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Electrical and Computer Engineering
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Research interests: Sensors; electron devices and integrated circuits.
Algorithms and mixed signal VLSI architectures for sensory information processing and embedded machine intelligence. Human centric microsystems, neuromorphic-engineering.

Education: Ph.D. Electrical Engineering and Computer Science,
The Johns Hopkins University, Baltimore, Maryland USA, 1986.
M.Sc. Electrical Engineering and Computer Science,
The Johns Hopkins University, Baltimore, Maryland USA, 1982.
Diploma in Electrical Engineering, HTI, Nicosia Cyprus, 1978.

Professional Experience: *Professor* of Electrical and Computer Engineering,
joint appointments in Computer Science, (1997 – now),
Whitaker Biomedical Engineering Institute (2003 – now);
Honorary Professor, Universidad Nacional del Sur
Bahia Blanca, Argentina (2010-now)
University Professor of Electrical and Computer Engineering
University of Cyprus (2009-now)
Founding Director Computer Engineering Program, 1999 – 2002;
The Johns Hopkins University;
Visiting Professor of Machine Intelligence and Systems Engineering,
Tohoku University, Japan, Summer 2001;
Visiting Professor of Computation and Neural Systems,
California Institute of Technology, Spring 1998;
Visiting Associate Professor of Computation and Neural Systems,
California Institute of Technology, 1995 - 1996;
Associate Professor of Electrical and Computer Engineering
The Johns Hopkins University, 1993 - 1997;
Assistant Professor of Electrical and Computer Engineering,
The Johns Hopkins University, 1989 - 1992;
Member Professional Staff, Applied Physics Laboratory,
The Johns Hopkins University, 1986 - 1995.
Associate Research Scientist, Department of Electrical and
Computer Engineering, The Johns Hopkins University, 1988.
Post-Doctoral Fellow, Department of Electrical and Computer
Engineering, The Johns Hopkins University, 1987.

Awards and Honors: Fellow IEEE, 2006.
Distinguished Lecturer
2019-2020 IEEE Circuits and Systems Society
2006-2008, IEEE Electron Devices Society Distinguished Lecturer
2001-2002, 2007-2008, 2016-2017 IEEE Circuits and Systems Society
IEEE Circuits and Systems Society Transactions of Biomedical Circuits and
Systems Best Paper Award, 2010
IEEE Circuits and Systems Society Darlington Best Paper Award, 2000.
Best Student Paper Award, MWSCAS 2000.
Myril B. Reed Best Paper Award, MWSCAS 1997.
Best Student Paper Award, IJCNN 1997.
Myril B. Reed Best Paper Award, MWSCAS 1995.
1991 R.W. Hart Prize, JHU Applied Physics Laboratory.

Professional Activities:

1989 R.W. Hart Prize, JHU Applied Physics Laboratory.
Board of Governors IEEE Circuits and Systems Society (2001-2004)
Associate Editor: *Neural Networks* (1999-now)
Guest Associate Editor: *IEEE Neural Networks* (2002).
IEEE Circuits and System Part II: Analog and Digital Signal Processing (1999-2001), *IEEE Neural Networks* (1993-1995).
Guest Associate Editor: *Analog Integrated Circuits* (2001).
Reviewer: *Nature*, *SCIENCE*, *IEEE Proceedings*,
IEEE Journal of Solid-State Circuits, Sensors and Actuators,
Analog Integrated Circuits and Signal Processing,
MIT press, *Neural Computation*, *IEEE Press*.
Proposal Reviewer: *National Science Foundation*, *European Commission*,
Swiss National Science Foundation, *Taiwan National Research Council*,
Australian Research Council, *Italian Science Council*, *German Science Council*.
Member: IEEE Circuits and Systems Technical Committees on
Analog Signal Processing, *Neural Networks*, *Nanotechnology and Gigascale systems* (chair 2003), *BioCAS*.
IEEE Electron Devices and Solid-State Circuits Council Baltimore chapter
(member executive committee 2000, vice-chair 2001,2002, chair 2003,2004).
Fellow: *Institute of Electrical and Electronics Engineers (IEEE)*.

