie, Proc. IEEE 10th Int'l Conf. Wireless & Mobile Comm. (ICWMC 2014), pp.76-83, Seville, Spain, June 22-26 (2014)

Arindam Basu:

- A. Basu, Y. Enyi and Chen Yi, "Compact, Low-Power, Machine Learning System Utilizing Physical Device Mismatch For Classifying Binary Encoded Or Pulse Frequency Encoded Digital Input With Application To Neural Decoding" SG provisional patent 10201406665V.

10) Publications

10.1 Books and Book Chapters

- A 240 G-ops/s Mobile Coprocessor for Deep Neural Networks, Vinayak Gokhale, Jonghoon Jin, Aysegul Dundar, Berin Martini and Eugenio Culurciello, IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops 2014, Columbus, OH
- An Efficient Implementation of Deep Convolutional Neural Networks on a Mobile Coprocessor, Jonghoon Jin, Vinayak Gokhale, Aysegul Dundar, Bharadwaj Krishnamurthy, Berin Martini and Eugenio Culurciello, IEEE International Midwest Symposium on Circuits and Systems (MWSCAS) 2014, College Station, TX.
- BHUNIA, S., MAJERUS, S., SAWAN, M., "Implantable Biomedical Microsystems: Design Principles and Applications", Book, Elsevier, 2015.
- E. Chicca, Martin Nawrot, Michael Schmuker, "Neuromorphic Sensors, Olfaction" in "Encyclopedia of Computational Neuroscience" Dieter Jaeger (Ed.), Ranu Jung (Ed.), Springer-Verlag, 2014
- E. Neftci, C. Posch, E. Chicca, "Neuromorphic Engineering" in "Computational Intelligence" Hisao Ishibuchi (Ed.) in Encyclopedia of Life Support Systems(EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, 1 October 2014

- K. Oweiss (Section Editor) (2014) "Brain Machine Interface: Overview" in Springer Encyclopedia of Computational Neuroscience (Dieter Jaeger & Ranu Jung, Eds), Springer Verlag
- M. Delgado-Restituto and A. Rodríguez-Pérez, "Neural Recording Interfaces for Intracortical Implants", in "Implantable Biomedical Microsystems. Design Principles and Applications" S. Bhunia, S. Majerous, M. Sawan (Eds.), p.17-43, Elsevier, 2015.
- Memory Access Optimized Routing Scheme for Deep Networks on a Mobile Coprocessor, Aysegul Dundar, Jonghoon Jin, Vinayak Gokhale, Berin Martini and Eugenio Culurciello, IEEE High Performance Extreme Computing (HPEC) 2014, Boston, MA.
- MILED, A., SAWAN, M., "Brain-machine Interfaces for cell manipulation and detection", Book Chapter, Bioelectronics, Cambridge University Press, 2014.
- Sandro A.P. Haddad and Wouter A. Serdijn: 超低功耗生物医学信号处理：用于起搏器的模拟小波滤波器方法(Ultra Low-Power Biomedical Signal Processing: an analog wavelet filter approach for pacemakers), Xi'an Jiaotong University Press (in collaboration with Springer), 2014, ISBN: 978-7-560-56777-8.
- Trends in Digital Signal Processing - A Festschrift in Honour of A. G. Constantinides, Editors: Y. C. Lim, H. K. Kwan, W.-C. Siu, Pan Stanford Series on Digital Signal Processing - Volume 1, Singapore, July 2015.
- Y. Luo, K. Chakrabarty, and T.-Y. Ho, Hardware/Software Co-Design and Optimization for Cyberphysical Integration in Digital Microfluidic Biochips, Springer, 2014.
- A. Amira, N. Ramzan, C. Grecos, Q. Wang, P. Casaseca, Z. Pervez, X. Wang and C. Luo "A Reconfigurable Supporting Connected Health Environment for People with Chronic diseases" book chapter (Chapter 17- page 332) in Healthcare Informatics and Analytics: Emerging Issues and Trends" IGI Global 2015.
- R.M. Jiang, A. Bouridane, A. Amira "Color Saliency Evaluation for Video Game Design", book chapter in "Advances in Low-Level Color Image Processing", pp 409-425, Springer Verlag, 2014.
- D. Demarchi and A. Tagliaferro. Carbon for sensing devices. Springer, October 2014.
- C. Ottone, M. Laurenti, P. Motto, S. Stassi, and D. Demarchi. Nanowires. Synthesis, Electrical Properties and Uses in Biological Systems. In Luke J Wilson, editor, ZnO Nanowires: Synthesis Approaches and Electrical Properties. Nova Publishers, New York, April 2014.

10.2 Journals

- A. Eleryan, M. Vaidya, J. Southerland, I. Badreldin, K. Balasubramanian, A. Fagg, N. Hatsopoulos, and K. Oweiss (2014) "Tracking Single Units in Chronic Recordings in the Macaque Motor Cortex for Brain Machine Interface Applications", *Frontiers in Neural Engineering* 7:23. doi:10.3389/fneng.2014.00023
- A. Rodríguez-Pérez, M. Delgado-Restituto and F. Medeiro, "A 515nW, 0-18 dB Programmable Gain Analog-to-Digital Converter for In-Channel Neural Recording Interfaces," *IEEE Transactions on Biomedical Circuits and Systems*, Vol.8(3), pp. 358- 370, June 2014.
- A. Worapishet and A. Demosthenous, "Generalized analysis of random common-mode rejection performance of CMOS current feedback instrumentation amplifiers, *IEEE Transactions on Circuits and Systems I – Regular Papers*, DOI: 10.1109/TCSI.2015.2411794
- Aaron C. Chan, Vivek J. Srinivasan, and Edmund Y. Lam, "Maximum likelihood Doppler frequency estimation under decorrelation noise for quantifying flow in optical coherence tomography," *IEEE Transactions on Medical Imaging*, vol. 33, no. 6, pp. 1313–1323, June 2014.
- Andy K.S. Lau, Terence T.W. Wong, Kenneth K.Y. Ho, Matthew T.H. Tang, Antony C.S. Chan, Xiaoming Wei, Edmund Y. Lam, Ho Cheung Shum, Kenneth K.Y. Wong, and Kevin K. Tsia, "Interferometric time-stretch microscopy for ultrafast quantitative cellular and tissue imaging at 1 μ m," *Journal of Biomedical Optics*, vol. 19, no. 7, pp. 076001, July 2014.
- Bo Wang, Man Kay Law, Amine Bermak, and Howard C. Luong, "A Passive RFID Tag Embedded Temperature Sensor with Improved Process Spreads Immunity for a -30oC to 60oC Sensing Range," *IEEE Transactions on Circuits and Systems-I*, Issue 2, Vol. 61, pp 337-346, 2014.
- C. Eder, V. Valente, N. Donaldson, and A. Demosthenous, "A CMOS smart temperature and humidity sensor with combined readout," *Sensors (Basel)*, vol. 14, no. 9, pp. 17192–17211. DOI: 10.3390/s140917192

