

Ioannis Kymissis

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EDUCATION

Ph.D. in Electrical Engineering and Computer Science, May 2003
Massachusetts Institute of Technology, Cambridge, MA
Thesis title: Field Emission from Organic Materials
Advisor: Prof. Akintunde I. Akinwande

M.Eng. in Electrical Engineering and Computer Science, May 1999
Massachusetts Institute of Technology, Cambridge, MA
Thesis title: Morphology and Performance in Pentacene
Advisor: Prof. Akintunde I. Akinwande
Co-op with IBM Research Laboratories, Yorktown Heights, NY

S.B. in Electrical Engineering and Computer Science, May 1998
Massachusetts Institute of Technology, Cambridge, MA

EMPLOYMENT

**Professor
Electrical Engineering**

**Columbia University
New York, NY
2006 – present**

PI, the Columbia Laboratory for Unconventional Electronics (CLUE).

Technical consultant/Senior engineer

**QDVision, Inc.
Watertown, MA
2005 – 2006**

Assisted the technical launch of the company. Built out facilities, interviewed, hired, and trained initial staff, developed the core processes and demonstration vehicles for the company.

**Postdoctoral Associate
Laboratory for Organic Optics and
Electronics**

**MIT
Cambridge, MA
2003 – 2006**

Advisor: Vladimir Bulovic.

**Research Assistant
Microsystems Technology
Laboratory**

**MIT
Cambridge, MA
1999 – 2003**

Thesis: Field Emission from Organic Semiconductors. Advisor: Tayo Akinwande

**Summer Intern
IBM Research, Tokyo Research Lab**

**Yamato, Japan
Summer 1999**

Developed a new characterization technique for analyzing ion density in liquid crystals and susceptibility of display alignment materials to charging. Advisor: Yoichi Taira

**Co-op Student
IBM Research, T. J. Watson
Research Lab**

**Yorktown Heights, NY
1996-1999**

Led several aspects of the organic field effect transistor effort, most notably developing a photolithographic process for fabricating transistors and investigating the role of semiconductor crystallization on macroscopic performance parameters. (Three assignments, Summer 1996, 1997, June 1998-January 1999). Advisors: Christos Dimitrakopoulos and Sampath Purushothaman

AWARDS

2019 IEEE EDS Distinguished Lecturer
2018 40 under 40, Greek America Foundation
2018 Fellow, Society for Information Display
2017 Architizer A+ Award (Radiator Labs)
2016 Finalist, Verizon Powerful Answers Award (Chromation)
2015 Winner, Verizon Powerful Answers Award (Radiator Labs)
2014 National Academy of Engineering, Frontiers of Engineering Education Meeting Attendee
2014 National Academy of Engineering, Indo-American Frontiers of Science Meeting Attendee
2014 Popular Science, Invention of the Year (Radiator Labs)
2013 IBM faculty award
2012 Interdigital Innovation Challenge, first prize
2012 MIT/USDOE Clean Energy Prize, first prize
2011 Ocean Optics Blue Ocean Award
2011 Kim Award for Undergraduate Involvement
2010 IBM Faculty award
2009 Vodaphone Americas Foundation Wireless Innovation Award
2008 Google faculty award
2007 NSF CAREER award
2002 IVMC Shoulders Gray Spindt award
1998-2002 IBM Fellowship
2002 IBM Research First Plateau
2002 IBM Outstanding Technical Achievement Award
2000-2002 IBM Invention Achievement Award
1997 Tau Beta Pi, Eta Kappa Nu

**BEST
PAPER/POSTER
AWARDS**

2018 IDW Distinguished Paper Award
2018 CMOC Best poster award
2015 IDW Distinguished Paper Award
2015 NYC Media Lab Best Demo award
2014 FlexTech Alliance, second place best poster
2014 Global Interposer Technology Conference, second place best poster
2013 IGERT workshop on Energy, Transportation, and Water Infrastructure 3rd place poster
2012 MRS Fall Meeting Best Poster finalist
2011 ACM SenSys'11 Best Student Demo Award
2011 IEEE Communications Society Award, Best Paper
2002 IEEE Electron Device Society Paul Rappaport Award

**ADVISORY
POSITIONS**

Chromation - Co-founder and CTO. BOD member.

Radiator Labs - Co-founder and technical advisor. BOD member.
Lumiode - Co-founder and technical advisor. BOD member.
Open Photonics - Advisory board member.
TandemLaunch - Fellow

BOOK

Ioannis Kymissis (monograph). *Organic Field Effect Transistors: Theory, Fabrication and Characterization* Springer, New York, 2009.

PUBLICATIONS

108. CH Kim, I Kymissis, Y Bonnassieux "Display meets biology: A vision for ubiquitous healthcare platforms" *Journal of the Society for Information Display* (2019) 27 (3), 181-191

107. ES Leland, PR Kinget, I Kymissis, D Steingart, SR Sanders, S O'Brien "Nanocomposite Capacitors in Power Electronics and Multiferroics: Prospects for the Future of Nanopackaging and Beyond" *IEEE Nanotechnology Magazine* (2019) 13 (1), 8-17

106. Christopher Choi, Aida R Colon-Berrios, Leslie S Hamachi, Jonathan S Owen, Theodore H Schwartz, Hongtao Ma, Ioannis Kymissis. "Localizing Seizure Activity in the Brain Using Implantable Micro-LEDs with Quantum Dot Downconversion" *Advanced Materials Technologies* (2018) 3(6), 1700366.

105. Steve Park, Xiying Guan, Youngwan Kim, Francis (Pete) X Creighton, Eric Wei, Ioannis Kymissis, Hideko Heidi Nakajima, Elizabeth S Olson. "PVDF-based piezoelectric microphone for sound detection inside the cochlea: toward totally implantable cochlear implants". *Trends in hearing* (2018) 22, 2331216518774450

104. Yang, Shyuan, Johannes Binting, Steve Park, Sejal Jain, Kostas Alexandrou, Philipp Fruhmann, Kalpana Besar, Howard Katz, and Ioannis Kymissis. "Inexpensive, Versatile, and Robust USB-Driven Sensor Platform." *IEEE Sensors Letters* 1, no. 6 (2017): 1-4.

103. Evan S. O'Brien, M. Tuan Trinh, Rose L. Kann, Jia Chen, Giselle A. Elbaz, Amrita Masurkar, Timothy L. Atallah, Maria V. Paley, Nilam Patel, Daniel W. Paley, Ioannis Kymissis, Andrew C. Crowther, Andrew J. Millis, David R. Reichman, X.-Y. Zhu, Xavier Roy 2017. Single-crystal-to-single-crystal intercalation of a low-bandgap superatomic crystal. *Nature chemistry*, 9(12), p.1170.

102. Li, Jiangyi, Jae-sun Seo, Ioannis Kymissis, and Mingoo Seok. "Triple-Mode, Hybrid-Storage, Energy Harvesting Power Management Unit: Achieving High Efficiency Against Harvesting and Load Power Variabilities." *IEEE Journal of Solid-State Circuits* 52, no. 10 (2017): 2550-2562.

101. "A Hybrid Electronic Nose and Tongue for the Detection of Ketones: Improved Sensor Orthogonality Using Graphene Oxide-Based Detectors" Cavallari MR, Braga GS, da Silva MF, Izquierdo JE, Paterno LG, Dirani EA, Kymissis I, Fonseca FJ. *IEEE Sensors Journal* Volume: 17 Issue: 7 Pages: 1971-1980 2017

100. "Color Fine-Tuning of Optical Materials Through Rational Design" Holzer B, Binting J, Lumpi D, Choi C, Kim Y, Stöger B, Hametner C, Marchetti Deschmann M, Plasser F, Horkel E, Kymissis I. *ChemPhysChem* Volume: 18 Issue: 5 Pages: 549-563 2017 DOI: 10.1002/cphc.201601204