Teaching Experience:

Undergraduate courses:

525.101 Electrical Engineering Circuits and Signals (Fall 84)
520.346 Electrical Engineering Laboratory (Fall 86)
520.325-326 Integrated Electronics
(Fall 89,90,91,96,97,98; Spring 90,91,92,93,94)
520.348/448 Electronics Design Laboratory (Spring 87,93,94,95,02)
525.428-429 VLSI Technology and Applications (Fall 87,88; Spring 88,89)
520/580.490 Microfabrication Laboratory
(Fall 94,96,98,99,00,02,03,04,05,06,07,08,09,10,11,12,13,14)
520/530.487 Introduction to MEMS (Spring 03,04, Summer 08)
520.216 Introduction to VLSI (Spring 09,10,11,12,13,14,15)
520.211/212 ECE Engineering Team Project (Fall/Spring 09,10,11)

Graduate courses:

580.676 Topics in Biomedical Sensors (Spring 90,92,93,94)
520.691 Optoelectronic VLSI (Fall 99,04)
520/580.725 Medical Microsystems (Spring 00,03)
520.735 Sensory Information Processing (Spring 01,04,08,11)
520.761-762 Seminar on Large Scale Analog Computation
(Fall 89,90,93,96,01,02,08,09,10; Spring 90,91,02,11)
525.764-765 Analog VLSI and Neural Systems
(Fall 88,89,91,93,94; Spring 89,90,92,94)
520.771-772 Advanced Integrated Circuits (Fall 92,97,00,07,08,09,10,11,12;
Spring 92,98,99,07)
520.773 Advanced Topics in Fabrication and Microengineering
(Fall 02,03,04,05,06,07,08,09,10,11,12,13,14)
520.776 Advanced Topics in Speech Science and Technology (Spring 97)

Research Group:

Philippe O. Pouliquen (U.S.A)
Assistant Research Professor

Gaspar Tognetti (Argentina)
5th year Ph.D.

Kate Fischl (U.S.A)
4th year Ph.D.

Christos Sapsanis (Greece)
3rd year Ph.D.

Jonah Sengupta (U.S.A)
2nd year Ph.D.

Visiting Scholars and Faculty:

Dr. Pedro Julian	Universidad del Sud, Bahia Blanca, Argentina, Postdoctoral Fellow, 2002-2003 and Fall 2004; Fullbright Scholar, Visiting Assistant Professor, May-August 2009, Visiting Professor, December 2014-2015, December 2016-December 2017, January-May 2017, January-May 2018.
Dr. Daniel Mendat	Johns Hopkins University, Postdoctoral Fellow, 2018-2019.
Dr. Tomas Figliolia	Johns Hopkins University, Postdoctoral Fellow, January - May 2018.
Dr. Guillaume Garreau	University of Cyprus, Postdoctoral Fellow, 2015-2017.
Dr. Sylvain Saighi	Universite Bordeaux 1, France, Fullbright Scholar, Visiting Professor, February – July 2011.
Dr. Andrew Cassidy	Johns Hopkins University, Postdoctoral Fellow, 2010.
Dr. Zaven Kalayjian	Johns Hopkins University, Postdoctoral Fellow, 2009-2010
Dr. Miriam Adlerstein	Johns Hopkins University, Postdoctoral Fellow, 2009.
Dr. Kim Strohbehn	JHU/APL, Assistant Research Professor, 2005-2012.
Dr. Mark Martin	JHU/APL, Assistant Research Professor, 2005-2010.
Dr. Julio Georgiou	Imperial College, U.K., Postdoctoral Fellow, 2004-2005.
Mr. Pablo Mandolesi	Universitat de Sud, Bahia Blanca, Argentina, Visiting Scholar, 2002-2003.
Dr. Hiroyuki Kurino	Tohoku University, Japan, Visiting Assistant Professor, 2000-2001.
Dr. Bernabe Linares-Barranco	Centro Nacional de Microelectrónica, Post-doctoral Fellow, Spain, 1997-1998.
Mr. Hitoshi Miwa	Hitachi Ltd./DDC, Visiting Scholar, Japan, 1993-1994.