- C. L. Wei, Y. W. Wang, and B. D. Liu, "Wide-Range Filter-Based Sinusoidal Wave Synthesizer for Electrochemical Impedance Spectroscopy Measurements," *IEEE Transactions on Biomedical Circuits and Systems*, Vol. 8, No. 3, pp. 442–450, June 2014.
- C. Y. Huang, D. O'Hare, I. J. Chao, H. W. Wei, Y. F. Liang, B. D. Liu, M. H. Lee, and H. Y. Lin, "Integrated Potentiostat for Electrochemical Sensing of Urinary 3-Hydroxyanthranilic Acid with Molecularly Imprinted Poly(ethylene-co-vinyl alcohol)," *Biosensors and Bioelectronics*, Vol. 67, pp. 208–213, May 2015
- Camilla Baj-Rossi, Enver G. Kilinc, Sara S. Ghoreishzadeh, Daniele Casarino, Tanja Rezzonico Jost, Catherine Dehollain, Fabio Grassi, Laura Pastorino, Giovanni De Micheli and Sandro Carrara, Full Fabrication and Packaging of an Implantable Multi-panel Device for Monitoring of Metabolites in Small Animals, *IEEE Transaction on Biomedical Circuit and Systems*, TBCAS 8(2014) 636-647
- Christine Nardini† and Sandro Carrara†, Yuanhua Liu, Valentina Devescovi, Youtao Lu, Xiaoyuan Zhou, i-Needle: Detecting the Biological Mechanisms of Acupuncture, *Science* 346 (6216 Suppl), S21-S22 (2014) (by AAAS, † These authors contributed equally to this invited work)
- Chun-Rong Huang, Pau-Choo Chung, Di-Kai Yang, Hsing-Cheng, "Maximum a Posteriori Probability Estimation for Online Surveillance Video Synopsis", *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 24 Issue 8, pp 1-13, August 2014
- CJ Deepu, XY Zhang, WS Liew, D Wong, and Y Lian, "An ECG-on-Chip with 535-nW/Channel Integrated Lossless Data Compressor for Wearable Sensors", *IEEE Journal of Solid-State Circuits*, vol.49, No.11, pp.2435-2448, Nov. 2014 (Invited paper).
- D. Barsakcioglu, Y. Liu, P. Bhunjun, J. Navajas, A. Eftekhar, A. Jackson, R. Quian Quiroga, and T. G. Constandinou, "An analogue front-end model for developing neural spike sorting systems," *IEEE Transactions in Biomedical Circuits and Systems*, vol. 8, no. 2, pp. 216-227, 2014
- D. Carta, G. Mountjoy, A. Regoutz, A. Khat, A. Serb, and T. Prodromakis, "X-ray absorptionspectroscopy study of TiO₂-x thin films for memory applications", *The Journal of Physical Chemistry C*, 1-40, 2015
- D. G. Chen*, F. Tang*, M-K Law, and A. Bermak, "A 12 pJ/pixel Analog-to-Information Converter based 816 x 640 CMOS Image Sensor," *IEEE Journal of Solid-State Circuits*, Vol 49, Issue 5, pp.1210-1222, May 2014.
- D. G. Chen, F. Tang, M. K. Law, X. Zhong and A. Bermak, "A 64-fJ/step 9-bit SAR ADC Array with Forward Error Correction and mixed-signal CDS for CMOS Image Sensors," *IEEE Trans. on Circuits and Systems-I (TCAS-I)*, vol. 61, issue 11, pp. 3085-3093, Nov. 2014.
- D. G. Chen, F. Tang, M-K Law, and A. Bermak, "A 64 fJ/state 9-bit SAR ADC Array with Forward Error Correction and mixed-signal CDS for CMOS Image Sensors," *IEEE Transactions on Circuits and Systems I*, Vol. 61, pp. 3085 – 3093, 2014.
- D. Jiang, D. Cirmirakis and A. Demosthenous, "A vestibular prosthesis with highly-isolated parallel multi- channel stimulation," *IEEE Transactions on Biomedical Circuits and Systems*, vol. 9, no. 1, pp. 124–37, Feb. 2015.
- D.G. Chen*, M.K. Law*, Y. Lian and Amine Bermak, "Low-Power CMOS Laser Doppler Imaging Using Non-CDS Pixel Readout and 13.6-bit SAR ADC," *IEEE Transactions on Biomedical Circuits and Systems*, 2014
- Deng, S.-L.; Rieger, R.; Lin, Y.-B.; "Programmable ExG Biopotential Front-end IC for Wearable Applications," *IEEE Transactions on Biomedical Circuits and Systems*, vol. 8, no. 4, pp. 543-551, August 2014.
- Denis Chen, Fang Tang, Amine Bermak, "A Low-power Pilot-DAC based Column Parallel 8b SAR ADC with Forward Error Correction for CMOS Image Sensors," *IEEE Transactions on Circuits and Systems-I, Regular Papers*, vol.60, no.10, pp.2572-2583, Oct. 2013.
- E. Chicca, F. Stefanini, C. Bartolozzi, and G. Indiveri. Neuromorphic electronic circuits for building autonomous cognitive systems. *Proceedings of the IEEE*, 102(9):1367–1388, Sep 2014.
- F. Corradi, D. Zambrano, M. Raglianti, G. Passetti, C. Laschi, and G. Indiveri. Towards a neuromorphic vestibular system. *Biomedical Circuits and Systems*, *IEEE Transactions on*, 8(5):669–680, Oct 2014.
- FACCHIN, S., MILED, M.A., SAWAN, M., "In-Channel Constriction Valve For Cerebrospinal Fluid Sampling", *IEEE Trans. on Magnetics*, Vol. 51, No. 3, April 2015.

- Fang Tang*, Amine Bermak, Abbas Amira, Mohieddine Amor Benammar, Debiao He, Xiaojin Zhao, "Two Steps Single Slope/SAR ADC With Error Correction For CMOS Image Sensor", *The Scientific World Journal*, Vol. 2014, Article ID 861278, pp. 1-6, 2014.
- Fang Tang*, Amine Bermak, Abbas Amira, Mohieddine Amor Benammar, "Continuous-Time Sigma Delta ADC With Implicit Variable Gain Amplifier For CMOS Image Sensor", *The Scientific World Journal*, Vol. 2014, Article ID 208540, pp. 1-8, 2014.
- Fang Tang*, Amine Bernak, "CMOS On-Chip Stable True-Random ID Generation Using Antenna Effect", *IEEE Electron Device Letters*, Vol. 35, pp. 54-56, 2014.
- Fang Tang, Denis Chen, Amine Bermak, "Low-Power CMOS Image Sensor Based on Column-Parallel Single-Slope/SAR Quantization Scheme," *IEEE Transaction on Electron Devices*, vol. 60, no. 8, pp. 2561-2566, Aug. 2013.
- Feng Geng, James Z Xing, Jie Chen, Ray Yang, Yollanda Hao, Kun Song and Beihua Kong, "Pegylated Glucose Bound Gold Nanoparticles for Improved In-vivo Bio-distribution and Enhanced Radiotherapy on Cervical Cancer," *Journal of Biomedical Nanotechnology* 2014, 10(7):1205-16
- G. Calabrese, P. Brady, V. Gruev, and M. Cumming, "Polarization Signaling in Swordtails Alters Female Mate Preference," *Proceedings of National Academy of Sciences*, Vol. 111, No. 37, pp. 13397-13402, 2014.
- GHANE-MOTLAGH, B., SAWAN, M., "High-Density Implantable Microelectrode Arrays for Brain-Machine Interface Applications", *Advances in Science and Technology*, Vol. 96, 2014, pp. 95-101.
- GHANNOUM, A., GHAFAR-ZADEH, E., SAWAN, M., "Image Processing System Dedicated to a Visual Intra-Cortical Stimulator", *IET Image Processing*, Vol. 8, No. 12, 2014, pp. 846-855.
- H. Li, X. Mu, Y. Yang, A. J. Mason, "Low power Multi-mode Electrochemical Gas Sensor Array System for Wearable Health and Safety Monitoring," *IEEE Sensors J*, Oct. 2014.
- H. Park and M. Ghovanloo, "Wireless communication with intraoral devices using off-the-shelf antennas," *IEEE Trans. on Microwave Theory and Techniques*, vol. 62, no. 12, pp. 3205-3215, Dec. 2014.
- H.-M. Lee, K. Kwon, W. Li, and M. Ghovanloo, "A power-efficient switched-capacitor stimulating system for electrical/optical deep brain stimulation," *IEEE Journal of Solid-State Circuits*, vol. 50, no. 1, pp. 360-374, Jan. 2015.
- HACHED, S., LOUTOCHIN, O., CORCOS, J., M., SAWAN, M. "A Novel Remotely-controlled Artificial Urinary Sphincter: A Retro-compatible Device", *IEEE/ASME Transactions on Mechatronics*, Vol. 19, No. 4, 2014, pp. 1352-1362.
- Hu Y, Georgiou P, "A Robust ISFET pH-Measuring Front-End for Chemical Reaction Monitoring", *IEEE Transactions on Biomedical Circuits and Systems*, Vol:8, ISSN:1932-4545, Pages:177-185
- I. Badreldin, K. Oweiss, (2014), "A Design and Implementation Framework for Unsupervised High-resolution Recursive Filters in Neuromotor Prosthesis Applications," *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA
- I. Badreldin, K. Oweiss, 2014) "Neural Decoding", in *Springer Encyclopedia of Computational Neuroscience* (Dieter Jaeger & Ranu Jung, Eds), Springer Verlag
- Ieng, S.-H.; Posch, C.; Benosman, R., "Asynchronous Neuromorphic Event-Driven Image Filtering," *Proceedings of the IEEE*, vol.102, no.10, pp.1485,1499, Oct. 2014.
- Irene Taurino, Arnaud Magrez, Federico Matteini, Andrea Cavallini, László Forró, Giovanni De Micheli, and Sandro Carrara, High performance multi-panel biosensors based on a selective integration of nanographite petals, *Nano Letters* 14(2014) 3180–3184.
- J Tan, WS Liew, CH Heng, and Y Lian, "A 2.4GHz ULP Reconfigurable Asymmetric Transceiver for Single-Chip Wireless Neural Recording IC", *IEEE Transactions on Biomedical Circuits and Systems*, Vol.8, No.4, pp. 497-509, Aug. 2014.
- Jianbing Xu, Luoqin Yu, Xiaoming Wei, Xie Wang, Po Ching Chui, Kin Tak Chan, Edmund Y. Lam, Nikki P. Lee, and Kenneth K.Y. Wong, "Simultaneous dual-band optical coherence tomography for endoscopic applications," *Journal of Biomedical Optics*, vol. 19, no. 12, pp. 126007, December 2014.
- JUDY, M., SODAGAR, A., LOTFI, R., SAWAN, M., "Nonlinear Signal-Specific ADC for Efficient Neural Recording in Brain-Machine Interfaces", *IEEE Transactions on Biomedical Circuits and Systems*, Vol. 8, No. 3, 2014, pp. 371-381.
- K. Hu, F. Yu, T.-Y. Ho, and K. Chakrabarty, "Testing of Flow-Based Microfluidic Biochips: Fault Modeling, Test Generation, and Experimental Demonstration," *IEEE Transactions on Computer-*

