ANANTH DODABALAPUR

a. Professional Preparation

The University of Texas at Austin	Electrical Engineering	Ph.D., 1990
The University of Texas at Austin	Electrical Engineering	M.S., 1987
Indian Institute of Technology, Madras	Electrical Engineering	B.Tech., 1985

Post-doctoral member of technical staff, AT&T Bell Laboratories, July 1990-Sept. 1992

b. Main Appointments

Sept. 2001- present, Professor, Department of Electrical and Computer Engineering, The University of Texas at Austin, and June and Gene Gillis Endowed faculty Fellow.

From 9/1/2006 to 09/2014: Ashley H Priddy Centennial Professor of Enineering
From 09/2014 - Cullen Trust Endowed Professor

Oct. 1992- Aug. 2001, Bell Laboratories, Lucent Technologies/AT&T, Murray Hill, NJ 07974
Member of Technical Staff (Principal Investigator), Optical Physics Research Department, Physical Research Laboratory, Murray Hill, NJ.

July 1990-Sept. 1992, AT&T Bell Laboratories, Holmdel, NJ 07733

c. Significant Concurrent Appointments (see details below):

Dec 2003-August 2006: Co-Founder and Chief Scientst, OrganicID, Inc.
Jan 2005- Present; Visiting Investigating Professor, A*Star, Institute of Materials Research and Engineering, Singapore
Jan 2009-Dec 2010: Chairman, NSF-ONR-WTEC Panel on Hybrid Flexible Electronics
Director, International Programs and Leadership Team Member, NSF ERC "NASCENT", The University of Texas at Austin

Honors and Awards:

ACS National Award for team innovation (2002)
R&D 100 Award (2001).
Gillis Endowed Faculty Fellowship, The University of Texas (2001-)
Biography listed in Who's who in America, American Men and Women of Science (since 1992), and Marquis's Who's who in Science and Engineering (1996-).
Member of IEEE, MRS
Distinguished lecturer, IEEE Electron Devices Society (2003-7)
Honorary Citizenship of the City of Harrisburg, PA (2007)
Senior Member, IEEE
In the top 5 of the most highly cited scientists in the field of Organic Transistors for the period 1997-2006.

Distinguished Apointments

Editorial Boards: Advanaced Materials (1997-2002), Organic Electronics (2000-),
Chair, IEEE EDS Technical Committee on Organic and Polymer Devices (2003-8)
Visiting Investigating Professor (VIP), Institute of Materials Research and Engineering, Singapore (2004-2013)
Chair, WTEC-NSF Panel on Flexible Hybrid Electronics (2008-9)

Other Significant

- My research is included in list of top 10 scientific breakthroughs for 2000 by ***Science***. Details attached.
- 7 papers in Science/Nature
- > 16,000 Citations (ISI), including 19 papers each with more than 150 citations.
- > 22, 000 citations (Google Scholar)
- H index = 78 (Google Scholar); 65 (ISI Web of K)
- 27 Issued US Patents with > 1000 citations (cited by other US patents only). US Patent H-Index = 18

Non-professional Interests

Nature appreciation, history and philosophy of science, participation in National Renaissance Weekend meetings.

IEEE Responsibilities, Service and Distinctions

1. Member of the Technical Program Committee, Device Research Conference (DRC) (1995-1997). Three year term.
2. Chairman of of technical sub-committee on Organic and Polymer Devices (2007-10?) of IEEE EDS
3. Mmember of the EDS Publication Committee (2007-10?)
4. Plenary speaker, IEDM 2001
5. Plenary Speaker DRC 2000
6. IEEE EDS Distinguished Lecturer (2003-7)

Professional Society Services (Partial List)

Co-Chairman, 1997 Materials Research Society Spring Meeting, San Francisco, Symposium on Organic Electronic Materials and Devices.

Co-Chairman, 1998 Materials Research Society Fall Meeting, Boston, MA, Symposium on Organic Electronic and Photonic Materials and Devices.

Meeting Chairman, SPIE International Symposium on Photonics and Applications, Singapore. 1999.

Co-Chairman, 2001 European Materials Research Society Meeting, Strasbourg, France, Symposium on Organic Photonics.

Co-Chairman, 2006 European Materials Research Society Meeting, Nice, France, Symposium on Sensors.

Co-Chair, IEEE/MRS/ACS Organic Microelectronics Workshop, Toronto, Canada (July 2006);

Guest Editor, Special issue of the IEEE Transactions on Electron Devices, August 1997 issue.