Ph.D. Dissertation Advisor:

Sanni Kayode (U.S.A)
Ph.D. Dissertation title:

Heterogeneous Chip Multiprocessor: Data Representation, Mixed-Signal Processing Tiles, and System Design, January 2019.
Northrop Grumman, Baltimore, MD.

Tomas Figliolia (Argentina)
Ph.D. Dissertation title:

2.5D Chiplet Architecture for Embedded Processing of High Velocity Streaming Data, January 2018.
Xilinx, San Jose, CA.

Daniel R. Mendat (U.S.A)
Ph.D. Dissertation title:

Cognitive and Brain-inspired Processing Using Parallel Algorithms and Heterogeneous Chip Multiprocessor Architectures, October 2017.
Johns Hopkins University and Intelligent Computing Machines, Baltimore, MD.

Thomas Murray (U.S.A)
Ph.D. Dissertation title:

Human action recognition from active acoustics: physics modeling for representation learning and inference using generative probabilistic graphical models, February 2015.
Signals Systems Corporation, Landover, MD.

Recep Ozgun (Turkey)
Ph.D. Dissertation title:

Experimental Investigation of New Materials and Fabrication Methods for Organic Semiconductor Devices and Circuits, July 2013.
Maxim Integrated, Beaverton OR.

Haolang Zhou (PRC)
Ph.D. Dissertation title:

An investigation of linear projection methods: multiple projections and semi-supervised learning, September 2011.
Nuance, New York, NY.

Andrew Cassidy (U.S.A)
Ph.D. Dissertation title:

Three topics in single-chip parallel computing: theoretical foundations, speech recognition, and the silicon cortex, September 2010.
IBM, Austin, TX.

Ed Choi (Australia)
Ph.D. Dissertation title:

The Silicon chip: a versatile micro-scale platform for micro- and nano-scale systems, October 2008.
MAXIM Integrated, Sunnyvale, CA.

Zhaonian Zhang (PRC)
Ph.D. Dissertation title:

A micro-Doppler sonar for acoustic surveillance in sensor networks, August 2008.
Post-doctoral Fellow, UCSF Medical Center, CA.

Miriam Adlerstein (U.S.A)
Wolman Fellow
APL Fellowship
Ph.D. Dissertation title:

Seeing the light: design and characterization of photodetectors with internal gain fabricated in standard CMOS technologies, June 2008.
Institute for Defense Analysis, Princeton, NJ.

Jennifer Blain (U.S.A)
NSF Graduate Fellowship
Ph.D. Dissertation title:

Hybrid integration of silicon/silicone microsystems: a closed-loop, autonomous micro-incubator system, September 2006.

Associate Professor, Arizona State University, AZ.

Francisco Tejada (U.S.A)

APL Fellowship

Ph.D. Dissertation title:

Silicon on insulator CMOS and microelectromechanicals systems: mechanical devices, sensing techniques and system electronics, August 2006.
Sensing Machines, Baltimore, MD.

Arun Sripathi (India)

Ph.D. Dissertation title:

Neural representation of spatial information in the primate somatosensory system, July 2005.
Professor, Centre for Neuroscience, Indian Institute of Science, India.

Eugenio Culurciello (Italy)

Ph.D. Dissertation title:

Ultra thin silicon on sapphire CMOS circuits, October 2004.
Professor, Purdue University, IN.