- Aided Design of Integrated Circuits and Systems (IEEE TCAD), vol. 33, no. 10, pp. 1463-1475, October 2014 (Regular Paper) (Best Paper Award).
- K. Limnusun, H. Lu, H. J. Chiel, and P. Mohseni, "A bidirectional neural interface SoC with an integrated spike recorder, microstimulator, and low-power processor for real-time stimulus artifact rejection," *J. Analog Integr. Circ. Sig. Process.*, vol. 82, no. 2, pp. 457-470, February 2015.
 - K. Limnusun, H. Lu, H. J. Chiel, and P. Mohseni, "Real-time stimulus artifact rejection via template subtraction," *IEEE Trans. Biomed. Circuits and Systems*, vol. 8, no. 3, pp. 391-400, June 2014.
 - K. M. Lei, P. I. Mak, M. K. Law and R. P. Martins, "NMR-DMF: A Modular Nuclear Magnetic Resonance-Digital Microfluidics System for Biological Assays," *Analyst*, 2014, 139, 6204-6213.
 - K. Oweiss, I Badreldin, (invited review) (2014) "Neuroplasticity subserving the operation of Brain machine Interfaces," *Journal of Neurobiology of Disease*, in press
 - KASSAB, A., LELAN, J., VANNASING, P., SAWAN, M., "Functional Near-Infrared Spectroscopy Caps for Brain Activity Monitoring: A Review", *Applied Optics*, Vol. 54, No. 3, Jan. 2015, pp. 576-586.
 - KROUCHEV N., DANNER, S., VINET, A., RATTAY, F., SAWAN M., "Energy-optimal Electrical-stimulation Pulses Shaped by the Least-Action Principle", *PLoS One*, Vol. 9, No. 3, e90480, On line, 2014.
 - L. Constantinou, R. Bayford and A. Demosthenous, "A wideband low distortion CMOS current driver for tissue impedance analysis," *IEEE Transactions on Circuits and Systems II – Express Briefs*, vol. 62, no. 2, pp. 154–158, Feb 2015.
 - L. H. C. Ferreira, S. Sonkusale, "A 0.25V 28nm 58dB dynamic range asynchronous delta sigma modulator in 130nm digital CMOS process", *IEEE Transactions on VLSI Systems*, vol. 23, no. 5, May 2015, pp. 926-934
 - LAFLAMME-MAYER, BLAQUIÈRE, Y., SAVARIA, Y., SAWAN, M., "A Configurable Multi-Rail Power and I/O Pad Applied to Wafer-Scale Systems", *IEEE-TCAS-I*, Vol. 61, No. 11, 2014, pp. 3135-3144.
 - LAFLAMME-MAYER, BLAQUIÈRE, Y., SAWAN, M., "A Configurable Analog Buffer Dedicated to a Wafer-Scale Prototyping Platforms", *Springer Analog Integrated Circuits and Signal Processing Journal*, Vol. 82, No. 1, 2015, pp. 57-66.
 - LI, N., SAWAN, M., "Neural Signal Compression Using a Minimum Euclidean or Manhattan Distance Cluster-Based Deterministic Compressed Sensing Matrix", *Elsevier Biomedical Signal Processing and Control*, Vol. 19, May 2015, pp. 44-55.
 - Liang-Hung Wang, Tsung-Yen Chen, Kuang-Hao Lin, Qiang Fang, and Shuenn-Yuh Lee, "Implementation of a Wireless ECG Acquisition SoC for IEEE 802.15.4 (ZigBee) Applications," *IEEE Journal of Biomedical and Health Informatics*. vol. 19, no.1, pp.247-255, Jan. 2015.
 - Lieke Kros, Oscar H.J. Eelkman Rooda, Jochen K. Spanke, Parimala Alva, Marijn N. van Dongen, Athanasios Karapatis, Else A. Tolner, Christos Strydis, Neil Davey, Beerend H.J. Winkelman, Mario Negrello, Wouter A. Serdijn, Volker Steuber, Arn M.J.M. van den Maagdenberg, Chris I. De Zeeuw and Freek E. Hoebeek: Cerebellar output controls generalized spike-and-wave discharge occurrence, *Annals of Neurology*, DOI: 10.1002/ana.24399.
 - Liping Wei, Samer Doughan, Yi Han, Matthew V. DaCosta, Ulrich Krull, and Derek Ho*, "The Intersection of CMOS Microsystems and Upconversion Nanoparticles for Luminescence Bioimaging and Bioassays", *Sensors*, 14(9), pp. 16829-16855, 2014.
 - Liu N, Koh ZX, Chua EC, Tan LM, Lin Z, Mirza B, Ong MEH. "Risk scoring for prediction of acute cardiac complications from imbalanced clinical data." *IEEE Journal of Biomedical and Health Informatics* 2014; 18(6): 1894-1902.
 - M Aghagolzadeh, A Mohebi, K. Oweiss (2014), "Sorting and tracking neuronal spikes via simple thresholding," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 22:4, pp 858 -869
 - M. Assaad, I. Yohannes and A. Bermak "Two-Stage Interface Circuit Design for a 32-Color Resolution Optical Sensor", *IEEE Sensors Journal*, Vol. 13, Issue 2, pp. 610-617, 2013.
 - M. Bakhshiani, M. A. Suster, and P. Mohseni, "A broadband sensor interface IC for miniaturized dielectric spectroscopy from MHz to GHz," *IEEE J. Solid-State Circuits*, vol. 49, no. 8, pp. 1669-1681, August 2014.
 - M. Coath, S. Sheik, Elisabetta Chicca, G. Indiveri et al., "A robust sound perception model suitable for neuromorphic implementation" *Neuromorphic Engineering*, 7 (278) , p. 1 – 10, 2014

- M. H. Lee , D. O'Hare , Y. L. Chen , Y. C. Chang , C. H. Yang , B. D. Liu, and H. Y. Lin, "Molecularly Imprinted Electrochemical Sensing of Urinary Melatonin in A Microfluidic System," *Biomicrofluidics*, Vol. 8, Iss. 5, Paper # 054115, pp. 1–10, September 2014.
- M. Kiani and M. Ghovanloo, "A 13.56-Mbps pulse delay modulation based transceiver for simultaneous near-field data and power transmission," *IEEE Trans. on Biomed. Circuits and Systems*, vol. 9, no. 1, pp. 1-11, Jan. 2015.
- M. Rahimi Azghadi, N. Iannella, S. Al-Sarawi, G. Indiveri, and D. Abbott. Spike-based synaptic plasticity in silicon: Design, implementation, application, and challenges. *Proceedings of the IEEE*, 102(5):717–737, May 2014.
- M. Vaidya, K. Balasubramanian, J. Southerland, A. Eleryan, I. Badreldin, A. Fagg, K. Oweiss, N. Hatsopoulos "Emergence of coordinated reach-to-grasp
- MAGHAMI, M.H., SODAGAR, A., SAWAN, M., "Analysis and Design of a High-Compliance Ultra-High Output Resistance Current Mirror Employing Positive Shunt Feedback", *Int. Journal on Circuits Theory and Applications*, Online, December 2014.
- Maher Assaad, Mohammed H. Alser and Amine Bermak, "Design and Characterization of Low Power and Low Noise Truly All-Digital Clock and Data Recovery Circuit for SERDES Devices", *Journal of Low Power Electronics*, Volume 9, Number 1, pp. 63-72(10), 2013.
- Marijn N. van Dongen and Wouter A. Serdijn: A Power-Efficient Multichannel Neural Stimulator Using High-Frequency Pulsed Excitation From an Unfiltered Dynamic Supply, *IEEE Transactions on Biomedical Circuits and Systems*, DOI: 10.1109/TBCAS.2014.2363736.
- MENDEZ, A., SAWAN, M., "A DSP for Sensing the Bladder Volume Through Afferent Neural Pathways", *IEEE Transactions on Biomedical Circuits and Systems*, Vol. 8, No. 4, 2014, pp. 552-564.
- MIRBOZORGI, A., BAHRAMI, H., SAWAN, M., GOSELIN, B., "A Smart Multicoil Inductively-coupled Array for Wireless Power Transmission", *IEEE Transactions on Industrial Electronics*, Vol. 61, No. 11, 2014, pp. 6061-6070.
- MIRZAEI, M., SAWAN, M., "Microelectronics-based Biosensors Dedicated to the Detection of Neurotransmitters: A Review", *Special Issue on Implantable Sensors*, *Sensors Journal*, Vol. 14, No. 10, 2014, pp. 17981-18008.
- Miscourides, N.; Georgiou, P., "Impact of Technology Scaling on ISFET Performance for Genetic Sequencing," *Sensors Journal*, *IEEE* , vol.PP, no.99, pp.1,1 doi: 10.1109/JSEN.2014.2372851
- MOAZZENI, S., SAWAN, M., COWAN, G., "An Ultra-Low-Power Energy-Efficient Dual-Mode Wake-Up Receiver", *IEEE Transactions on Circuits and Systems-I*, Online, October 2014.
- MORADI, A., SAWAN, M., "A New Differential Rail-To-Rail Voltage-Controlled Quadrature Ring-Oscillator For Low-Power Implantable Transceivers", *The Institution of Engineering and Technology (IET) Electronics Letters*, Vol. 50, No. 22, 2014, pp. 1568-1570, and Featured page, 2014, pp. 1558.
- MORADI, A., SAWAN, M., "An Energy-Efficient High Data-Rate 915 MHz FSK Wireless Transmitter for Medical Applications", *Springer Analog Integrated Circuits and Signal Processing Journal*, Vol. 83, No. 1, 2015, pp. 85-94.
- N. Roberts, M. How, M. Porter, S. Temple, R. Caldwell, S. Powell, V. Gruev, J. Marshall and T. Cronin, "Seeing the Polarization of Light: Animal Visual Systems and Implications for Optical Processing," *Proceedings of the IEEE*, Vol. 102, No. 10, pp. 1427-1434, 2014.
- NABOVATI, G., GHAFAR-ZADEH, E., MIRZAEI, M., AYALA, G., AWWAD, F., SAWAN, M., "A New Fully Differential Capacitance to Digital Converter for Lab-on-Chip Based Sensing Applications", *IEEE Transactions on Biomedical Circuits and Systems*, Online, November 2014.
- Nan Guo, Ka Wai Cheung, Hiu Tung Wong, and Derek Ho*, "CMOS Time-Resolved, Contact, and Multispectral Fluorescence Imaging for DNA Molecular Diagnostics", *Sensors*, 14(11), pp. 20602-20619, 2014.
- P. Kassanos, L. Constantinou, I. Triantis, and A. Demosthenous, "An integrated analog readout for multi-frequency bioimpedance measurements," *IEEE Sensors J.*, vol. 14, no. 8, pp. 2792–2800, Aug. 2014.
- P. Langlois, N. Neshatvar, and A. Demosthenous, "A sinusoidal current driver with an extended frequency range and multifrequency operation for bioimpedance applications," *IEEE Transactions on Biomedical Circuits and Systems*, DOI: 10.1109/TBCAS.2014.2332136
- P. Langlois, Y. Wu, R. Bayford and A. Demosthenous, "On the application of frequency selective common mode feedback for multifrequency EIT," *Physiological Measurement*, Jun. 2015.