99. "Graphene-organic hybrid electronics" Kim, Chang-Hyun; Kymissis, Ioannis. *Journal of Materials Chemistry C* Volume: 5 Issue: 19 Pages: 4598-4613 2017 DOI: 10.1039/c7tc00664k
98. "Monolithically Integrated CMOS-SMR Oscillator in 65 nm CMOS Using Custom MPW Die-Level Fabrication Process" Edrees, Hassan M.; Colon-Berrios, Aida R.; Peixoto, Daniel de Godoy, Shepard, Kenneth; Kinget, Peter; Kymissis, Ioannis. *Journal of Microelectromechanical Systems* Volume: 26 Issue: 4 Pages: 846-858 2017 DOI: 10.1109/JMEMS.2017.2691585
97. "Permanent water swelling effect in low temperature thermally reduced graphene oxide" Papamatthaiou, S.; Argyropoulos, D. -P.; Masurkar, A. M. R. Cavallari, F. Farmakis, I. Kymissis, and N. Georgoulas. *Applied Physics Letters* Volume: 110 Issue: 25 2017 DOI: 10.1063/1.4989681
96. "Synthesis, characterization and printing application of alkylated indolo[3,2-b]carbazoles" Johannes Bintingera, Shyuan Yang, Philipp Fruhmann, Brigitte Holzer, Berthold Stöger, Anastasiya Svirikova, Martina Marchetti-Deschmann, Ernst Horkel, Christian Hametner, Johannes Frohlich, Ioannis Kymissis, and Hannes Mikula. *Synthetic Metals* Volume: 228 Pages: 9-172017 DOI: 10.1016/j.synthmet.2017.04.003
95. "Unexpected length dependence of excited-state charge transfer dynamics for surface-confined perylenediimide ensembles" Amir Mazaheripour,^a Gregor Kladnik,^{bc} Jonah-Micah Jocson, Austin G. Wardrip, Cade B. Markegard, Nathan Frey, Albano Cossaro, Luca Floreano, Alberto Verdini, Andrew Bartlett, Anthony M. Burke, Nina Hüskén, Kelsey Miller, Katarina Van Wonterghem, Robert Lopez, Michelle Lu, Amrita Masurkar, Mary N. Dickson, Sahar Sharifzadeh, Hung D. Nguyen, Ioannis Kymissis, Dean Cvetko, Alberto Morgante and Alon A. Gorodetsky *Materials Horizons* Volume: 4 Issue: 3 Pages: 437-441 2017 DOI: 10.1039/c6mh00465b
94. "The Effect of Thermal Reduction and Film Thickness on fast Response Transparent Graphene Oxide Humidity Sensors, S Papamatthaiou, D-P Argyropoulos, F Farmakis, A Masurkar, K Alexandrou, I Kymissis, N Georgoulas. *Procedia Engineering* 168 301-304 (2016)
93. "Color Fine Tuning of Optical Materials Through Rational Design" Brigitte Holzer, Johannes Binting, Daniel Lumpi, Christopher Choi, Youngwan Kim, Berthold Stoger, Christian Hametner, Martina Marchetti-Deschmann, Felix Plasser, Ernst Horkel, Ioannis Kymissis, Johannes Fröhlich. *ChemPhysChem* (ASAP)
92. "An Intracochlear Pressure Sensor as a Microphone for a Fully Implantable Cochlear Implant" Francis Pete X Creighton, Xiying Guan, Steve Park, Ioannis John Kymissis, Hideko Heidi Nakajima, Elizabeth S Olson. *Otology & Neurotology* 37(10) 1596-1600
91. "Length-Independent Charge Transport in Chimeric Molecular Wires" Austin G Wardrip, Amir Mazaheripour, Nina Hüskén, Jonah?Micah Jocson, Andrew Bartlett, Robert C Lopez, Nathan Frey, Cade B Markegard, Gregor Kladnik, Albano Cossaro, Luca Floreano, Alberto Verdini, Anthony M Burke, Mary N Dickson, Ioannis Kymissis, Dean Cvetko, Alberto Morgante, Sahar Sharifzadeh, Hung D Nguyen, Alon A Gorodetsky. *Angewandte Chemie International Edition* 55(46) 14267-14271
90. "Improving the radiation hardness of graphene field effect transistors" Konstantinos Alexandrou, Amrita Masurkar, Hassan Edrees, James F Wishart, Yufeng Hao, Nicholas Petrone, James Hone, Ioannis Kymissis. *Applied Physics Letters* 109(15) 153108.

89. "A macroscopic model for vertical graphene-organic semiconductor heterojunction field-effect transistors" CH Kim, H Hlaing, I Kyymissis *Organic Electronics* 36, 45-49
88. "Microscopy and micro-Raman study of periodically poled domains in deeply thinned lithium niobate wafers" PS Bullen, HC Huang, H Yang, JI Dadap, I Kyymissis, RM Osgood. *Optical Materials* 57, 243-248
87. "Effect of vacuum thermal annealing to encapsulated graphene field effect transistors" Konstantinos Alexandrou, Filippos Farmakis, Alexandros Arapis, Nikolaos Georgoulas, Yufeng Hao, James Hone, Ioannis Kyymissis. *Journal of Vacuum Science & Technology B* 34 (4), 041805
86. "Metacapacitors: Printed Thin Film, Flexible Capacitors for Power Conversion Applications." Barry Van Tassell, Shyuan Yang, Chengrui Le, Limin Huang, Shuangyi Liu, Paul Chando, Xiaohua Liu, Andrew Byro, Daniel L Gerber, Eli S Leland, Seth R Sanders, Peter R Kinget, Ioannis Kyymissis, Daniel Steingart, Stephen O'Brien. *Power Electronics, IEEE Transactions on*. 2016 Apr;31(4):2695-708.
85. "Energy-Harvesting Active Networked Tags (EnHANTs): Prototyping and Experimentation." Margolies R, Gorlatova M, Sarik J, Stanje G, Zhu J, Miller P, Szczodrak M, Vigraham B, Carloni L, Kinget P, Kyymissis I. *ACM Transactions on Sensor Networks (TOSN)*. 2015 Nov 2;11(4):62.
84. "Sequential Lateral Solidification of Silicon Thin Films on Cu BEOL-Integrated Wafers for Monolithic 3-D Integration." Carta F, Gates SM, Limanov AB, Im JS, Edelstein DC, Kyymissis I. *Electron Devices, IEEE Transactions on*. 2015 Nov;62(11):3887-91.
83. "Movers and shakers: Kinetic energy harvesting for the internet of things." Gorlatova M, Sarik J, Grebla G, Cong M, Kyymissis I, Zussman G. *Selected Areas in Communications, IEEE Journal on*. 2015 Aug;33(8):1624-39.
82. "Formation and Interaction of Self-Assembled Pentacene Structures on Monolayer Graphene" Rui He, Fabio Carta, M Ashan, K Bader, Conor Delaney, Tim Kidd, Benjamin Beck, Christopher M Reilly, Ioannis Kyymissis, Aron Pinczuk, Michael S Roth ' *Science Letters Journal* Vol. 4 (2015) p. 199
81. "Photocurrent measurements of pentacene-based devices." A Masurkar, I Kyymissis. *Applied Physics Reviews* 2 (3), 031101 2015
80. "Observation of Ground-and Excited-State Charge Transfer at the C60/Graphene Interface" G Jnawali, Y Rao, JH Beck, N Petrone, I Kyymissis, J Hone, TF Heinz *ACS nano* 2015
79. "Difluorinated 6, 13 Bis (triisopropylsilylethynyl) pentacene: Synthesis, Crystallinity, and Charge Transport Properties" CH Kim, H Hlaing, MM Payne, SR Parkin, JE Anthony, I Kyymissis *ChemPhysChem* 16 (6), 1251-1257 2015
78. "Clean Graphene Electrodes on Organic Thin-Film Devices via Orthogonal Fluorinated Chemistry" Jonathan H Beck, Robert A Barton, Marshall P Cox, Konstantinos Alexandrou, Nicholas Petrone, Giorgia Olivieri, Shyuan Yang, James Hone, Ioannis Kyymissis. *Nano letters* 15 (4), 2555-2561 2015
77. "Encapsulated graphene field-effect transistors for air stable operation" K Alexan-