David H. Goldberg (U.S.A)

Wolman Fellow

Ph.D. Dissertation title:

Efficient spike computation and communication in biological and engineered systems, December 2003.
IBM, Yorktown Heights, NY.

Alyssa B. Apsel (U.S.A)

Wolman Fellow

Ph.D. Dissertation title:

Optoelectronic receivers in silicon on sapphire CMOS: architecture and design for efficient parallel interconnects, August 2002.
Professor and ECE Department Director, Cornell University, NY.

Pamela A. Abshire (U.S.A)

NSF Graduate Fellowship

Ph.D. Dissertation title:

Sensory information processing under physical constraints, October 2001.
Professor, University of Maryland College Park, MD.

Mark N. Martin (U.S.A)

APL Fellowship

Ph.D. Dissertation title:

Mixed analog-digital design of low-power, space-qualified, integrated circuits in standard CMOS processes, January 2000.
Johns Hopkins University Applied Physics Laboratory, MD.

Zaven K. Kalayjian (U.S.A)

Ph.D. Dissertation title:

VLSeve: Optoelectronic vision and image processing, October 1999.
Army Research Laboratories, Adelphi MD.

Nagendra Kumar (India)

Ph.D. Dissertation title:

Investigation of silicon auditory models and generalization of linear discriminant analysis for improved speech recognition, February 1997.
IBM, Yorktown Heights.

Philippe O. Pouliquen (U.S.A)

Ph.D. Dissertation title:

Low power architectures for associative processing in analog VLSI, October 1996.
Assistant Research Professor,
Johns Hopkins University, Baltimore MD.

Richard C. Meitzler (U.S.A)

APL Fellowship

Ph.D. Dissertation title: *Analog VLSI for focal plane processing: devices, circuits, and architectural considerations*, March 1996.
Johns Hopkins University Applied Physics Laboratory, MD.

Paul M. Furth (U.S.A)
Ph.D. Dissertation title: *On the design of optimal continuous-time filter banks in subthreshold CMOS*, October 1995.
Professor, New Mexico State University, Las Cruces NM.

Kewei Yang (PRC)
Ph.D. Dissertation title: *Investigation of MOSFET and floating gate MOSFET device models and circuits for analog VLSI*, October 1994.
Co-founder HotRail and Analogix, San Jose, CA.

Weimin Liu (PRC)
Ph.D. Dissertation title: *An analog cochlear model: signal representation and VLSI realization*, September 1992.
Globespan, Middletown NJ.

M.S. Thesis Reader:

Chia-hsun Chiang (Taiwan)

Xiang Ren (Taiwan)
M.S.E. Thesis title: *Design and fabrication of a microrobot*, May 2010.

Johnny Sang (U.S.A)
M.S.E. Thesis title: *Characterization of devices in three-dimensional silicon-on-insulator CMOS for microelectromechanical systems*, May 2010.

Thiago V.S. Teixeira (Brazil)
M.S.E. Thesis title: *Address-event imaging algorithms and their TinyOS implementation for wireless sensor networks*, May 2005.

La Vida Cooper (U.S.A)
M.S.E. Thesis title: *Devices and circuits for a biotelemetry system in silicon on sapphire CMOS*, May 2005.

Robert Winsor (U.S.A)
M.S.E. Thesis title: *Hybrid, silicon-dioxide/SU-8 optical waveguides using silicon micromachining*, May 2004.

Alexandra Heron (U.S.A)
M.S.E. Thesis title: *Dual process imager design and architecture for retinal implant systems*, May 2001.

Wesley P. Millard (U.S.A)
M.S.E. Thesis title: *A single chip S-band spacecraft receiver designed using silicon on sapphire technology*, January 2001.
JHU Applied Physics Laboratory, Laurel MD.

Wolfgang Himmelbauer (Austria)
M.S.E. Thesis title: *Investigation of a zero-crossing-based auditory model for digit recognition and its implementation in analog VLSI*, October 1997.
Maxim Corporation, San Jose CA.