- P. Mostafalu and Sameer Sonkusale, High-density nanowire electrode on paper for biomedical applications, *RSC Advances*, 5(12), pp. 8680-8687, 2015
- PENG K., NGUYEN D.K., TAYAH T., VANNASING P., TREMBLAY, J. SAWAN M., LASSONDE M., LESAGE F., POULIOT, P., "fNIRS-EEG study of focal interictal epileptiform discharges", *Epilepsy Research Journal*, Vol. 108, No. 3, 2014, pp. 491-505.
- Posch, C.; Serrano-Gotarredona, T.; Linares-Barranco, B.; Delbruck, T., "Retinomorphic Event-Based Vision Sensors: Bioinspired Cameras With Spiking Output," *Proceedings of the IEEE*, vol.102, no.10, pp.1470,1484, Oct. 2014
- Q. Li, A. Khat, I. Salaory, C. Papavassiliou and T. Prodromakis, "Memory Impedance of TiO₂-based Metal-Insulator-Metal Devices", *Scientific Reports*, 2014
- R. J. Ober, A. Tahmasbi, S. Ram, Z. Lin, and E. S. Ward, "Quantitative Aspects of Single-Molecule Microscopy," *IEEE Signal Processing Magazine*, vol. 32, No. 1, pp. 58-69, Jan. 2015.
- R. Khor, A. Tizzard, A. Demosthenous, and R. Bayford, "Wearable sensors for patient-specific boundary shape estimation to improve forward model for electrical impedance tomography (EIT) of neonatal lung function," *Physiological Measurement*, vol. 35, no. 6, pp. 1149–1161, Jun. 2014.
- Reddy M, Herrero P, El Sharkawy M, Pesi P, Jugnee N, Thomson H, Pavitt D, Toumazou C, Johnston D, Georgiou P, Oliver N, "Feasibility Study of a Bio-inspired Artificial Pancreas in Adults with Type 1 Diabetes.", *Diabetes Technology & Therapeutics*, ISSN:1520-9156
- Rieger, R.; Lota, J; Liu, X.; "Introduction to the Special Issue on Biomedical and Bioelectronic Circuits for Enhanced Diagnosis and Therapy," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 62, no. 2, February 2015.
- Rieger, R.; Schuettler, M.; Chuang, S.-C.; "A Device for Emulating Cuff Recordings of Action Potentials Propagating Along Peripheral Nerves," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 22, no. 5, pp. 937-945, September 2014.
- S. E. Paraskevopoulou, D. Wu, A. Eftekhar, and T. G. Constandinou, "Hierarchical adaptive means (ham) clustering for hardware-efficient, unsupervised and real-time spike sorting," *Journal of Neuroscience Methods*, vol. 234, pp. 145-156, 2014
- S. Eldawlatly, K. Oweiss, (2014) "Temporal precision in population -but not individual neuron -dynamics reveals rapid experience-dependent plasticity in the rat barrel cortex" *Frontiers in Computational Neuroscience*, Vol 8, doi: 10.3389/fncom.2014.00155
- S. Luan, I. Williams, K. Nikolic, and T. G. Constandinou, "Neuromodulation: present and emerging methods," *Frontiers in Neuroengineering*, vol. 7, no. 27, 2014
- Scott MacKay, David Wishart, James Z. Xing and Jie Chen, "Developing Trends in Aptamer-Based Biosensor Devices and Their Applications," *IEEE Trans. on Biomedical Circuits and Systems*, Vol. 8, No. 1, 2014
- Shih-Wen Chiu, Hsiang-Chiu Wu, Ting-I Chou, Hsin Chen, and Kea-Tiong Tang*, "A Miniature Electronic Nose System Based on a MWNT-Polymer Microsensor Array and a Low-Power Signal Processing Chip", *Analytical & Bioanalytical Chemistry*, pp. 1-10, 2014/01/03, 2014.
- Shih-Wen Chiu, Jen-Huo Wang, Kwang-Han Chang, Ting-Hau Chang, Chia-Min Wang, Chia-Lin Chang, Chen-Ting Tang, Chien-Fu Chen, Chung-Hung Shih, Han-Wen Kuo, Li-Chun Wang, Hsin Chen, Member, IEEE, Chih-Cheng Hsieh, Meng-Fan Chang, Yi-Wen Liu, Tsan-Jieh Chen, Chia-Hsiang Yang, Harming Chiueh, Juyo-Min Shyu, and Kea-Tiong Tang*, "A Fully Integrated Nose-on-a-Chip for Rapid Diagnosis of Ventilator-Associated Pneumonia", *IEEE Transaction on Biomedical Circuits and Systems*, Vol. 8(6), pp. 765-778, 2015.
- Shuenn-Yuh Lee, Jia-Hua Hong, Cheng-Han Hsieh, Ming-Chun Liang, Shih-Yu Chang Chien, and Kuang-Hao Lin, "Low-Power Wireless ECG Acquisition and Classification System for Body Sensor Networks", *IEEE Journal of Biomedical and Health Informatics*. vol. 19, no.1, pp.236-246, Jan. 2015.
- T. Trantidou, M. Tariq, C.M. Terracciano, C. Toumazou and T. Prodromakis, "Parylene C-Based Flexible Electronics for pH Monitoring Applications", *Sensors*, vol. 14, 11629-39, 2014.
- T. York, S. Powell, S. Gao, L. Kahan, T. Charanya, D. Saha, N. Roberts, T. Cronin, J. Marshall, S. Achilefu, S. Lake, B. Raman, and V. Gruev, "Bio-Inspired Polarization Imaging Sensors: From Circuits and Optics to Signal Processing Algorithms and Biomedical Applications," *Proceedings of the IEEE*, Vol. 102, No. 10, pp. 1450-1469, 2014.
- TARIQUS-SALAM, M., GELINAS, S., DESGENT S., DUSS, S., TURMEL, F.B., CARMANT, L., SAWAN, M., NGUYEN, D.K., "Subdural Porous and Notched Mini Grid Electrodes for Wireless Intracranial Electroencephalographic Recordings", *The Journal of Multidisciplinary Healthcare*, Vol. 7, 2014, pp. 573-586