- drou, N Petrone, J Hone, I Kymissis Applied Physics Letters 106 (11), 113104 2015
76. "Substituted triphenylamines as building blocks for star shaped organic electronic materials" Daniel Lumpi, Brigitte Holzer, Johannes Binting, Ernst Horkel, Simon Waid, Heinz D Wanzenböck, Martina Marchetti-Deschmann, Christian Hametner, Emerich Bertagnolli, Ioannis Kymissis, Johannes Fröhlich. New Journal of Chemistry 39 (3), 1840-1851 2015
75. "Decoupling the Effects of Self-Assembled Monolayers on Gold, Silver, and Copper Organic Transistor Contacts" CH Kim, H Hlaing, JA Hong, JH Kim, Y Park, MM Payne, JE Anthony, Yvan Bonnassieux, Gilles Horowitz, Ioannis Kymissis. Advanced Materials Interfaces 2 (2) 2 2015
74. "Low-Voltage Organic Electronics Based on a Gate-Tunable Injection Barrier in Vertical graphene-organic Semiconductor Heterostructures" H Hlaing, CH Kim, F Carta, CY Nam, RA Barton, N Petrone, J Hone, Ioannis Kymissis. Nano letters 15 (1), 69-74 2 2014
73. "Sequential lateral solidification of silicon thin films on low-k dielectrics for low temperature integration" F Carta, SM Gates, AB Limanov, H Hlaing, JS Im, DC Edelstein, I Kymissis Applied Physics Letters 105 (24), 242904 2014
72. "Printable ammonia sensor based on organic field effect transistor" Kalpana Besar, Shyuan Yang, Xin Guo, Weiguo Huang, Ana M Rule, Patrick N Breyse, Ioannis J Kymissis, Howard E Katz Organic Electronics 15 (11), 3221-3230
71. "Direct observation of both contact and remote oxygen scavenging of GeO₂ in a metal-oxide-semiconductor stack." S Fadida, P Shekhter, D Cvetko, L Floreano, A Verdini, L Nyns, S Van Elshocht, I Kymissis, M Eizenberg. Journal of Applied Physics 116 (16), 164101
70. "Decoupling the Effects of Self-Assembled Monolayers on Gold, Silver, and Copper Organic Transistor Contacts." Chang Hyun Kim, Htay Hlaing, Jong-Am Hong, Ji Hoon Kim, Yongsup Park, Marcia M Payne, John E Anthony, Yvan Bonnassieux, Gilles Horowitz, Ioannis Kymissis. Advanced Materials Interfaces 2 (2)
69. "Printable ammonia sensor based on organic field effect transistor." Kalpana Besar, Shyuan Yang, Xin Guo, Weiguo Huang, Ana M Rule, Patrick N Breyse, Ioannis J Kymissis, Howard E Katz. Organic Electronics 15 (11), 3221-3230
68. "Sequential lateral solidification of silicon thin films on low-k dielectrics for low temperature integration." F Carta, SM Gates, AB Limanov, H Hlaing, JS Im, DC Edelstein, I Kymissis. Applied Physics Letters 105 (24), 242904
67. "Substituted triphenylamines as building blocks for star shaped organic electronic materials." Daniel Lumpi, Brigitte Holzer, Johannes Binting, Ernst Horkel, Simon Waid, Heinz D Wanzenböck, Martina Marchetti-Deschmann, Christian Hametner, Emerich Bertagnolli, Ioannis Kymissis, Johannes Fröhlich. New Journal of Chemistry (ASAP)
66. "Low-Voltage Organic Electronics Based on a Gate-Tunable Injection Barrier in Vertical Graphene/Organic Semiconductor Heterostructures." Htay Hlaing, Chang-Hyun Kim, Fabio Carta, Chang-Yong Nam, Rob Barton, Nicholas Petrone, James Hone, Ioannis Kymissis. Nano letters (ASAP)

65. "Difluorinated 6, 13-Bis (triisopropylsilylethynyl) pentacene: Synthesis, Crystallinity, and Charge Transport Properties." CH Kim, H Hlaing, MM Payne, SR Parkin, JE Anthony, I Kymissis. *ChemPhysChem* (ASAP)
64. "Clean Graphene Electrodes on Organic Thin-Film Devices via Orthogonal Fluorinated Chemistry." Jonathan Hutchinson Beck, Robert Barton, Marshall Cox, Konstantinos Alexandrou, Nicholas Petrone, Giorgia Olivieri, Shyuan Yang, James Hone, Ioannis Kymissis. *Nano letters* (ASAP)
63. "Encapsulated graphene field-effect transistors for air stable operation." K Alexandrou, N Petrone, J Hone, I Kymissis. *Applied Physics Letters* 106 (11), 113104
62. "Helium-ion-induced radiation damage in LiNbO₃ thin-film electro-optic modulators." HC Huang, JI Dadap, G Malladi, I Kymissis, H Bakhru, RM Osgood. *Optics express* 22 (16), 19653-19661
61. "An integrated CMOS quantitative-polymerase-chain-reaction lab-on-chip for point-of-care diagnostics" H Norian, RM Field, I Kymissis, KL Shepard *Lab on a Chip* Oct 21;14(20):4076-84 2014
60. "Impedance spectroscopy on copper phthalocyanine diodes with surface-induced molecular orientation" CH Kim, H Hlaing, S Yang, Y Bonnassieux, G Horowitz, I Kymissis *Organic Electronics* 2014. 15 (8), 1724-1730
59. "Strongly Correlated Alignment of Fluorinated 5, 11 Bis (triethylgermylethynyl) anthradithiophene Crystallites in Solution Processed Field Effect Transistors" Chang Hyun Kim, Htay Hlaing, Marcia M Payne, Kevin G Yager, Yvan Bonnassieux, Gilles Horowitz, John E Anthony, Ioannis Kymissis. *ChemPhysChem* 15(14):2913-2916, 2014.
58. "Waveguide-integrated photonic crystal spectrometer with camera readout" Fan Meng, Ren-Jye Shiue, Noel Wan, Luozhou Li, Jing Nie, Nicholas C Harris, Edward H Chen, Tim Schrder, Nadia Pervez, Ioannis Kymissis, Dirk Englund. *Applied Physics Letters* 2014, 105 (5) 051103
57. "General method for simultaneous optimization of light trapping and carrier collection in an ultra-thin film organic photovoltaic cell" Cheng-Chia Tsai, Richard R Grote, Jonathan H Beck, Ioannis Kymissis, Richard M Osgood Jr, Dirk Englund. *Journal of Applied Physics* 116 (2) 023110
56. "Electrophoretic deposition of quantum dots for photovoltaic applications" SW Lee, H Hlaing, I Kymissis, IP Herman *ECS Transactions*, 2014 58 (42), 11-17
55. "Nanostructured Electrodes Improve the Fill Factor of Organic Photovoltaics" Jonathan H. Beck, Biswajit Ray, Richard R. Grote, Richard M. Osgood, Jr., Charles T. Black, Muhammad A. Alam, Ioannis Kymissis. *IEEE Journal of Photovoltaics*, 44(4) pp 1100 - 1106 2014
54. "Influence of electromigration on the maximum operating field of (Ba, Sr) TiO₃/polyethylene-C composite capacitors." Shyuan Yang, Eli S. Leland, Shuangyi Liu, and Stephen O'Brien, Ioannis Kymissis. *Journal of Vacuum Science and Technology*, B 31(6), pp 060603 2013.
53. "Poly-(3)hexylthiophene nanowire networks for versatile fabrication of bulk het-

- erojunctions with increased active volume” Theodore J. Kramer, Annabel R. Chew, Theanne Schiros, Ioannis Kymissis, and Irving P. Herman. *J. Vac. Sci. Technol. B* 31, 031209 (2013); 10.1116/1.4802928
52. “Templating and Charge Injection from Copper Electrodes into Solution-Processed Organic Field-Effect Transistors” Chang Hyun Kim, Htay Hlaing, Fabio Carta, Yvan Bonnassieux, Gilles Horowitz, and Ioannis Kymissis. *ACS Appl. Mater. Interfaces*, 2013, 5 (9), pp 3716-3721.
51. “Donor-Acceptor Shape Matching Drives Performance in Photovoltaics” Theanne Schiros, Gregor Kladnik, Deborah Prezzi, Andrea Ferretti, Giorgia Olivieri, Albano Cossaro, Luca Floreano, Alberto Verdini, Christine Schenck, Marshall Cox, Alon A Gorodetsky, Kyle Plunkett, Dean Delongchamp, Colin Nuckolls, Alberto Morgante, Dean Cvetko, Ioannis Kymissis. *Advanced Energy Materials* Volume 3, Issue 7, pages 894-902, July, 2013.
50. “Bimorph actuator with monolithically integrated CMOS OFET control.” Fabio Carta, Yu-Jen Hsu, John Sarik, Ioannis Kymissis. *Organic Electronics*, 14, 2013.
49. “Orientation of Luminescent Excitons in Layered Nanomaterials” Jon A. Schuller, Sinan Karaveli, Theanne Schiros, Keliang He, Shyuan Yang, Ioannis Kymissis, Jie Shan, and Rashid Zia. *Nature Nanotechnology* 8(4) 271-276, 2013.
48. “Inexpensive photonic crystal spectrometer for colorimetric sensing applications” Kurt M. Bryan, Zhang Jia, Nadia Pervez, Marshall Cox, Xun Jia, Ioannis Kymissis. *Optics Express* Vol. 21, Issue 4, pp. 4411-4423 2013.
47. “A 4.4-W Wake-Up Receiver Using Ultrasound Data” Kshitij Yadav, Ioannis Kymissis, Peter Kinget. *IEEE Journal of Solid State Circuits* 48(3) 649-660, 2013
46. “A 2.5D Integrated Voltage Regulator Using Coupled- Magnetic-Core Inductors on Silicon Interposer” Noah Sturcken, Eugene J. O’Sullivan, Naigang Wang, Philipp Herget, Bucknell C. Webb, Lubomyr T. Romankiw, Michele Petracca, Ryan Davies, Robert E. Fontana, Jr., Gary M. Decad, Ioannis Kymissis, Angel V. Peterchev, Luca P. Carloni, William J. Gallagher, and Kenneth L. Shepard. *IEEE Journal of Solid State Circuits* 48(1) 244 - 254, 2012
45. “A Tone Analyzer Based on Piezoelectric Polymers” Yu-Jen Hsu and Ioannis Kymissis. *Journal of the Acoustical Society of America*, 132 (6) 3826-3831 2012.
44. “A high-resolution spectrometer based on a compact planar two dimensional photonic crystal cavity array.” Gan, Xuetao; Pervez, Nadia; Kymissis, Ioannis; Hatami, Fariba; Englund, Dirk. *Applied Physics Letters*, 100(23) 231104-231104-4, 2012 10.1063/1.4724177
43. “Asymmetric leakage in (Ba, Sr)TiO₃ Nanoparticle/parylene-C Composite Capacitors” Shyuan Yang, Brian R. Tull, Nadia K. Pervez, Limin Huang, Eli S. Leland, Dan Steingart, Stephen O’Brien, Ioannis Kymissis. *Journal of Polymer Physics*, 51(1) 35-38, 2013. 10.1002/polb.23156
42. “Effect of solubilizing agent on properties of poly(3,4-ethylenedioxythiophene) (PEDOT) electrodeposited from aqueous solution” Eduard Nasybulin, Shu Wei, Ioannis Kymissis, Kalle Levon, *Electrochimica Acta*, 78(1) 638-643, 2012. 10.1016/j.electacta.2012.06.083.