Teresa Serrano-Gotarredona (Spain)
Fulbright Fellowship
M.S.E. Thesis title: *VLSI implementation of a pseudo-Gabor filter for edge extraction*, October 1997. CNMM, Spain.

Marc H. Cohen (U.S.A)

M.S.E. Thesis title:

Analog VLSI implementation of an auto-adaptive network for real-time separation of independent signal sources, May 1991.
Postdoctoral Fellow – ARL Adelphi.

Kwabena A. Boahen (Ghana)

M.S.E. Thesis title:

Design of a bidirectional associative memory chip, May 1990.
Associate Professor, Stanford University.

Ph.D. Dissertation committees outside Johns Hopkins University:

Martin Villemur	Universitat del Sur, Bahia Blanca, Argentina, 2019; advisor Pedro Julian
Martin Di Federico	Universitat del Sur, Bahia Blanca, Argentina, 2011; advisor Pablo Mandolesi
Pablo Mandolesi	Universitat del Sur, Bahia Blanca, Argentina, 2007; advisor Pedro Julian
Michael Ben Venditti	McGill University, Canada, 2003; advisor Prof. David Plant
Francesc Serra-Graells	Universitat Autònoma de Barcelona, Spain, 2001; advisor Prof. Jose L. Huertas
Raymond Jian-Wei Wang	The University of Sydney, Australia, 1998; advisor: Prof. Marwan A. Jabri.
Teresa Serrano-Gotarredona	University of Sevilla, Spain, 1997; advisor: Prof. Angel Rodriguez.
Paul Hasler	California Institute of Technology, 1997; advisor: Prof. Carver Mead.
Vladimir Brajovic	Carnegie Mellon University, 1996; advisor: Prof. Takeo Kanade.
Richard Coggins	The University of Sydney, Australia; 1996, advisor: Prof. Marwan A. Jabri.

Visiting Students:

Nick Pashalidis	University of Thrace, Greece, 1991-1992; Prof. Sarris Group.
Chiu-Hung Cheng	National Tsing Tung University, Taiwan, 2001; Prof. Chung-Yu Wu Lab.
Yu-Chuan Shih	National Tsing Tung University, Taiwan, 2001; Prof. Chung-Yu Wu Lab.
Rumi Chunara	Caltech, SURF Fellowship (July – September 2003)

Refereed Journal Articles:

M. Villemur, P. Julian, and A. G. Andreou, "Energy aware simplicial processor for embedded morphological visual processing in intelligent internet of things," *IET Electronics Letters*, vol. 54, no. 7, pp. 420–422, Apr. 2018.

K. D. Fischl and A. G. Andreou, "Spike propagation path planning on IBM TrueNorth neurosynaptic system," *IET Electronics Letters*, pp. 1–2, Jun. 2017.

J. H. Seo, H. Bakhshae, G. Garreau, C. Zhu, A. G. Andreou, W. R. Thompson, and R. Mittal, "A method for the computational modeling of the physics of heart murmurs," *Journal of Computational Physics*, vol. 336, pp. 546–568, May 2017.

T. S. Murray, D. R. Mendat, K. Sanni, P. O. Pouliquen, and A. G. Andreou, "Bio-inspired Human Action Recognition With A micro-Doppler Sonar System," *IEEE Access*, pp. 1–16, 2017.