- V. Giagka, C. Eder, N. Donaldson, and A. Demosthenous, "An implantable versatile electrode-driving ASIC for chronic epidural stimulation in rats," *IEEE Transactions on Biomedical Circuits and Systems*, DOI: 10.1109/TBCAS.2014.2330859
- V. Valente, C. Eder, N. Donaldson, and A. Demosthenous, "A high power CMOS class-D amplifier for inductive-link medical transmitters," *IEEE Transactions on Power Electronics*, vol. 30, no. 8, pp. 4477–4488, Aug. 2015.
- X Zhang, and Y Lian, "A 300-mV 220-nW Event-Driven ADC with Real-Time QRSDetection for Wearable ECG Sensors", *IEEE Transactions on Biomedical Circuits and Systems*, Vol.8, No.6, pp.834-843, Dec. 2014.
- Xiaofang Pan, Xi Liu, Amine Bermark, Zhiyong Fan, "Self-gating Effect Induced Large Performance Improvement of ZnO Nanocomb Gas Sensors", *ACS Nano*, 7 (2013) 9318-9324. (Impact Factor: 12)
- Xiaojin Zhao*, Xiaofang Pan*, Xiaolei Fan, Ping Xu, Amine Bermak and Vladimir G. Chigrinov, "Patterned dual-layer achromatic micro-quarter-wave-retarder array for active polarization imaging", *Optics Express*, vol. 22, pp. 8024-8034, 2014.
- Xiaoxiao Zhang, Farid Boussaid*, Amine Bermak, "A 32×32-bit Multi-precision Razor-based Dynamic Voltage Scaling Multiplier with Operands Scheduler," *IEEE Transactions on Very Large Scale Integration Systems*, Vol. 22, Issue 4, pp 759-770, April 2014
- Y. Wong, J. Chao, Z. Lin, R.J. Ober, "Effect of time discretization of the imaging process on the accuracy of trajectory estimation in fluorescence microscopy," *Optical Express*, vol. 22 Issue 17, pp. 20396-20420, Aug., 2014.
- Yael Zilberman, Sameer R. Sonkusale, Microfluidic optoelectronic sensor for salivary diagnostics of stomach cancer, *Biosensors and Bioelectronics*, vol. 67, May 2015, pp. 465-471.
- Yu-Liang Hsu, Pau-Choo (Julia) Chung, Wei-Hsin Wang, Ming-Chyi Pai, Chun-Yao Wang, Chien-Wen Lin, Hao-Li Wu, and Jeen-Shing Wang, "Gait and Balance Analysis for Patients with Alzheimer's Disease Using an Inertial- Sensor-Based Wearable Instrument", *IEEE Journal of Biomedical and Health Informatics*, Volume:18 , Issue: 6, pp 1822 - 1830 , Nov. 2014
- Yu-Po Lin, Hung-Chih Chiu, Ping-Yang Huang, Zong-Ye Wang, Hsiang-Hui Cheng, Yi-Ting Lee, Ji-Fen Chuang, Po-Chiun Huang, Kea-Tiong Tang, His-Pin Ma, Yen-Chung Chang, Shih-Rung Yeh, and Hsin Chen*, "A Battery-less, Implantable Neuro-electronic Interface for Studying the Mechanisms of Deep Brain Stimulation in Rat Models", *IEEE Transaction on Biomedical Circuits and Systems*, accepted.
- Z. Chen, H. Li, Y. Tang, X. Huang, D. Ho, and C. Lee, "Shape-controlled Synthesis of Organolead Halide Perovskite Nanocrystals and their Tunable Optical Absorption," *Materials Research Express*, Vol. 1, No. 1, 2014.
- Z. Wang, M. Guo, G. A. Baker, J. Stetter, L. Lin, A. Mason and X. Zeng, "Methane-oxygen electrochemical coupling in an ionic liquid: a robust sensor for simultaneous quantification," *Analyst*, 139 (20), pp. 5140 – 5147, 2014.
- ZHENG, Y., SAWAN, M., "A BioMEMS Chip with Integrated Micro Electromagnet Array towards Bio-particles Manipulation", *Elsevier Microelectronics Engineering Journal*, Vol. 128, 2014, pp. 1-6.
- Zhenjiang Ni, Sio-Hoi Ieng, Christoph Posch, Stéphane Régnier, and Ryad Benosman, "Visual Tracking Using Neuromorphic Asynchronous Event-Based Cameras", *Neural Computation*, 2015 27:4, 925-953
- E. Kyriakides and J. Georgiou, "A compact, low-frequency, memristor-based oscillator", *International Journal of Circuit Theory and Applications*, 8th Oct. 2014, DOI: [10.1002/cta.2030](https://doi.org/10.1002/cta.2030).
- N. Nicolaou and J. Georgiou, "The Study of EEG Dynamics During Anesthesia with Cross-Recurrence Rate", *Cureus* 6(8): e195, August 2014, doi:10.7759/cureus.195
- C. Andreou, Y. Pahlitas and J. Georgiou, "Bio-inspired micro-fluidic angular-rate sensor for vestibular prostheses", *Sensors* 2014, 14, 13173-13185; July 2014, doi:10.3390/s140713173
- L. Shestopalova, T. M. Böhmer, A. Bendixen, A. G. Andreou, J. Georgiou, G. Garreau, B. Hajdu, S. L. Denham and I. Winkler, "Do Audio-Visual Motion Cues Promote Segregation of Auditory Streams?," *Frontiers in Neuroscience*, Vol. 8, No. 64, 1-11, April 2014.
- N. Nicolaou and J. Georgiou, "Spatial Analytic Phase Difference of EEG activity during anesthetic-induced unconsciousness", *Clinical Neurophysiology*, February 2014, DOI: 10.1016/j.clinph.2014.02.011
- H. Rabah, A. Amira, B.K. Mohanti, S. Almaded, P.K. Meher "FPGA implementation of orthogonal matching pursuit algorithm for compressive sensing reconstruction", *IEEE Transactions on VLSI*, Issue 99, 2015.

- N. Almaadeed, A. Amira, A. Aggoun "Speaker Identification using Multimodal Neural Networks and Wavelet Analysis" IET Biometrics, 2015.
- F. Tang, A. Bermak and A. Amira "CMOS On-Chip Stable True-Random ID Generation Using Antenna Effect" IEEE Electron Device Letters, VOL. 35, No. 1, January 2014.
- F. Tang, A. Bermak, A. Amira, M. Benammar, D. He and X. Zhao, "Two Steps Single Slope/SAR ADC With Error Correction For CMOS Image Sensor," The Scientific World Journal, Volume 2014, 2014.
- B. K. Mohanty, P. K. Meher, S. Al-Maadeed, and A. Amira "Memory Footprint Reduction for Power-Efficient Realization of 2-D Finite Impulse Response Filters", IEEE Transactions on Circuits and Systems—I: REGULAR PAPERS, VOL. 61, No. 1, January 2014.
- Invited book chapter: "Envelope Tracking Techniques Applied to a Fully-Monolithic Silicon-Based RF Power Amplifier System" by Donald Y.C. Lie, Yan Li, and Jerry Lopez in the book "Envelope Tracking Techniques", Wiley Encyclopedia of Electrical and Electronics Engineering (EEE), Editor-in-Chief, Mihai Peterca; Published Online: 14 MAR 2014 pp. 1-13, John Wiley & Sons, Inc.,
- B.T. Nukala, N. Shibuya, A.I. Rodriguez, J. Tsay, T. Q. Nguyen, S. Zupancic and D.Y.C. Lie, "An Efficient and Robust Fall Detection System using Wireless Gait Analysis Sensor with Artificial Neural Network (ANN) and Support Vector Machine (SVM) Algorithms" Open Journal of Applied Biosensor, 2014, 3, 29-39
- A. Bonanno, M. Morello, C. Crepaldi, A. Sanginario, V. Cauda, and D. Demarchi. "A low-power 0.13 μ m CMOS IC for ZnO-nanowire Assembly and Nanowire-based UV Sensor Interface". IEEE Sensors, Paper Accepted, Under Press, doi:10.1109/JSEN.2015.2413293, 2015.
- S. Sapienza, C. Crepaldi, P. Motto Ros, A. Bonanno, and D. Demarchi. "On Integration and Validation of a Very Low Complexity ATC UWB System for Muscle Force Transmission". IEEE Transactions on Biomedical Circuits and Systems, Paper Accepted, Under Press, 2015.
- M. Crepaldi, A. Sanginario, P. Motto Ros, M. Grosso, A. Sassone, M. Poncino, E. Macii, S. Rinaudo, G. Gangemi, and D. Demarchi. "Towards Multi-Domain and Multi-Physical Electronic Design". Circuits and Systems Magazine, IEEE, Paper Accepted, Under Press, 2015.
- M. Noman, A. Sanginario, P. Jagadale, A. Tagliaferro, and D. Demarchi. "Activated carbonized pistachio nut shells for electrochemiluminescence detection". Journal of applied electrochemistry, Paper Accepted, Under Press, doi:10.1007/s10800-015-0813-4:1–6, 2015.
- S. Fiorilli, F. Bains, V. Cauda, M. Crepaldi, C. Vitale-Brovarone, D. Demarchi, and B. Onida. "Electrophoretic deposition of mesoporous bioactive glass on glass–ceramic foam scaffolds for bone tissue engineering". Journal of Materials Science: Materials in Medicine, 26(1):1–12, January 2015.
- E G Villani, M. Crepaldi, D Demarchi, A Gabrielli, A Khan, E Pikhay, Y Roizin, A Rosenfeld, and Z Zhang. "A monolithic 180 nm CMOS dosimeter for In Vivo Dosimetry medical application". Radiation Measurements, 71:389–391, December 2014.
- L. E. Bertassoni, M. Cecconi, V. Manoharan, M. Nikkhah, J. Hjortnaes, A. L. Cristino, G. Barabaschi, D. Demarchi, M. R. Dokmeci, Y. Yang, and A. Khademhosseini. "Hydrogel bioprinted microchannel networks for vascularization of tissue engineering constructs". Lab on a Chip, 14(13):2202–2211, July 2014.
- A. Gabrielli, M. Crepaldi, D. Demarchi, P. Motto Ros, and G. Villani. "Wireless ultra-wide-band transmission prototype ASICs for low-power space and radiation applications". Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 765:219–222, November 2014.
- P. Motto, M. Crepaldi, G. Piccinini, and D Demarchi. "NanoCube: A Low-Cost, Modular, and High-Performance Embedded System for Adaptive Fabrication and Characterization of Nanogaps". IEEE Transactions on Nanotechnology, 13(2):322–334, 2014.
- M.R. Casu, F. Colonna, M. Crepaldi, D. Demarchi, M. Graziano, and M. Zamboni. "UWB microwave imaging for breast cancer detection: Many-core, GPU, or FPGA?" Transactions on Embedded Computing Systems (TECS, 13(3s), March 2014.
- C.-L. Chen, D.-S. Wang, J.-J. Li, and C.-C. Wang, "A voltage monitoring IC with HV multiplexer and HV transceiver for battery management systems," IEEE Trans. on Very Large Scale Integration (VLSI) Systems, vol 23, no. 2, pp. 244-253, Feb. 2015.
- C.-C. Wang, W.-J. Lu, K.-W. Juan, Wei Lin, H.-Y. Tseng, and C.-Y. Juan, "Process corner detection by skew inverters for 500 MHz 2xVDD output buffer using 40-nm CMOS technology," Microelectronics Journal, vol. 46, no. 1, pp. 1-11, Jan. 2015.