41. "Reticulated Organic Photovoltaics" Theanne Schiros, Stefan Mannsfeld, Chienyang Chiu, Kevin G Yager, James Ciston, Alon A Gorodetsky, Matteo Palma, Zac Bullard, Theodore Kramer, Dean Delongchamp, Daniel Fischer, Ioannis Kymissis, Michael F Toney, Colin Nuckolls. *Advanced Functional Materials* 22(6) 1167-1173, 2012 doi:10.1002/ adfm.201102572
40. "Electrochemical codeposition of poly (thieno [3, 2] thiophene) and fullerene: An approach to a bulk heterojunction organic photovoltaic device." Eduard Nasybulin, Marshall Cox, Ioannis Kymissis, Kalle Levon. *Synthetic Metals*, 162(1-2) 10-17, 2012.
39. "Morphological and Spectroscopic Studies of Electrochemically Deposited Poly(3,4-ethylenedioxythiophene) (PEDOT) Hole Extraction Layer for Organic Photovoltaic Device (OPVd) Fabrication." Eduard Nasybulin, Shu Wei, Marshall Cox, Ioannis Kymissis, and Kalle Levon. *The Journal of Physical Chemistry C* 115 (10) 4307-4314, 2011
38. "Electrochemically prepared polymer solar cell by three-layer deposition of poly (3, 4-ethylenedioxythiophene)/poly (2, 2'-bithiophene)/fullerene (PEDOT/PBT/C60)." Eduard Nasybulin, Jeremy Feinstein, Marshall Cox, Ioannis Kymissis, Kalle Levon. *Polymer* 52(16-20)3627-3632, 2011.
37. "Single-layer graphene cathodes for organic photovoltaics." Marshall Cox, Alon Gorodetsky, Bumjung Kim, Keun Soo Kim, Zhang Jia, Philip Kim, Colin Nuckolls, and Ioannis Kymissis *Appl. Phys. Lett.* 98 123303, 2011; doi:10.1063/1.3569601
36. "Laboratory pentacene and parylene evaporation systems for fabricating organic thin film devices." Zhang Jia, Vincent W. Lee, Yu-Jen Hsu, Ioannis Kymissis. *Journal of Vacuum Science and Technology B* 29(2) 022401, 2011
35. "A Locally Amplified Strain Sensor Based on a Piezoelectric Polymer and Organic Field-Effect Transistors." Yu-Jen Hsu, Zhang Jia, Ioannis Kymissis. *IEEE Transactions on Electron Devices*, 58(3) 910-917, 2011.
34. "An electrostrictive high dielectric constant fluorinated terpolymer sheet fabricated by a melt and stretch extrusion process." Sung-Jin Kim and Ioannis Kymissis *Journal of Material Science* 45(24) 6834-6836, DOI: 10.1007/s10853-010-4900-y
33. "Energy harvesting active networked tags (EnHANTs) for ubiquitous object networking." Gorlatova, M.; Kinget, P.; Kymissis, I.; Rubenstein, D.; Wang, X.; Zussman, G. *IEEE Wireless Communications* 17(6) 18 - 25, 2010.
32. "In situ study of pentacene interaction with archetypal hybrid contacts: fluorinated vs alkane thiols on gold" Zhang Jia, Vincent W. Lee, Luca Floreano, Alberto Verdini, Albano Cossaro, Alberto Morgante, Ioannis Kymissis. *Physical Review B*, 82(12) 125457, 2010
31. "Reticulated Heterojunctions for Photovoltaic Devices" *Angewandte Chemie*, Alon A. Gorodetsky, Chien-Yang Chiu, Theanne Schiros, Matteo Palma, Marshall Cox, Zhang Jia, Wesley Sattler, Ioannis Kymissis, Michael Steigerwald, Colin Nuckolls. 149(43) 7909-7912, October 18, 2010
30. "A Laboratory-Based Course in Display Technology" J. Sarik, A. I. Akinwande, I. Kymissis. *IEEE Transactions on Education* 54(2) 314-319, 2010.

29. "Doping and illumination dependence of 1/f noise in pentacene thin film transistors" Z. Jia, I. Meric, K. Shepard, I. Kymissis. *IEEE Electron Device Letters*, 57(2) 380 - 384, 2010.
28. "Study of local mobility in pentacene field-effect transistors using spatially resolved photocurrent measurement" Z. Jia, Meng Shi, Ioannis Kymissis. *IEEE Electron Device Letters*, 31(7) 761-763 2010.
27. "Photonic Crystal Spectrometer" N. K. Pervez, W. Cheng, Z. Jia, M. P. Cox, H. M. Edrees, and I. Kymissis. *Optics Express*, 18(8) 8277-8285 2010.
26. "A Directly-Addressed Monolithic LED Array as a Projection Source" V. Lee and I. Kymissis. *Journal of the Society for Information Display*, 18:10, pp 208-212 (2010)
25. "Photovoltaic Universal Joints: Ball-and-Socket Interfaces in Molecular Photovoltaic Cells" Noah J. Tremblay, Alon A. Gorodetsky, Marshall P. Cox, Theanne Schiros, Bumjung Kim, Rachel Steiner, Zachary Bullard, Aaron Sattler, Woo-Young So, Yoshimitsu Itoh, Michael F. Toney, Hirohito Ogasawara, Arthur P. Ramirez, Ioannis Kymissis, Michael L. Steigerwald, Colin Nuckolls. *ChemPhysChem* 11(4) 799-803 2010.
24. "Gene expression analysis with an integrated CMOS microarray by time-resolved fluorescence detection" Ta-chien D. Huang, Sunirmal Paul, Ping Gong, Rastislav Levicky, John Kymissis, Sally A. Amundson, Kenneth L. Shepard. *Biosensors and Bioelectronics* 26(5), 2660-2665., 2010.
23. "FBAR-CMOS Oscillator Array for Mass-Sensing Applications" M. Johnston, I. Kymissis, K. Shepard. *IEEE Sensors Journal*, 10(6) 1042-1047 2010.
22. "Photocurrent Study of Oxygen Mediated Doping States in Pentacene Thin Film Transistors." Z. Jia, L. Banu, I. Kymissis. *IEEE Transactions on Electron Devices*, 57(2) 380-384 2010.
21. "LED-Based Optical Device for chronic in-vivo cerebral blood volume measurement." M. Cox, H. Ma, M. E. Bahlke, J. H. Beck, T.H. Schwartz, I. Kymissis. *IEEE Transactions on Electron Devices*, 57(1) pp 174-177. January 2010.
20. "Laboratory Thin-Film Encapsulation of Air Sensitive Organic Devices." S. P. Subbarao, M. E. Bhalke, I. Kymissis. *IEEE Transactions on Electron Devices*, 57(1) pp 153-156. January 2010.
19. "High K Capacitors and OFET Gate Dielectrics from Self Assembled BaTiO₃ and (Ba,Sr)TiO₃ nanocrystals in the Superparamagnetic Limit." L. Huang, Z. Jia, I. Kymissis, S. O'Brien. *Advanced Functional Materials* 20(4) 554-560 2010.
18. "Performance of Monolayer Graphene Nanomechanical resonators with electrical readout." Changyao Chen, Sami Rosenblatt, Kirill I. Bolotin, William Kalb, Philip Kim, Ioannis Kymissis, Horst L. Stormer, Tony F. Heinz, James Hone. *Nature Nanotechnology* 4(12) 861-867 2009.
17. "Solar Cell from a Solution Processable Pentacene with Improved Air Stability." Alon A. Gorodetsky, Marshall Cox, Noah J. Tremblay, Ioannis Kymissis and Colin Nuckolls. *Chemistry of Materials*, 2009, 21 (18), pp 4090-4092.
16. "Isolation of OFETs by surface patterning with UV/ozone process." Sung-Jin

Kim, Henry Beveridge, Jeffrey Y. Koberstein, Ioannis Kymissis *Journal of Vacuum Science and Technology B* 27(3):1057-1059 May 2009.