J. T. Vogelstein, K. Amunts, A. G. Andreou, D. Angelaki, G. Ascoli, C. Bargmann, R. Burns, C. Cali, F. Chance, M. Chun, G. Church, H. Cline, T. P. Coleman, S. de La Rochefoucauld, W. Denk, A. B. Elgoyhen, R. E. Cummings, A. Evans, K. Harris, M. Hausser, S. Hill, S. Inverso, C. Jackson, V. Jain, R. Kass, B. Kasthuri, G. Kiar, K. Kording, S. Koushika, J. Krakauer, S. Landis, J. Layton, Q. Luo, A. Marblestone, D. Markowitz, J. McArthur, B. Mensh, M. Milham, P. Mitra, P. Neskovic, M. Nicolelis, R. O'Brien, A. Oliva, G. Orban, H. Peng, A. Picchini-Schaffer, M. Picciotto, J.-B. Poline, M.-M. Poo, A. Pouget, S. Raghavachari, J. Roskams, T. J. Sejnowski, F. Sommer, N. Spruston, L. Swanson, A. Toga, R. J. Vogelstein, R. Yuste, A. Zador, R. Hugarir, and M. Miller, "Grand Challenges for Global Brain Sciences," *arXiv.org*, vol. q-bio.NC. 23-Aug-2016.

H. Korth, K. Strohbren, F. Tejada, A. G. Andreou, J. Kitching, S. Knappe, S. J. Lehtonen, S. M. London, and M. Kafel, "Miniature atomic scalar magnetometer for space based on the rubidium isotope (87)Rb," *J Geophys Res Space Phys*, vol. 121, no. 8, pp. 7870–7880, Aug. 2016.

K. N. Hageman, Z. K. Kalayjian, F. Tejada, B. Chiang, M. A. Rahman, G. Y. Fridman, C. Dai, P. O. Pouliquen, J. Georgiou, C. C. Della Santina, and A. G. Andreou, "A CMOS Neural Interface for a Multichannel Vestibular Prosthesis," *IEEE Trans Biomed Circuits Syst*, vol. 10, no. 2, pp. 269–279, Apr. 2016.

T. Figliolia, T. S. Murray, and A. G. Andreou, "Acoustic micro-Doppler signal processing with a foveated electronic cochlea," *IET Electronics Letters*, vol. 51, no. 2, pp. 132–134, Jan. 2015.

L. Shestopalova, T. M. Bohm, A. Bendixen, A. G. Andreou, J. Georgiou, B. Hajdu, S. L. Denham, and I. Winkler, "Do audio-visual motion cues promote segregation of auditory streams?," *Auditory Cognitive Neuroscience*, pp. 1–33, Mar. 2014.

T. J. Dawidzyk, J. F. M. Hardigee, G. L. Johns, R. Özgün, O. Alley, A. G. Andreou, N. Markovic, and H. E. Katz, "Visualizing and quantifying charge distributions correlated to threshold voltage shifts in lateral organic transistors," *ACS Nano*, pp. 1–29, Jan. 2014.

T. S. Murray, P. O. Pouliquen, and A. G. Andreou, "Design of a configurable clipping sequence generator for high speed parallel samplers," *IET Electronics Letters*, vol. 49, no. 14, pp. 875–876, Jul. 2013.

A.S. Cassidy, J. Georgiou, and A. G. Andreou, "Design of silicon brains in the nano-CMOS era: spiking neurons, learning synapses and neural architecture optimization," *Neural Networks*, vol. 45, pp. 4–26, Jun. 2013.

F. C. Morabito, A. G. Andreou, and E. Chicca, "Neuromorphic engineering: from neural systems to brain-like engineered systems," *Neural Networks*, vol. 45, pp. 1–3, May 2013.

T. S. Murray, P. O. Pouliquen, and A. G. Andreou, "8-channel 20kHz to 200MHz Nyquist and compressive sampler in 0.5um CMOS," *IET Electronics Letters*, vol. 49, no. 1, pp. 23–25, Jan. 2013.

S. Dura-Bernal, G. Garreau, J. Georgiou, A. G. Andreou, S. L. Denham, and T. Wennekers, "Multimodal integration of micro-Doppler sonar and auditory signals for behavior classification with convolutional networks," *Int J Neural Syst*, vol. 23, no. 5, pp. 1350021–1 1350021–15, 2013.