- C.-C. Wang, W.-J. Lu, and T.-Y. Tsai, "Analysis of calibrated on-chip temperature sensor with process compensation for HV chips," *IEEE Trans. on Circuits & Systems - II (TCAS-II)*, vol. 62, no. 3, pp. 217-221, Mar. 2015.
- C.-C. Wang, D.-S. Wang, T.-C. Sung, Y.-H. Wu, and D. Shmilovitz, "A +/-10.5 V 16-channel programmable pulse generator using high-voltage BCD CMOS process," *Electronics Letters*, vol. 50, no. 24, pp. 1797-1799, Dec. 2014.
- C.-C. Wang, C.-L. Chen, Z.-Y. Hou, Y. Hu, J.-W. Lee, W.-Y. Lin, Y.-F. Chang, C.-W. Hsu, and M.-H. Song, "A 60V tolerance transceiver with ESD protection for FlexRay-based communication systems," *IEEE Trans. on Circuits & Systems - I (TCAS-I)*, vol. 62, no. 3, pp. 752-760, Mar. 2015.
- S. Hussain, S. C. Liu and A. Basu, "Biologically plausible, Hardware-friendly Structural Learning for Spike-based pattern classification using a simple model of Active Dendrites," *Neural Computation*, vol. 27, no. 4, April 2015.
- S. Roy, *A. Banerjee and A. Basu, "Liquid State Machine with Dendritically Enhanced Readout for Low-power, Neuromorphic VLSI Implementations," *IEEE Trans. on Biomedical Circuits & Systems*, vol. 8, no. 5, pp. 681-695, Nov. 2014.
- R. Gopalakrishnan and A. Basu, "On the non-STDP behavior and its remedy in a Floating-gate Synapse," *IEEE Trans. on Neural Networks & Learning Systems*, available online, Feb. 2015.
- Andersson, O.; Chon, K.H.; Sornmo, L.; Rodrigues, J.N., "A 290mV sub-VT ASIC for Real-Time Atrial Fibrillation Detection", *IEEE Trans Biomed Circuits Syst.* 2014 Oct 16.
- M. Avital, H. Dagan, I. Levi, O. Keren and A. Fish, "DPA-Secured Quasi-Adiabatic Logic (SQAL) for Low-Power Passive RFID Tags Employing S-Boxes", accepted to *IEEE Transactions on circuits and systems – I: Regular papers*, July 2014
- H. Dagan, A. Shapira, A. Teman, A. Mordakhay, S. Jameson, E. Pikhay, V. Dayan, Y. Roizin, E. Socher and A. Fish, "A Low-Power Low-Cost 24-GHz RFID Tag with a C-Flash Based Embedded Memory", *IEEE Journal of Solid State Circuits*, vol 49, issue 9, August, 2014.
- I. Levi, A. Albeck, A. Fish and S. Wimer, "A Low Energy and High Performance DM2 Adder", in press, *IEEE Transactions on circuits and systems – I*, vol. 61, issue 11, November 2014

10.3 Conference Proceedings

- A. Ebraze and P. Mohseni, "A 14pJ/pulse-TX, 0.18nJ/b-RX, 100Mbps, channelized, IR-UWB transceiver for centimeter-to-meter range biotelemetry," in *Proc. IEEE Custom Integr. Circ. Conf. (CICC)*, San Jose, CA, September 15-17, 2014.
- A. Rodríguez-Pérez, M. Delgado-Restituto and A. Rodríguez-Vázquez, "Self-calibration of Neural Recording Sensors," 2014 *IEEE Biomedical Circuits and Systems Conference (BIOCAS)*, Paper 1023, Lausanne, Switzerland, October 2014.
- A. Rodríguez-Pérez, M. Delgado-Restituto, A. Darie, C. Soto-Sánchez, E. Fernández-Jover and A. Rodríguez-Vázquez, "A 330uW, 64-Channel Neural Recording Sensor with Embedded Spike Feature Extraction and Autocalibration," *IEEE Asian Solid-State Circuits Conference, A-SSCC 2014*, Paper 4233, KaoHsiung, Taiwan, November 2014
- A. Rodríguez-Pérez, M. Delgado-Restituto, A. Darie, C. Soto-Sánchez, E. Fernández-Jover and A. Rodríguez-Vázquez, "In vivo measurements with a 64-channel extracellular neural recording integrated circuit," *21st IEEE International Conference on Electronics Circuits & Systems, ICECS*, Paper 2244, Marseille-Provence, France, December 2014
- AHMADI-TAMEH, T., SAWAN, M., KASHYAP, R., "Self-Referencing Ratio-Metric Optical Rotation Sensor for Avionic Application", *OSA- Optical and Photonics Congress*, Barcelona, Spain, July 2014.
- Al-Yamani, J.H.J.; Boussaid, F.; Bermak, A; Martinez, D., "Experimental evaluation of latency coding for gas recognition," *Design and Test Symposium (IDT), 2013 8th International*, vol., no., pp.1,4, 16-18 Dec. 2013.
- B. Bozorgzadeh, D. P. Covey, B. A. Heidenreich, P. A. Garris, and P. Mohseni, "Real-time processing of fast-scan cyclic voltammetry (FSCV) data using a field-programmable gate array (FPGA)," in *Proc. 36th Annu. Int. IEEE Eng. Med. Biol. Conf. (EMBC'14)*, pp. 2036-2039, Chicago, IL, August 26-30, 2014.
- BENDER-MACHADO, CHEREM-SCHNEIDER, M., SAWAN, M., GALUP-MONTORO, C., "Fully-Integrated 86 mV – 1V Step-up Converter for Energy Harvesting Applications", *IEEE-NEWCAS, Trois-Rivières, Canada*, June 2014.

- BENDER-MACHADO, M., SAWAN, M., CHEREM-SCHNEIDER, M., GALUP-MONTORO, C., "10 mV–1V Step-up Converter for Energy Harvesting Applications ", Best paper award, IEEE-SBCCI, Aracaju, Brazil, Sept. 2014.
- C. Basetas, P. Sotiriadis, "Single-Bit-Output All-Digital Frequency Synthesis Using Multi-Step Look-Ahead Band-Pass Σ - Δ Modulator-Like Quantization Processing", IEEE Int. Freq. Contr. Symp. 2015.
- Cheng-Han Hsieh, Chung-Yen Du, and Shuenn-Yuh Lee, "Power Management with Energy Harvesting from a Headphone Jack," 2014 IEEE International Symposium on Circuits and Systems (ISCAS), June 2014, pp. 1989-1992.
- Cheng-Han Hsieh, Ming-Chun Liang, Shih-Yu Chang Chien, Yuan-Sun Chu, Hsing-Chen Lin, and Shuenn-Yuh Lee, "Wearable Electrocardiogram Acquisition and Classification Systems with Different Distributive Operations", 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS 2014), Oct. 2014, pp. 145-148
- D. A. Soysa, D. G. Chen, O. C. Au, and A. Bermak, "Predicting YouTube Content Popularity via Facebook Data: A Network Spread Model for Optimizing Mul- timedia Delivery," Proceeding of IEEE Symposium Series on Computational Intelligence (SSCI),2013, Singapore.
- D. G. Chen, S. Mohamad and A. Bermak, "Protecting Water Resources via Smart-Sensing Infrastructure: From Silicon to Systems", Proceeding of Qatar Annual Research Conference, Doha, November 24 - 25, 2013.
- FACCHIN, S., SAWAN, M., MILED, A., "In-Channel Droplet-Based Micro-Sampling Technique for Lab-On-Chip", IEEE CEFC'14, France, May 2014.
- Ikramullah Shah, D. G. Chen, Moaaz Ahmed and Amine Bermak, "Optical Wireless Receiver for Data Delivery to Retinal Implant", IEEE International Symposium on Circuits and Systems (ISCAS), Melbourne, Australia, 2014.
- Ikramullah Shah, D. G. Chen, Moaaz Ahmed and Amine Bermak, "Optical Wireless Receiver for Data Delivery to Retinal Implant", IEEE International Symposium on Circuits and Systems (ISCAS), Melbourne, Australia, 2014.
- J. Jian and M. Stanačević, "Optimal Position of the Transmitter Coil for Wireless Power Transfer to the Implantable Device", Proc. 36th Ann. Int. Conf. IEEE Engineering in Medicine and Biology Society (EMBC), Chicago 2014.
- K. Hu, T.-Y. Ho, and K. Chakrabarty, "Test Generation and Design-for-Testability for Flow-Based mVLSI Microfluidic Biochips," Proceedings of IEEE VLSI Test Symposium (VTS-2014), pp. 1-6, Napa, CA, April 2014. (Best Paper Nomination)
- K. Limnuson, H. Lu, H. J. Chiel, and P. Mohseni, "A bidirectional neural interface SoC with an integrated spike recorder, microstimulator, and low-power processor for real-time stimulus artifact rejection," in Proc. IEEE Custom Integr. Circ. Conf. (CICC), San Jose, CA, September 15-17, 2014.
- LI, N., SAWAN, M., "High Compression Rate and Efficient Spikes Detection System Using Compressed Sensing Technique for Neural Signal Processing", IEEE-Neural Engineering (NER) Conference, Montpellier, France, April 2015.
- M. A. Suster, B. Blackburn, U. Gurkan, and P. Mohseni, "An RF/microwave microfluidic sensor based on a 3D capacitive structure with a floating electrode for miniaturized dielectric spectroscopy," in Proc. IEEE Sensors Conf., pp. 1784-1787, Valencia, Spain, November 2-5, 2014.
- M. Bakhshiani, M. A. Suster, and P. Mohseni, "A microfluidic-CMOS platform with 3D capacitive sensor and fully integrated transceiver IC for palmtop dielectric spectroscopy," in Dig. Tech. Papers IEEE Int. Solid State Circuits Conf. (ISSCC'15), pp. 386-387, San Francisco, CA, February 22-26, 2015.
- MAGHAMI, MH., SODAGAR, A., SAWAN, M., "Biphasic, Energy-Efficient, Current-Controlled Stimulation Back-End for Retinal Visual Prosthesis", IEEE-ISCAS, Melbourne, Australia, June 2014.
- MENDEZ, A., SAWAN, M., "A custom signal processor based neuroprosthesis intended to recover urinary bladder functions", IEEE-ISCAS, Melbourne, Australia, June 2014.
- MILED, A., SAWAN, M., "Reconfigurable Lab-on-Chip Platform for Algae Cell Manipulation", Invited, IEEE-ISCAS, Melbourne, Australia, June 2014.
- MIRBOZORGI, A., AMELI, R., SAWAN, M., GOSSELIN, B., "Towards a Wireless Optical Stimulation System for Long Term In-Vivo Experiments", Invited, IEEE-EMBC, Chicago, USA, Sept 2014.