15. "An organic active-matrix imager." Nausieda I, Ryu K, Kymissis I, Sodini, C., Bulovic, V. *IEEE Transactions on Electron Devices* 55(2):527-532 Feb 2008.

14. "Tunable threshold voltage and flatband voltage in pentacene field effect transistors" A. Wang, I. Kymissis, V. Bulovic, A. I. Akinwande. *Applied Physics Letters* 89 (11):112109 Sep 11 2006 .

13. "Engineering density of semiconductor dielectric interface states to modulate threshold voltage in OFETs." A. Wang, I. Kymissis, V. Bulovic, and A. I. Akinwande. *IEEE Transactions on Electron Devices*, 53(1):9-13, Jan. 2006.

12. "A lithographic process for integrated organic field effect transistors." *Journal of Display Technology*, I. Kymissis, A. I. Akinwande, and V. Bulovic. 1(2):289-294, Dec. 2005.

11. "Direct extraction of mobility in pentacene OFETs using C-V and I-V measurements." K. Ryu, I. Kymissis, V. Bulovic, C. G. Sodini. *IEEE Electron Device Letters* 26(10):716-718, Oct. 2005

10. "Organic field emission device integrated with organic transistor" Kymissis I, Akinwande AI. *IEEE Transactions on Electron Devices*, 52 (8): 1907-1914 Aug. 2005

9. "Memory effect from charge trapping in layered organic structures." S-H. Kang, T. Krisp, I. Kymissis, V. Bulović. *Applied Physics Letters* 85 (20):4666-4668 November 15, 2004

8. "Electrical and optical characterization of field emitter tips with integrated vertically stacked focus." L. Dvorson, G. Sha, I. Kymissis, C-Y. Hong, A. I. Akinwande. *IEEE Transactions on Electron Devices* 50 (12): 2548-2558 December 2003

7. "Field Emission from Patterned Organic Conducting Composite." I, Kymissis, A. I. Akinwande. *Applied Physics Letters* 82 (14): 2347-2349 April 7 2003.

6. "Double Gated Silicon Field Emitters." L. Dvorson, I. Kymissis, A. I. Akinwande. *Journal of Vacuum Science and Technology B* 21, 486 January 2003

5. "Patterning Pentacene Organic Thin Films." I. Kymissis, C. D. Dimitrakopoulos, S. Purushothaman. *Journal of Vacuum Science and Technology B*. 20 (3): 956-959 May-Jun 2002.

4. "High-performance bottom electrode organic thin-film transistors." I. Kymissis, C. D. Dimitrakopoulos, S. Purushothaman. *IEEE Transactions on Electron Devices* 48 1060-1064 June 2001.

3. "Low Voltage, High Mobility Pentacene Transistors with High Dielectric Constant Insulators." C. D. Dimitrakopoulos, I. Kymissis, S. Purushothaman, D. A. Neumayer, P. R. Duncombe, R. B. Laibowitz. *Advanced Materials* 11 1372-1375 Nov 1999.

2. "Low Operating Voltage and High Mobility Field Effect Transistors Comprising Pentacene and Relatively High Dielectric Constant Insulators." C. D. Dimitrakopoulos, S. Purushothaman, J. Kymissis, A. Callegari. *Science* 283 822-824 Feb 5 1999.

1. "Trans-trans 2, 5 bis(2-(5-(2,2i₂ce Bithienyl)ethenyl) Thiophene: Synthesis, Characterization, Thin Film Deposition, and Fabrication of Organic Field Effect Transistors." C. D. Dimitrakopoulos, A. Afzali-Ardakani,, B. Furman, J. Kymissis, S. Purushothaman. *Synthetic Metals* 89 193-197 Sep 1997.

CONFERENCE (invited, plenary) EDSSC, Xi'an China

PRESENTA-

TIONS/POSTERS/DEMO (Invited) IDW 2018, Nagoya, Japan

(Invited, plenary) INMS 2018, Hamamatsu, Japan

(invited, plenary) Second annual workshop on MicroLED, Shenzhen China

Diagnosing SLE Arthritis with Dynamic Diffuse Optical Spectroscopy 2018 ACR/ARHP Annual Meeting

Kim Y, Marone A, Thompson SM, Sowah JN, Shulevitz HJ, Kim HK, Kymissis I, Hielscher AH. Conformable, Wearable and Scalable Imaging Bands for Assessing Joints Diseases. In Microscopy Histopathology and Analytics 2018 Apr 3 (pp. JTh3A-34). Optical Society of America.

Colon-Berrios, Aida R., Hassan Edrees, Daniel De Godoy, Peter Kinget, and Ioannis Kymissis. "Die-level processing for 3-D monolithic integration of piezoelectric MEMS on CMOS." In SOI-3D-Subthreshold Microelectronics Technology Unified Conference (S3S), 2017 IEEE, pp. 1-3. IEEE, 2017.

Liang, W., Alexandrou, K., Klebanov, M., Kuo, C. C., Kymissis, I., Sundaram, K. B., Liou, J. J. (2017, July). Characterization of ESD protection devices under total ionizing dose irradiation. In Physical and Failure Analysis of Integrated Circuits (IPFA), 2017 IEEE 24th International Symposium on the (pp. 1-4). IEEE.

(Invited) Integrated Light Management as a Path to Miniaturizing Spectrometers Nadia K. Pervez, Tanya C. Garza, Michael J. Gazes, James I. Scholtz, Mark F. Comerford, and Ioannis Kymissis Imaging and Applied Optics 2017 (3D, AIO, COSI, IS, MATH, pcAOP) OSA Technical Digest (online) (Optical Society of America, 2017), paper ATh2A.3

(invited) National Research Center, Athens, Greece

(Invited) 2018 Workshop on smell sensing, AIT Tullin, Austria

(invited) ICDM 2018, "Surface treatment for OFETs" Guangzhou, China

(short course) ICDM 2018, "MicroLEDs" Guangzhou, China

(Invited) CMOC 2018, New Haven, CT

(invited) IWPSD, "X-ray analysis of OFETs" New Delhi, India

(short course) IWPSD, "Quantum Dots in Displays" New Delhi, India

(Keynote, panelist) Boston HubWeek 2017

(Invited) SID Annual Symposium 2017

(Invited, plenary speaker) 2017 Hai'an Workshop on Microelectronics, Hai'an China

Colon-Berrios AR, Edrees H, McGinn C, Cavallari MR, Kinget P, Kymissis I. CMOS integrated ZnO thin film bulk acoustic resonator with Si₃N₄ susceptor layer for improved IR sensitivity. Device Research Conference (DRC), 2017

Bahamonde JA, Colon AR, Krishnaswamy H, Kymissis I. Acoustoelectric amplification of surface acoustic waves on ZnO deposited on AlGa_N/Ga_N Epi. Device Research Conference (DRC), 2017

(invited) NYC Media Lab summit 2016, presentation and workshop

(Invited) CMOC 2016, New Haven, CT

Youngwan Kim, Christopher Choi, Theodore H Schwartz, Hongtao Ma, Ioannis Kymissis " " 2016 SID IZone demonstration, San Francisco, CA, May 2016.

A Masurkar, I Kymissis. Comparison of top-and bottom-contact pentacene field-effect transistors using photocurrent microscopy. Device Research Conference (DRC), 2016

Radiation hardened graphene field effect transistors. K Alexandrou, A Masurkar, H Edrees, JF Wishart, Y Hao, N Petrone, J Hone, I Kymissis. Device Research Conference (DRC), 2016

(Invited) Bioelectronics and More 2016, Wiener Neustadt, Austria.

Youngwan Kim, Christopher Choi, En-Chen Chen, Andy GS Daniel, Amrita Masurkar, Theodore H Schwartz, Hongtao Ma, Ioannis Kymissis "An ultra thin implantable system for cerebral blood volume monitoring using flexible OLED and OPD," 2015 IEEE International Electron Devices Meeting (IEDM), Washington, DC, 2015, pp. 29.6.1-26.6.4.