T. M. Bohm, L. Shestopalova, A. Bendixen, A. G. Andreou, J. Georgiou, G. Garreau, P. O. Pouliquen, A. S. Cassidy, S. L. Denham, and I. Winkler, "The role of perceived source location in auditory stream segregation: Separation affects sound organization, common fate does not," *Learning and Perception*, pp. 1–40, 2013.

T. S. Murray, P. O. Pouliquen, and A. G. Andreou, "Design of a parallel sampling encoder for analog to information (A2I) converters: theory, architecture, and CMOS implementation," *MDPI Electronics*, vol. 2, pp. 57–79, 2013.

A. S. Cassidy and A. G. Andreou, "Beyond Amdahl's Law: an objective function that links multiprocessor performance gains to delay and energy," *IEEE Trans Comput*, vol. 61, no. 8, pp. 1110–1126, Aug. 2012.

T. S. Murray, P. O. Pouliquen, and A. G. Andreou, "An 8-Channel 20kHz to 200MHz Nyquist and Compressive Sampler in 0.5um CMOS," *IET Electronics Letters*, 2012.

T. J. Dawidczyk, G. L. Johns, R. Özgün, O. Alley, A. G. Andreou, N. Markovic, and H. E. Katz, "Kelvin probe microscopic visualization of charge storage at polystyrene interfaces with pentacene and gold," *Appl Phys Lett*, vol. 100, no. 7, p. 073305, 2012.

A. G. Andreou, "Johns Hopkins on the chip: microsystems and cognitive machines for sustainable, affordable, personalized medicine and health care (Invited Paper)," *IET Electronics Letters*, pp. s34–s37, Dec. 2011.

J. Georgiou and A. G. Andreou, "Guest Editorial—Special Issue on Selected Papers From BioCAS 2010," *IEEE Trans Biomed Circuits Syst*, vol. 5, no. 5, pp. 401–402, 2011.

B.M. Dhar, R. Özgün, T. Dawidczyk, A.G. Andreou and H.E. Katz "Threshold voltage shifting for memory and tuning in printed transistor circuits", *Materials Science & Engineering R*, pp. 1-32, 2010.

B.M. Dhar, R. Özgün, B.J. Jung, H.E. Katz and A.G. Andreou, "Optimum bias of CMOS organic field effect transistor inverter through threshold adjustment of both p- and n-type devices," *IEE Electronics Letters*, vol. 46 (19) pp. 1335-1336, 2010 (Selected as paper of the month September 2010).

B. J. Jung, K. Lee, J. Sun, A. G. Andreou, and H. E. Katz, "Air-Operable, High-Mobility Organic Transistors with Semifluorinated Side Chains and Unsubstituted Naphthalenetetracarboxylic Diimide Cores: High Mobility and Environmental and Bias Stress Stability from the Perfluorooctylpropyl Side Chain," *Adv Funct Mater*, vol. 20, no. 17, pp. 2930–2944, Jul. 2010.

C.G. Rizk, P.O. Pouliquen and A.G. Andreou, "Flexible Readout and Integration Sensor (FRIS): new class of imaging sensor arrays optimized for air and missile defense," *Johns Hopkins University APL Technical Digest*, Vol. 28, No. 3, pp. 252-253, 2010.

H. Korth, K. Strohbehn, F. Tejada, A.G. Andreou, S. McVeigh, J. Kitching and S. Knappe, "Chip-scale absolute scalar magnetometer for space applications," *Johns Hopkins University APL Technical Digest*, Vol. 28, No. 3, pp. 248-249, 2010.

M.A. Marwick and A.G. Andreou, "A photo-battery fabricated in silicon on sapphire CMOS," *IEE Electronics Letters*, Vol. 44, No. 12, pp. 766-767, 2008.

M.A. Marwick and A.G. Andreou, "Single photon avalanche photodetector with integrated quenching fabricated in TSMC 0.18um 1.8V CMOS process," *IEE Electronics Letters*, Vol. 44, No. 10, pp. 643-644, 2008.