- Muhammad Hassan and Amine Bermak, "Discriminative Metrics for Gas Classification with Spike Latency Coding", International Conference on Electronics, Information and Communication (ICEIC), Malaysia, Jan 15-18, 2014.
- Muhammad Hassan and Amine Bermak, "Gas Classification Using Binary Decision Tree Classifier" IEEE International Symposium on Circuits and Systems (ISCAS), Melbourne, Australia, 2014.
- N. Neshatvar, P. J. Langlois, D. Jiang, and A. Demosthenous, "An integrated CMOS current driver using nonlinear," Proc. ISCAS 2015, Lisbon, Portugal, May 2015.
- NABOVATI, G., GHAFAR-ZADEH, E., MIRZAEI, M., AYALA, G., AWWAD, F., SAWAN, M., "Fully Integrated CMOS Capacitive Sensor for Lab-on-Chip Applications", Invited, IEEE-ISCAS, Melbourne, Australia, June 2014.
- NABOVATI, G., GHAFAR-ZADEH, E., SAWAN, M., "Novel DC-input $\Sigma\Delta$ Capacitance-to-Digital Converter for Biosensor Applications", IEEE-NEWCAS, Trois-Rivières, Canada, June 2014.
- P. Gouma, S. Sood, M. Stanačević and S. Simon, "Selective Chemosensing and Diagnostic Breathalyzer", Proc. Eurosensors 2014, 2014.
- P. J.-H. Lee, D. G. Chen, A. Bermak, and M.-K. Law, "A High Voltage Zero-static Current Voltage Scaling ADC Interface Circuit for Micro-Stimulator," Proceeding of IEEE International Symposium on Circuits and Systems (ISCAS), Australia, 2014.
- P. Sotiriadis, "On the Generation of Random Dithering Sequences with Specified Both Power Spectral Density and Probability Density Function", IEEE Int. Frequency Control Symp. 2014.
- P. Zarkos, C. Adamopoulos, I. Vassiliou and P. Sotiriadis, "A Mathematical Model for Time-Domain Analysis and for Parametric Optimization of a Class of Switched Capacitor RF Power Amplifiers", IEEE Int. Conf. on Electronics Circuits and Systems 2014.
- S. Li and M. Stanačević, "Mixed-signal VLSI Independent Component Analyzer for Hearing Aid Applications", Proc. 36th Annu. Int. Conf. IEEE Engineering in Medicine and Biology Society (EMBC), Chicago 2014.
- S. Mohamad, F. Tang, A. Amira, A. Bermak, M. Bennammar, "A Low Power Temperature Sensor based on a Voltage to Time Converter Cell", IEEE International Conference on Microelectronics (ICM), Lebanon, 2013.
- S. Mohamad, F. Tang, A. Amira, A. Bermak, M. Bennammar, "A Low power oscillator based temperature sensor for RFID applications", 5th Asia Symposium on Quality Electronic Design (ASQED), Malaysia , 2013.
- S. Shahdoost, S. Frost, G. Van Acker, S. DeJong, C. Dunham, S. Barbay, R. Nudo, and P. Mohseni, "Towards a miniaturized brain-machine-spinal cord interface (BMSI) for restoration of function after spinal cord injury," in Proc. 36th Annu. Int. IEEE Eng. Med. Biol. Conf. (EMBC'14), pp. 486-489, Chicago, IL, August 26-30, 2014.
- S. Shahdoost, S. Frost, R. Nudo, and P. Mohseni, "A multichannel corticospinal interface IC for intracortical spike recording and distinct muscle pattern activation via intraspinal microstimulation," in Proc. 57th Annu. Int. IEEE Midwest Symp. Circuits and Systems (MWSCAS'14), pp. 310-313, College Station, TX, August 3-6, 2014.
- Tzung-Min Tsai, Hsing-Chen Lin, Shuenn-Yuh Lee, and Soon-Jyh Chang, "Heart Rate Detection Through Bone-Conduction Headset," 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS 2014), Oct. 2014, pp. 65-68.
- V. Giagka, A. Vanhoostenberghe, N. Donaldson, and A. Demosthenous, "Evaluation and optimization of the mechanical strength of bonds between metal foil and aluminum pads on thin ASICs using gold ball studs as micro-rivets," Proc. ESTC 2014, pp. 1-5, Helsinki, Finland, Sept. 2014.
- V. Giagka, N. Saeidi, A. Demosthenous, and N. Donaldson, "Controlled silicon IC thinning on individual die level for active implant integration using a purely mechanical process," Proc. ECTC 2014, pp. 2213-2219, Orlando, FL, May 2014.
- WANG, Y., SAWAN, M., "High-Efficiency CMOS Rectifier Dedicated for Multi-Band Ambient RF Energy Harvesting", IEEE-ICECS, Marseille, France, Dec 2014.
- Y. Yang, C. S. Boling, A. J. Mason, "Power-area efficient VLSI implementation of decision tree based spike classification for neural recording implants," IEEE Biomedical Circuits Systems Conf., pp. 380-383, Nov. 2014.
- Yupeng Zhao, Jida Xing, James Z. Xing, Woon T. Ang, and Jie Chen, "Applications of Low-intensity Pulsed Ultrasound to Increase Monoclonal Antibody Production in CHO Cells Using Shake Flasks or Wavebags," Ultrasonics, Vol. 54, No. 6, 2014, 1439-1447. Invited to speak at

- the Cambridge Healthtech Institute's Annual Recombinant Protein Expression and Production meeting, Jan. 2015 in San Diego, USA.
- ZABIHIAN, A., SODAGAR, A., SAWAN, M., "Distributed Intracortical Neural Interfacing: Network Protocol Design", IEEE-Neural Engineering (NER) Conference, Montpellier, France, April 2015.
 - Zamani and A. Demosthenous, "Power optimization of neural frontend interfaces" Proc. ISCAS 2015, Lisbon, Portugal, May 2015.
 - ZGAREN, M., SAWAN, M., "Frequency-to-Amplitude Converter based FSK Receiver for Ultra-Low Power Transceivers", IEEE-NEWCAS, Trois-Rivières, Canada, June 2014.
 - ZHENG, Y., SAWAN, M., "A Microsystem for Magnetic Immunoassay Towards Protein Toxins Detection", Invited, IEEE-ISCAS, Melbourne, Australia, June 2014.
 - E. Demarchou, J. Georgiou, N. Nicolaou and T. Constandinou, "Anesthetic-induced changes in EEG activity: a graph theoretical approach", BioCAS 2014, pp. 45-48, Lausanne, Switzerland, 2014.
 - P. Demosthenous and J. Georgiou, "Towards a Fluoroscopic Cancer Screening Capsule for the Small Intestine" Proc. of 36th Annual Int. Conf. of IEEE Engineering in Medicine and Biology Society (EMBC'14), pp3122-3125, 26-30th Aug, Chicago, USA.
 - M. Hassan, A. Bermak, A. Amira "Gas identification with pairwise comparison in an artificial olfactory system", 2015 International Conference on Testing and Measurement: Techniques and Applications, January 16-17, 2015, in Phuket Island, Thailand,
 - A. Ait Si Ali, M. Siupik, A. Amira, F. Bensaali and P. Casaseca, "HLS Based Hardware Acceleration on the Zynq SoC: a Case Study for Fall Detection System," the 11th ACM/IEEE International Conference on Computer Systems and Applications, 10-13 November 2014, Doha, Qatar.
 - A. Ait Si Ali, A. Amira and F. Bensaali "Custom IP Cores for Robust Data Analysis and Pattern Recognition Algorithms used in Gas Applications" the 11th ACM/IEEE International Conference on Computer Systems and Applications (PhD Symposium), 10-13 November 2014, Qatar, 2014.
 - A. Alzu'bi, T. Jaber and A. Amira "The Effectiveness of LSI-based CBIR with Image Noise Using Wavelet-based Texture". The 4th International Conference on Image Processing Theory, Tools and Applications, 14-17 October 2014, Paris, France.
 - M. A. Akbar, A. Ait Si Ali, A. Amira, M. Benammar, F. Bensaali, S. Mohamad, F. Tang, A. Bermak, M. Zgaren and M. Sawan, "A Multi-Sensing Reconfigurable Platform for Gas Applications," 26th International Conference on Microelectronics (ICM), 14-17 December 2014, Doha, Qatar.
 - R.M.Gibson, A. Amira, P. Casaseca, N. Ramzan and Z. Pervez "An Efficient User-Customisable Multiresolution Classifier Fall Detection and Diagnostic System" 26th International Conference on Microelectronics (ICM), 14-17 December 2014, Doha, Qatar.
 - M. Hassan, A. Bermak, A. Ait Si Ali and A. Amira "Gas Identification in Electronic Nose by Using Similarity Measure Between Latency Patterns" 26th International Conference on Microelectronics (ICM), 14-17 December 2014, Doha, Qatar.
 - N. Ramzan, A. Amira, Z. Pervez "Quality of Experience Evaluation of H.265/Mpeg-HEVC and VP9 Comparison Efficiency" 26th International Conference on Microelectronics (ICM), 14-17 December 2014, Doha, Qatar.
 - O. Kerdjij, K. Ghanem, A. Amira, F. Harizi, F. Chouireb "Concatenation of dictionaries for recovery of ECG signals using Compressed Sensing techniques" 26th International Conference on Microelectronics (ICM), 14-17 December 2014, Doha, Qatar.
 - D. M. Martínez, P. Casaseca, M.M. Fernandez, A. Amira, C. Luo, C. Grecos and C. Alberola López "A Stochastic Modelling Framework for the Reconstruction of Cardiovascular Signals" The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14), 26-30 August 2014, Chicago, USA.
 - J.S.S.Kutty, F.Boussaid, A.Amira "A High Speed Configurable FPGA Architecture For Bilateral Filtering" The International Conference on Image Processing (ICIP), 27-30 October 2014, Paris, France.
 - A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, M. Hassan, A. Bermak "Versatile Gas Monitoring System on the Heterogeneous Zynq SoC Platform" Proceedings of the 4th International Gas Processing Symposium, October 26-27, 2014, Doha, Qatar.