Hurst, Adam M; Chenet, Daniel; van der Zande, Arend; Kymissis, Ioannis; Hone, James; A molybdenum disulfide piezoelectric strain gauge Nanotechnology (IEEE-NANO), 2015 IEEE 15th International Conference on 1122-1125 2015 IEEE

Shyuan Yang, Ioannis Kymissis. Large scale temperature monitoring system for detection of potential ebola patient Proceedings of the 8th ACM International Conference on Pervasive Technologies Related to Assistive Environments, 7/21/15

(Invited Paper) Brian R Tull, Zeynep Basaran, Dafna Gidony, Alexander B Limanov, James S Im, Ioannis Kymissis, Vincent W Lee. High Brightness, Emissive Microdisplay by Integration of III-V LEDs with Thin Film Silicon Transistors. SID Symposium Digest of Technical Papers 2015/6/1

Fabio Carta, Htay Hlaing, Hassan Edrees, Shyuan Yang, Mingoo Seok, Ioannis Kymissis. Co-development of complementary technology and modified-CPL family for organic digital integrated circuits. MRS Proceedings, 2015 Volume 1795 19-25

Fall MRS, Boston, MA 2015.

(invited) SPIE Optics+Photonics, San Diego, CA 2015.

(invited) Fall MRS, Boston, MA 2014.

(invited) “An Implantable System for Brain Blood Flow Monitoring Using Flexible OLEDs and OPDs.” Ioannis (John) Kymissis, Amrita Masurkar, Youngwan (Willis) Kim, En-Chen (Patrick) Chen, Hongtao Ma, Theodore Schwartz. USAMC 17th Biannual Bioscience review, Baltimore MD. 2014.

”BEOL Integration with excimer laser recrystallization” Fabio Carta, Ioannis Kymissis. GIT 2013 (best poster award, 2nd place)

“A printable sensor for ammonia vapors.” Kalpana, Shyuan Yang, Ioannis Kymissis, Howard Katz. FlexTech 2014, Phoenix, AZ.

“Metacapacitors: Printed Capacitors for High Efficiency Power Supplies.”. Shyuan Yang, Ioannis Kymissis. FlexTech 2014, Phoenix, AZ. (best poster award, 2nd place)

“An Implantable System for Brain Blood Flow Monitoring Using Flexible OLEDs and OPDs.” FlexTech 2014, Phoenix, AZ.

(invited) “Thin Film Electronics for Mechanical Sensing and Actuation” Ioannis Kymissis. IEEE 2014 Packaging Symposium, Binghamton, NY

“Printable, High Performance Nanoparticle/Polymer Composite Capacitors” Shyuan Yang, Barry Van Tassell, Shuangyi Liu, Eli S. Leland, Daniel A. Steingart, Stephen O’Brien, Ioannis Kymissis. Fall MRS, December 2013. Boston MA

“Low Temperature Spray Deposition of Multilayer Polymer Ceramic Composite Capacitors” Barry Van Tassell, Paul Chando, Shyuan Yang, Shuangyi Liu, Limin Huang, Stephen O’Brien, Ioannis Kymissis, Daniel A Steingart. Fall MRS, December 2013. Boston MA

“Printable Ammonia Sensor Based on Organic Field Effect Transistor” Kalpana Besar, Ana Maria Rule, Patrick N. Breyse, Ioannis John Kymissis, Howard E Katz. Fall MRS, December 2013. Boston MA

“Electrophoretic Deposition of Solution-Phase Ligand-Exchanged Quantum Dots and Their Application in Optoelectronic Devices” Htay Hlaing, Seung Whan Lee, Irving P Herman, Ioannis Kymissis. Fall MRS, December 2013. Boston MA

“Analysis of Optimized Photovoltaic Devices Using Impedance Spectroscopy” Jonathan Beck, James Basham, David Gundlach, Ioannis Kymissis. Fall MRS, December 2013. Boston MA

“Investigation of Photocurrent and Photogeneration in Organic Field Effect Transistors” Amrita Masurkar, Ioannis Kymissis. Fall MRS, December 2013. Boston MA

“Monolithic versus Three-Terminal Tandem Photovoltaics: A Detailed Balance Comparison” Octavi Escala Semonin, Paul A George, Robert A Barton, Ioannis Kymissis. Fall MRS, December 2013. Boston MA

“Graphene Electrodes for Quantum Dot Solar Cells” Robert A Barton, Octavi E Semonin, Joshua Choi, Nicholas Petrone, Yuanda Gao, James Hone, Jonathan Owen, Ioannis Kymissis. Fall MRS, December 2013. Boston MA

“Large-Area CVD Graphene as Molecular Template and Transparent Electrode for Organic Solar Cells” Htay Hlaing^{1, 2}, Rob Barton¹, Theanne Schiros¹, Nicholas Petrone²,

James Hone^{1, 2}, Ioannis Kymissis, Fall MRS, December 2013. Boston, MA.

“An implantable PVDF microphone for a totally implantable cochlear implant” Andy Zhang, Elizabeth Olson, Ioannis Kymissis. SPIE Optics+Photonics, August 2013. San Diego, CA.

“Solution-Processed Organic Transistors with Chemically Modified Copper Electrodes.” Chang Hyun Kim, Htay Hlaing, Fabio Carta, Yvan Bonnassieux, Gilles Horowitz, and Ioannis Kymissis. FPI-11. June 2-11 2013, Aquitaine, France.

“Integrated CMOS Quantitative Polymerase Chain Reaction Lab-on-Chip,” Haig Norian, Ioannis Kymissis, Kenneth Shepard. 2013 Symposium on VLSI Circuits, to appear June 2013.

“Amorphous Silicon - graphene anodes for lithium ion batteries”, Filippos Farmakis, Kostas Alexandrou, Costas Elmasides, Ioannis Kymissis and Nikolaos Georgoulas, SPIE Grenoble to appear April 2013

“Demo: An adaptive multihop network testbed for energy harvesting active networked tags (EnHANTs),” R. Margolies, L. Pena, K. Kim, Y. Kim, M. Wang, M. Gorlatova, J. Sarik, J. Zhu, P. Kinget, I. Kymissis, and G. Zussman, in Proc. IEEE INFOCOM’13, Apr. 2013.

”Project-based learning within a large-scale interdisciplinary research effort,” M. Gorlatova, J. Sarik, I. Kymissis, and G. Zussman, in Proc. ITiCSE 2013

“Printable, flexible, high performance capacitors for power circuit application,” S. Yang, B. Van Tassell, P. Chando, C. Le, S. Liu, E. S. Leland, Conference D. A. Steingart, S. O’Brien, P. R. Kinget, I. Kymissis, , FlexTech Alliance, January 2013.

“Asymmetric Leakage in (Ba, Sr)TiO₃ Nano Particle/Parylene-C Composite Capacitors,” S. Yang, B. R. Tull, N. K. Pervez, L. Huang, E. S. Leland, D. Steingart, S. O’Brien, I. Kymissis, MRS Conference, Best Poster Award Nominee, November 2012.

“Metacapacitor: Flexible, low cost, high performance capacitor for power electronics” S. Yang, B. Van Tassell, P. Chando, C. Le, S. Liu, E. S. Leland, D. A. Steingart, S. O’Brien, P. R. Kinget, I. Kymissis, NY-Best Conference, November 2010.

J. Sarik, C. Li, and I. Kymissis, ”Fabricating electronics with rapid prototyping tools,” in Proc. 6th TEI, Jan. 2012.

“Use of Subwavelength Structures to Improve Optics and Transport in Organic Photovoltaics.” J. H. Beck, B. Ray, C. Tsai, R. R. Grote, R. M. Osgood, D. Englund, C. T. Black, M. A. Alam, I. Kymissis. MRS Fall 2012, Boston, MA.

“Electrostrictor with Monolithically Integrated CMOS TFT Control.” Fabio Carta, Yu-Jen Hsu, John Sarik, Ioannis Kymissis. CIMTEC 2012. June 10-14 2012, Montecatini Terme, Italy.

(invited) “Energy Harvesting Active Network Tags (EnHANTs)” Ioannis Kymissis. IdTechEx Energy Harvesting 2012.

“Active matrix PVDF array for thermal imaging and acoustic signal processing ap-

plications.” Yu-Jen Hsu, Shyuan Yang, Nadia Pervez, Ioannis Kymissis. SPIE Optics+Photonics 2012.

“High throughput pH and ion sensing via CMOS FGFET arrays” Alok Prabu, Shyuan Yang, Ioannis Kymissis, Kalle Levon. SPIE Optics+Photonics 2012.