B.N. Pal, J. Sun, B. Jung, E. Choi, A.G. Andreou and H.E. Katz, "Pentacene-Zinc oxide vertical diode with compatible grains and 15-MHz rectification," *Advanced Materials*, Vol. 20, No. 5, pp. 1023-1028, 2008.

M.Di Federico, P.S. Mandolesi, P. Julian and A.G. Andreou, "Experimental results of simplicial CNN digital pixel processor," *IEE Electronics Letters*, Vol. 44, No. 1, pp. 27-29, January 2008.

D.H. Goldberg, and A.G. Andreou, "Distortion of neural signals by spike coding," *Neural Computation*, Vol. 19 , No. 10, pp. 2797-2839, October 2007.

J. Georgiou and A.G. Andreou, "Address-data event representation for communication in multichip neuromorphic system architectures," *IEE Electronics Letters*, Vol. 43, No. 14, pp. 767-769, July 2007.

E. Culurciello, P.O. Pouliquen and A.G. Andreou, "A digital isolation amplifier in silicon-on-sapphire CMOS," *IEE Electronics Letters*, Vol. 43, No. 8, pp. 451-452 , April 2007.

- J. Blain Christen and A.G. Andreou, "Design, fabrication and testing of a hybrid CMOS/PDMS microsystem for cell culture and incubation," *IEEE Transactions on Biomedical Circuits and Systems*, Vol.1, No. 1, pp. 2-14, April 2007 (Invited Paper, 2010 TBioCAS Best Paper Award).
- Z. Zhang, P.O. Pouliquen, A. Waxman and A.G. Andreou, "Acoustic micro-Doppler radar for human gait imaging," *Journal of the Acoustical Society of America Express Letters*, Vol. 121, No. 3, pp. 110-113, March 2007.
- E. Culurciello and A.G. Andreou, "Capacitive inter-chip data and power transfer for 3D VLSI," *IEEE Transactions on Circuits and Systems: Part II: Express Briefs*, Vol. 53, No. 12, pp. 1348-1352, December 2006.
- D.H. Goldberg, A.G. Andreou, P. Julian, P.O. Pouliquen, L. Riddle and R. Rosasco, "Algorithm and VLSI implementation of a wake-up subsystem for an acoustic surveillance sensor network," *ACM Transactions on Sensor Networks*, Vol. 2, No. 4, pp. 594-611, November 2006.
- P. Julian, F.N. Martin Pichio and A.G. Andreou, "Experimental results for cascaded micropower time delay estimator," *IEE Electronics Letters*, Vol. 42, No. 21, pp. 1218-1219, October 2006.
- E. Culurciello and A.G. Andreou, "An 8-bit, 800uW, 1.23MS/s successive approximation ADC in SOI CMOS," *IEEE Transactions on Circuits and Systems: Part II: Express Briefs*, Vol. 53, No. 9, pp. 858-861, September 2006.
- G. Marcus, K. Strohhahn, S. Jaskulek, A.G. Andreou, E. Culurciello, "A monolithic isolation amplifier in silicon-on-insulator CMOS: testing and applications," *Analog Integrated Circuits and Signal Processing*, Vol. 49, pp. 63-70, 2006.
- E. Culurciello and A.G. Andreou, "CMOS image sensors for sensor networks," *Analog Integrated Circuits and Signal Processing*, Vol. 49, pp. 39-51, 2006.
- P. Julian, A.G. Andreou, and D.H. Goldberg, "A low power correlation-derivative CMOS VLSI circuit for bearing estimation," *IEEE Transactions on Very Large Scale Integration Systems*, Vol. 14, No. 2, pp. 207-212, February 2006.
- J. Georgiou and A.G. Andreou, "High-speed address-encoding arbiter architecture," *IEE Electronics Letters*, Vol. 42, No. 3, pp. 170-171, February 2006.
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