

Biographical Sketch: Ioannis Kymissis

Professional Preparation

S.B.	Electrical Engineering and Computer Science	MIT, Cambridge, MA	1998
M.Eng.	Electrical Engineering and Computer Science	MIT, Cambridge, MA	1999
Ph.D.	Electrical Engineering and Computer Science	MIT, Cambridge, MA	2003

Appointments

2006-present	Assistant Professor	Columbia University, New York, NY
2005-2006	Senior Consulting Engineer	QDVision, Inc. Watertown, MA
2003-2006	Post-doctoral Associate	MIT, Cambridge, MA Laboratory of Organic Optics and Electronics

Five representative/related publications

“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):913, Jan. 2006.

“A lithographic process for integrated organic field effect transistors.” *Journal of Display Technology*, I. Kymissis, A. I. Akinwande, and V. Bulovic. 1(2):289294, Dec. 2005.

“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

“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.

“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.

Five other publications

“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

“Organic Field Emission Device Integrated With Organic Transistor.” Ioannis Kymissis and Akinwande I. Akinwande. *IEEE Transactions on Electron Devices* 52(8):1907-1914 Aug. 2005.

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

“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.

“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 1999.

Synergistic activities

Previous research the PI has engaged in at MIT has been primarily supported by MARCO, the IBM corporation, and the Hewlett-Packard corporation. Significant results from that work include:

- Demonstration of the crystal frustration region at the channel edge and a treatment for suppressing that frustration and improving injection. The PI was awarded two patents and the Paul Rappaport award from the IEEE Electron Device Society for this contribution.
- Development of a strategy for lithographically patterning OFETs. This patented technique is one of two major strategies developed for this purpose and has been adopted by Polymer Vision, a spin off of Philips Corporation commercializing a flexible OFET-backplane based display.
- Demonstration of field emission from polymer materials, and control of this field emitter using a high-voltage organic field effect transistor circuit. This advance was awarded the SGS award at the IVNC as the best student vacuum electronics presentation that year.
- Development of a new laboratory course at MIT. Started a new course at MIT together with A.I. Akinwande (MIT) and served as both TA and as a co-lecturer.

Collaborators and other affiliations

0.1 Collaborators and co-editors

Prof. Kymissis is continuing to collaborate with C. G. Sodini, A. I. Akiwande, and V. Bulovic (MIT) on the ZnO and OFET programs established at MIT. The ZnO project is itself a collaboration with HP, and involves R. Hoffman (HP) and P. Mardilovich (HP).

A book proposal has been prepared together with A. I. Akinwande (MIT).

Prof. Kymissis is organizing a session of the ACE NER with Prof. G. Malliaras (Cornell) and Prof. M. Poliks (Binghamton). Prof. Kymissis is also organizing a session for the Spring 2007 MRS meeting with J. Rogers (UIUC), M. Schein (UMichigan), V. Bulovic (MIT), T. Someya (UTokyo), and S. Coe-Sullivan (QDVision Inc.).

Prof. Kymissis is also a consultant for QDVision corporation, and in that capacity works closely with P. Kazlas, S. Coe-Sullivan, and J. Ritter (QDVision).

0.2 Graduate and postdoctoral advisors

A. I. Akinwande (MIT) and C. D. Dimitrakopoulos (IBM) were Prof. Kymissis's M.Eng. advisers. A. I. Akinwande (MIT) supervised his Ph.D. thesis, and V. Bulovic (MIT) was his postdoctoral advisor and sponsor.

0.3 Thesis advisor and postdoctoral sponsor

Prof. Kymissis, in his capacity as postdoctoral associate at MIT, was directly involved in advising and training the following graduate students: A. I. Wang (MIT; Ph.D and M.Eng thesis), K. Ryu (MIT M.S. and Ph.D.), and I. Nausieda (MIT M.S.).