“Fabrication and Electrochemical Characterization of Multiplexed Electrode System for DNA Biosensing. ” Zeynep Basaran, Janet Lee, Marisa Buzzeo, Ioannis Kymissis. SPIE Optics+Photonics 2012.

“Evaluating Photovoltaic Performance Indoors,” Y. Afsar, J. Sarik, M. Gorlatova, G. Zussman, I. Kymissis, in Proc. 2012 IEEE Photovoltaic Specialist Conference, Austin, TX, June 2012.

(Invited) “An Active Matrix Microphone.” Ioannis Kymissis, Y. Hsu. ISDRS 2011.

“Electrical readout of photochromic state.” Hassan Edrees, Nadia Pervez, Ioannis Kymissis. SPIE Optics+Photonics 2011.

“Sequential Lateral Solidification of Silicon on Low-K Dielectrics for 3D Integrated Circuits,” V.W. Lee, G.S. Ganot, A.B. Limanov, J.S. Im, I. Kymissis. T5.20, Materials Research Society Fall Meeting 2011.

“Method for Efficient Droplet Extraction from Covered Droplet-in-Oil Electrowetting-on-Dielectric Devices.” Haig Norian, Ioannis Kymissis and Kenneth Shepard; MRS Fall Meeting 2011.

“Demo: prototyping UWB-enabled enhants.” Jianxun Zhu, Gerald Stanje, Robert Margolies, Maria Gorlatova, John Sarik, Zainab Noorbhaiwala, Paul Miller, Marcin Szczodrak, Baradwaj Vigraham, Luca Carloni, Peter Kinget, Ioannis Kymissis, and Gil Zussman. In Proceedings of the 9th international conference on Mobile systems, applications, and services (MobiSys '11). ACM, New York, NY, USA, 387-388. DOI=10.1145/1999995.2000048

“Demo: Organic solar cell-equipped energy harvesting active networked tag (EnHANT) prototypes” Gerald Stanje, Paul Miller, Jianxun Zhu, Alexander Smith, Olivia Winn, Robert Margolies, Maria Gorlatova, John Sarik, Marcin Szczodrak, Baradwaj Vigraham, Luca Carloni, Peter Kinget, Ioannis Kymissis, and Gil Zussman. In Proceedings of the 9th ACM Conference on Embedded Networked Sensor Systems (SenSys '11). ACM, New York, NY, USA

(Invited) “Photocurrent And Noise Analysis as Alternative Approaches to Understanding OFET Behavior,” Ioannis Kymissis. Organic Electronics Workshop 2011

“Building interactive systems using unconventional electronics” John Sarik, Ioannis Kymissis. TEI 2011. 10.1145/1935701.1935788

“A piezoelectric polymer based tone analyzer with integrated organic field effect transistors”, Yu-Jen Hsu and Ioannis Kymissis. MRS Spring Meeting 2011.

“An active matrix arrayed microphone with acoustic bandwidth response”, Yu-Jen Hsu and Ioannis Kymissis. Transducers 2011 Beijing.

“An active matrix arrayed microphone with acoustic bandwidth response”, Yu-Jen Hsu

and Ioannis Kyriakidis. SPIE Photonic Devices + Applications 2011.

(Invited) “Locally amplified sensors for large area systems.” - MRS Spring, 2011

“Photovoltaic Device Performance Enhancement by Interfacial Decoration of Bulk-Heterojunctions with Semiconducting Nanocrystals” Theodore Kramer, Ioannis Kyriakidis, and Irving Herman. APS March Meeting 2011.

(Invited) “Photocurrent And Noise Analysis as Alternative Approaches to Understanding OFET Behavior,” I. Kyriakidis, ICEL’10, Ann Arbor, MI. October 2010.

“Lab kits using the Arduino Prototyping Platform”. T3C. John Sarik and Ioannis Kyriakidis. ASEE/IEEE Frontiers in Education. Washington, DC October 2010

“A directly-addressed monolithic LED array as a projection source,” Vincent W. Lee, Ioannis Kyriakidis, SPIE Optics+Photonics 2010, San Diego, CA, Aug 2010

“Strain field and magnetic field sensors with OLED indicators employing piezoelectric and magnetoresistive gated OFET,” Hsin-Jung Lee, Shyuan Yang, Yu-Jen Hsu, Ioannis Kyriakidis, SPIE Optics+Photonics 2010, San Diego, CA, Aug 2010

“Photonic crystal spectrometer,” Nadia K. Pervez, Warren Cheng, Zhang Jia, Marshall P. Cox, Hassan M. Edrees, Ioannis Kyriakidis, SPIE Optics+Photonics 2010, San Diego, CA, Aug 2010

“Weak 2D photonic crystals for outcoupling of multiple color bands,” Nadia K. Pervez, Warren Cheng, Chee Wei Wong, Ioannis Kyriakidis, SPIE Optics+Photonics 2010, San Diego, CA, Aug 2010

“Demo: Prototyping Energy Harvesting Active Networked Tags with MICA2 Motes,” Gorlatova M., Sharma T., Shrestha D., Xu E., Chen J., Skolnik A., Piao D., Kinget P., Kyriakidis I., Rubenstein D., Zussman G., IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), Boston, MA, June 2010

(invited) I. Kyriakidis. “Hybrid Integration using Organic Semiconductors” CMOE 2010, Storrs, CT.

Z. Jia, V.W. Lee, L. Floreano, A. Verdini, A. Cossaro, A. Morgante, I. Kyriakidis. “Direct observation of pentacene-thiol interaction using x-ray spectroscopy” II6.86, MRS Conference, Spring 2010

“Performance of graphene nanoelectromechanical resonators” Changyao Chen, Sami Rosenblatt Kirill Bolotin, William Kalb, Philip Kim, Ioannis Kyriakidis, Horst Stormer, Tony Heinz, James Hone. APS March Meeting, 2010

“Photonic Crystal Spectrometer” Nadia Pervez, Warren Cheng, Zhang Jia, Marshall Cox, Hassan Edrees, Ioannis Kyriakidis, APS March Meeting, 2010

“Direct observation of pentacene-thiol interaction using x-ray spectroscopy” Zhang Jia, Vincent Lee, Luca Floreano, Alberto Verdini, Albano Cossaro, Alberto Morgante, Ioannis Kyriakidis. APS March Meeting, 2010

“Personalizing your pixels” John Sarik, Ioannis Kyriakidis. 4th ACM International Conference on Tangible, Embedded, and Embodied Interaction pp 353-

356, Cambridge, MA. January 2010.

“NEMS applications of graphene” Changyao Chen; Rosenblatt, Sami; Bolotin, Kirill I.; Kim, Philip; Kymissis, Ioannis; Stormer, Horst L.; Heinz, Tony F.; Hone, James; IEEE International Electron Devices Meeting (IEDM), 2009

“A Locally Amplified Organic Transistor Strain Sensor Based on a Piezoelectric Polymer” Y.J. Hsu, Z. Jia, I. Kymissis, Aug, 2009, SID-MAC Symposium on Organic and Thin Film Electronics, Cornell University.

“Novel High Frequency Surface Mounted Optical Recording System for Chronic Intracranial Optical Imaging.” Ma, H. T. and Cox, M. and Bahlke, M. and Beck, J. and Zhao, M. and Kymissis, I. and Schwartz, T. *Epilepsia*, 50 p 393, 2009.

“Semiconductor-Dielectric Interfacial Study using Spectral-Spatial Photocurrent Probes and 1/f Noise Probe in Organic Field Effect Transistors.” Zhang Jia, Inanc Meric, Kenneth Shepard and Ioannis Kymissis. 2009 Fall MRS, Boston, MA.

“Strain Field and Magnetic Field Sensors with OLED Indicators Employing Piezoelectric and Magnetoresistive Gated OFET.” Hsin-Jung Lee, Shyuan Yang, Yu-Jen Hsu and Ioannis Kymissis. 2009 Fall MRS, Boston, MA.

“Semiconductor-Dielectric Interfacial Study Using Spectral-Spatial Photocurrent Probes and 1/f Noise Probe in Organic Field Effect Transistors” Zhang Jia, Inanc Meric, Kenneth Shepard, and Ioannis Kymissis. 2009 ISDRS, College Park, MD.

(invited) “A locally amplified strain sensor using piezoelectric polymers and Organic Field Effect Transistors” I. Kymissis. 2009 SPIE International Symposium on Optical Science and Technology, San Diego CA.

”Challenge: Ultra-Low-Power Energy-Harvesting Active Networked Tags (EnHANTs)” Maria Gorlatova, Peter Kinget, Ioannis Kymissis, Dan Rubenstein, Xiaodong Wang, and Gil Zussman. Mobicom 2009, Beijing, China.