- M. Neggazi, A. Amira and L. Hammami “Efficient Compressive Sensing on the Shimmer Platform for Fall Detection”, the IEEE International Symposium on Circuits and Systems (ISCAS2014), 1-5 June 2014, Melbourne, Australia.
- “A Wireless Gait Analysis Sensor for Real-Time Robust Fall Detection Using an Artificial Neural Network”, B.T. Nukala, N. Shibuya, A.I. Rodriguez, J. Tsay, T. Q. Nguyen, S. Zupancic and D.Y.C. Lie, Proc. IEEE Point-of-Care Technologies Conf. pp. 219-222, Oct. 8-10, Seattle, WA, 2014
- Invited Paper: “Design of Highly-Efficient Fully-Monolithic SiGe Envelope-Tracking Power Amplifiers (ET-PA) for Broadband Wireless Applications”, D.Y.C. Lie, Y. Li, J. Lopez, and J. Tsay, Proc. IEEE Asia Pacific Microwave Conference (APMC’14), pp. 1085-1088, Sendai, Japan, Nov. 4-7 (2014)
- “A Differential SiGe Power Amplifier Using Through-Silicon-Via and Envelope-Tracking for Broadband Wireless Applications”, J. Tsay, M. Sapp, M. Phamvu, T. Hall, R. Geries, Y. Li, J. Lopez, and D.Y.C. Lie, Proc. IEEE BCTM, pp. 147-150, San Diego, CA, Sept. 28-Oct. 3 (2014)
- “A Fully Integrated Low Noise CMOS Instrumentation Amplifier Design for Low-Power Biosensors”, V. Das, D.Y.C. Lie and T. Nguyen, Proc. IEEE Midwest Symp. on Circuits and Systems (MWSCAS), pp. 535-538, College Station, TX, Aug. 3-6, 2014.
- A. Banerjee, S. Kar, S. Roy, A. Bhaduri and A. Basu, “A Current-mode Spiking Neural Classifier with Lumped Dendritic Nonlinearity,” IEEE ISCAS, May 2015.
- Chen Yi, Yao Enyi and A. Basu, “A 128 channel 290 GMACs/W Machine Learning based Co-processor for Intention Decoding in Brain Machine Interfaces,” IEEE ISCAS, May 2015.
- Y. Enyi and A. Basu, “A 1 V, Compact, Current-Mode Neural Spike Detector with Detection Probability Estimator in 65 nm CMOS,” IEEE ISCAS, May 2015.
- R. Gopalakrishnan and A. Basu, “Triplet Spike Time Dependent Plasticity in a Floating-Gate Synapse,” IEEE ISCAS, May 2015.
- S. Roy, S. Kar and A. Basu, “Architectural Exploration for On-chip, Online Learning in Spiking Neural Networks,” IEEE ISIC, Singapore, Dec. 2014.
- R. Gopalakrishnan and A. Basu, “Robust Doublet STDP in a Floating-gate Synapse,” IEEE IJCNN, Beijing, Aug 2014.
- P. P. San, A. Basu and S. Hussain, “Spike Timing Dependent Morphological Learning for a Neuron with Nonlinear Active Dendrites,” IEEE IJCNN, Beijing, Aug 2014.
- A. Pescovsky, O. Chertkov, L. Atias and A. Fish, “SEU Hardening: Incorporating an Extreme Low Power Bitcell Design (SHIELD)”, Proc, IEEE S3S conference, San Francisco, USA, October 2014.
- R. Gitterman, A. Teman, P. Meinerzhagen, A. Burg and A. Fish, “4T Gain-Cell with Internal-Feedback for Ultra-Low Retention Power at Scaled CMOS Nodes”, Proc. IEEE ISCAS 2014, Melbourne, Australia, June 2014.
- M. Avital and A. Fish, “Secured Dual Mode Logic (DML) as a countermeasure against Differential Power Analysis”, Proc. IEEE ISCAS 2014, Melbourne, Australia, June 2014.

11) BIOCAS TC Review in 2015

The BioCAS TC came up for review this year, and the committee collected responses to the questionnaire. The pdf of the TC review document is appended as an addendum at the end of this report.

12) Contributors

The following BioCAS TC members were involved in assembling this report:

1.	Abbes Amira	Abbes.Amira@uws.ac.uk
2.	Alex Fish	alexander.fish@gmail.com
3.	Amine Bermak	eebermak@ust.hk
4.	Andreas Demosthenous	a.demosthenous@ucl.ac.uk
5.	Andrew Mason	mason@msu.edu

6.	Arindam Basu	arindam.basu@ntu.edu.sg
7.	Bin-Da Liu	bdliu@mail.ncku.edu.tw
8.	Christoph Posch	cposch@yahoo.com
9.	Chua-Chin Wang	ccwang@ee.nsysu.edu.tw
10.	Demarchi Danilo	danilo.demarchi@polito.it
11.	Derek Ho	derekho@cityu.edu.hk
12.	Donald Lie	donald.lie@ttu.edu
13.	Edmund Lam	eymlam@gmail.com
14.	Elisabetta Chicca	chicca@cit-ec.uni-bielefeld.de
15.	Eugenio Culurciello	euge@teradeep.com
16.	Giacomo Indiveri	giacomo@ini.uzh.ch
17.	HK Kwan	kwan1@uwindsor.ca
18.	Joachim Rodrigues	joachim.rodrigues@eit.lth.se
19.	Jie Chen	jc65@ualberta.ca
20.	Julius Georgiou	Julio@ucy.ac.cy
21.	Karim G. Oweiss	koweiss@ufl.edu
22.	Kea-Tiong (Samuel) Tang	kttang@mx.nthu.edu.tw
23.	Lian Yong	eleliany@nus.edu.sg
24.	Man-Kay Law	mklaw@umac.mo
25.	Manuel Delgado-Restituto	mandel@imse-cnm.csic.es
26.	Maysam Ghovanloo	mgh@gatech.edu
27.	Milutin Stanačević	milutin.stanacevic@stonybrook.edu
28.	Mohamad Sawan	mohamad.sawan@polymtl.ca
29.	Pantelis Georgiou	pantelis@imperial.ac.uk
30.	Pau-Choo (Julia) Chung	pcchung@ee.ncku.edu.tw
31.	Paul P. Sotiriadis	psotiriadis@ucsd.edu
32.	Pedram Mohseni	pxm89@case.edu
33.	Robert Rieger	rrieger@mail.nsysu.edu.tw
34.	Sameer Sonkusale	sameer.sonkusale@gmail.com
35.	Sandro Carrara	sandro.carrara@epfl.ch
36.	Shuenn-Yuh Lee	sylee@ee.ncku.edu.tw
37.	Themis Prodromakis	T.Prodromakis@soton.ac.uk
38.	Timothy Constandinou	t.constandinou@imperial.ac.uk
39.	Tsung-Yi Ho	tyho@cs.nctu.edu.tw
40.	Viktor Gruev	vgruev@wustl.edu
41.	Wouter A. Serdijn	W.A.Serdijn@tudelft.nl
42.	Zhiping Lin	EZPLin@ntu.edu.sg