”An Array of Monolithic FBAR-CMOS Oscillators for Mass-Sensing Applications.” M.L. Johnston, I. Kymissis, and K.L. Shepard. *Transducers 2009*, Denver CO.

(invited) ”Flexible Electronics Activities in the United States.” 2nd International Symposium on Flexible Organic Electronics, Halkidiki, Greece. July 2009.

(invited) “Organic semiconductor-based sensors for strain and reflectivity monitoring.” 2nd International Symposium on Flexible Organic Electronics, Halkidiki, Greece. July 2009.

“Organic Photovoltaics from Extended Aromatic Molecules.” Alon A. Gorodetsky, Marshall Cox, Noah J. Tremblay, Ioannis Kymissis, Colin Nuckolls. Symposium on Organic and Thin-Film Electronics, Society for Information Displays, Ithaca, NY, August 18, 2009.

“Air Stable Organic Photovoltaics from Small Molecule Acene Derivatives.” Alon A. Gorodetsky, Marshall Cox, Noah J. Tremblay, Ioannis Kymissis, Colin Nuckolls. Organic Microelectronics and Optoelectronics Workshop V, American Chemical Society and Materials Research Society, San Francisco, CA, July 6-9, 2009.

“Spin-cast high-k non-hysteresis barium titanate nanoparticle thin film as gate dielectric in organic thin film transistors” Z. Jia, L. Huang, S. O’Brien, I. Kymissis. MRS Spring 2009, San Francisco, CA.

“Photocurrent study of traps states in pentacene thin film transistors” Z. Jia, L. Banu, I. Kymissis. MRS Spring 2009, San Francisco, CA.

“A Locally Amplified Organic Transistor Sensor Based on a Piezoelectric Polymer” Y.-J. Hsu, Z. Jia, I. Kymissis. MRS Spring 2009, San Francisco, CA.

“A Locally Amplified Organic Transistor Sensor Based on a Piezoelectric Polymer” Y.-J. Hsu, Z. Jia, I. Kymissis. Connecticut Microelectronic and Optoelectronic Consortium Annual Meeting, 2009.

“Photocurrent study of traps states in pentacene thin film transistors”. Z. Jia, L. Banu, I. Kymissis. Connecticut Microelectronic and Optoelectronic Consortium Annual Meeting, 2009.

(invited) “Integrated Circuits, Optics, and Sensors using Organic Field Effect Transistors and Photodetectors” International Meeting on Information Display/Asia Display 2008. Ilsan, Korea, 2008.

(invited) “Beyond mobility: optical and electrical probes for characterizing and understanding OFETs” I. Kymissis. 2008 International Materials Research Conference (IMRC), Chongqing, China.

(invited) “Active matrix photodetection using OFETs and printed photoconductors” I. Kymissis. 2008 International Materials Research Conference (IMRC), Chongqing, China.

“Influence of Source-Drain Contact Resistance on Mobility in Organic FETs” K. Ryu, I. Nausieda, I. Kymissis, V. Bulovic, and C.G. Sodini, 3rd Annual Organic Microelectronics Workshop, Seattle, WA, July 2007

“An Organic Imager for Flexible Large Area Electronics” I. Nausieda, K. Ryu, I. Kymissis, A. Akinwande, V. Bulović, C. Sodini. 2007 International Solid State Circuits Conference (ISSCC), San Francisco, CA.

(invited) “Characterization of OFETs in the linear region of operation.” ACS NERM, Binghamton, NY. October 2006. I. Kymissis, K. Ryu, A. Wang, I. Nausieda, C. Sodini, V. Bulović.

“A Locally Amplified Organic Transistor Strain Sensor Based on a Piezoelectric Polymer” Y.J. Hsu, Z. Jia, I. Kymissis, Nov, 2008, IEEE EDS Western Region Symposium, Rochester, New York.

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PRESENTATIONS

SUSTECH (2018), Jordan University of Science and Technology (JUST) (2018), Kent state University (2018), McMaster University (2018), Honda research (2017), Abo Akademi (2017), Corning (2017), UCSD (2017), UDelaware (2017), IBM Research (2016), Microsoft (2016), Lehigh University (2016), University of Central Florida (2016), Checkpoint (2016), University of West Virginia (2016), KAUST (2016), Ecole Polytechnique (Paris) (2016), University of Pennsylvania (2015), Datacolor (2015), Jet Propulsion Laboratory (2015), Xerox (2014), University of Toronto (2014), UCLA (Material Science) (2014), NIST (2014), Princeton University (Mechanical Engineering) (2014), NC State (EE) (2013), Department of Physics, City College (2014), Cooper Union (2013), QDVision (2013), University of Michigan (2012), City College, Department of Chemistry, City University of New York (2012), City College, Department of Chemical Engineering, City University of New York (2012), General Electric Global Research Center (2012), Microsoft (2012), Plextronics (2012), University of Iowa (2012), UC Irvine (2012), Ecole Polytechnique (Montreal) (2012), University of Florida (2012), Cooper Union (2011), Stanford Research Institute (2011), University of Washington (2011), Wake Forest (2010), University of Delaware (2010), Queens College (2009), University of Puerto Rico Mayagues (2009), Yale University (2009), Seoul National University (2008), Samsung Mobile Display (2008), University of Connecticut (2008), Princeton University (2008), TASC/Elettra (2008), Columbia University MRSEC colloquium (2007), Rochester Institute of Technology (2007), Cornell MSE Colloquium (2005), Binghamton EE (2005) IEEE Expert Now online short course on organic field effect transistors (2006)

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UNIVERSITY LEADERSHIP	<p>Provost Leadership Fellow (2017-2019) Member. Provost research advisory committee to the library (PACL) (2018-present) CNI Shared Facilities Director (2016-present) Faculty advisor, TBP (2016-present) Faculty advisor, Columbia Space Initiative (2015-present) Faculty in Residence, Hartley Hall/first-year zone (2012-present) Columbia Maker Space, Director (2014-present) Nano Initiative co-chair (2014-2016) CISE/Columbia Nano Initiative executive committee (2012-present) EFRC: Thrust leader and executive committee member (2008-2014) Institute for Data Sciences and Engineering: Space planning committee (2012-present) Columbia University Cleanroom Committee (2008-present) NSEC: Outreach and education committee member (2008-2010) Columbia Environmental Health and Safety Faculty Working Group (2008-2015)</p>
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Methods for Whole Blood Analysis” Columbia University APAM, Peter Bullen 2019 (PhD)

”Optoelectronic Neural Implant Sensors for Cerebral Blood Volume Monitoring” Columbia University EE, Christopher Choi 2018 (PhD, Fenwick and West)

”Monolithic Integration Piezoelectric Resonators on CMOS for Radio-Frequency and Sensing Applications” Columbia University EE, Aida Colon Berrios 2018 (PhD, Apple)

”Charge Injection and Transport in Pentacene Field-Effect Transistors” Columbia University EE, Amrita Masurkar 2016 (PhD, BAE Systems)

”Monolithically Integrated Acoustic Resonators on CMOS for Radio-Frequency Circuit Applications” Columbia University EE, Hassan Eddrees 2016 (PhD, Apple)

”Ionizing Radiation Effects on Graphene Based Field Effects Transistors” Columbia University EE, Kostas Alexandrou 2016 (PhD, Intel)

”Optimization of Printed Electronics”, Columbia University EE, Shyuan Yang 2015 (PhD, Apple)

”Excimer Laser Crystallization of Silicon Thin Films for Monolithic 3D Integration”, Columbia University EE, Fabio Carta 2015 (PhD, IBM)

”Harvest,” School of Visual Arts, MFA Damon Ahola, 2014 (MS)

”Organic photovoltaic device architectures”, Columbia University EE, Jonathan Beck 2013 (PhD, Apple)

”Systems for Pervasive Electronics and Interfaces”, Columbia University EE, John Sarik 2013 (PhD, Nanohmics)

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”Ultrasound Data Communications for Ultra-low-power Wake-up in Sensor Nodes”, Columbia University EE, 2012, Kshitij Yadav. Co-supervised with Peter Kinget. (PhD, Qualcomm)

”Advanced Integration of Devices Enabled by Laser Crystallized Silicon”, Columbia University EE, 2012, Vincent Lee. (PhD, Lumiode)

”The Integration and Applications of Organic Thin Film Transistors and Ferroelectric Polymers” Columbia University EE, 2012, Yu-Jen Hsu. (PhD, Lumiode)

”Interfacial Studies in Organic Field-Effect Transistors”, Columbia University APAM, 2011, Zhang Jia. (PhD, Facebook/Oculus)

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