Member, Technical Program Committee, IEEE Device Research Conference (1996-98).

Committee member of several conferences on organic semiconductors and electronic materials

Concurrent Position Details

1. **Co-Founder and Chief Scientist, OrganicID (2003-2006)**
   Co-founded in Dec. 2003 with VC funding and a technology licensing agreement with The University of Texas at Austin. The mission of the company was to develop low-cost printable radio frequency identification tags (RFID) with polymer/plastic electronics components. After technical success in 2006, the company was completely acquired by Weyerhaeuser, Inc, a large US company. After acquisition, OrganicID reached a maximum staff strength of about **50 employees** in 2008. My engagement with OrganicID ceased after acquisition by Weyerhaeuser in August 2006. The VC's who invested in the company made a **4x** return on their investment.

2. **VIP Professorship, A*Star, Singapore (2005-2013)**
   This is one of the flagship projects established by A*STAR, Singapore's agency for Science and Technology Research (analogous to CSIR, India). The original project was for three years (2005-7) and at a funding level of ~ **US$1.4 Million for three years**. It involved the establishment of a research program in Organic and Polymer Electronics in Institute of Materials Research and Engineering (IMRE), on of the A*Star laboratories. I had to **co-supervise about 5 post-doctoral researchers** and spent an average of **8 weeks/year** in Singapore. The project was **renewed for three years (2008-10)** at a similar funding level. It was **renewed for the second time** for a two-year duration (Dec 2010-Dec 2012).

   This project, which has been considered as successful, demonstrated and continues to demonstrate my ability to manage a project in a different continent. This involves the management of young scientists and their research work.

3. **Chairman, US Panel on Flexible Hybrid Electronics (2009-10)**

   I chaired a 6-person panel that evaluated 30 laboratories in Europe working in the field of flexible electronics and photonics. This work was financially sponsored by the NSF and ONR. We prepared a 150-page report on our findings with recommendations. Based on this work, we organized two workshops on the Washington, DC area. I was also invited to present our findings at a special meeting of the National Academies in Washington.

4. **Co-founder, Sensorbit, Inc. (2010-2014)**

   This is a small start-up company that is focussed on commercializing some technology and patents developed in my laboratory at The University of Texas. It was VC-funded. The assets of Sensorbit were acquired in Dec 2014 by Edge3.

Student/Post-Doc Awards

1. 2013 Taejun Ha (Ph.D Student)

Nominated by ECE Department Committee to be the Departmental nominee for the Outstanding Dissertation Award (Feb. 2013)

2. 2012 Christopher Lombardo (Ph.D Student and subsequently Postdoc)

Co-author in poster that won a poster presentation award at the International Synthetic Metals Conference (ICSM 2012, August 2012, Atlanta, Georgia). The award was sponsored by J. Materials Chemistry.

3. 2012 Eric Danielson (Ph.D Student)

Won a student paper award (second place) at the SPIE Meeting in San Diego, August 2012.

4. 2008 Lawrence Dunn (Ph.D. Student)

Won the Ben Streetman Ph.D. reserach Award

5. 2007 Shannon Lewis (M.S. Student)

Won the Ben Streetman Early Resaerch Award (December 2007)

Publications

Book Chapters

A. Dodabalapur, “Organic Microcavity Light Emitting Diodes”, in Organic Light Emitting Devices: A Survey”, J. Shinar, Ed., Springer-Verlag (2001, In press).

A. Dodabalapur, H.E. Katz, and Z. Bao, “Oligo- and poly-thiophene based field-effect transistors”, in Handbook of Oligo- and Polythiophenes”, D. Fichou, Ed., VCH Publishers (1998).

+ 3 more book chapters (2005-2009)

Invited Papers

A. Dodabalapur, “Organic Light Emitting Diodes”, Solid State Comm. **102**, 259 (1997).

A. Dodabalapur, M. Berggren, R.E. Slusher, Z. Bao, A. Timko, E. Laskowski, O. Nalamasu, and H.E Katz, “Organic Lasers based on energy transfer”, IEEE J. Spl. Topics in Quantum Electron.

A. Dodabalapur and B.G. Streetman, "Implantation in InP-The role of Stoichiometric Imbalances," Proceedings of the Symposium on Ion Implantation and Dielectrics in Elemental and Compound Semiconductors, **vol. 90-13**, pp 66-78, The Electrochemical Society, 1990.

B.G. Streetman and A. Dodabalapur, "Ion Implantation and Rapid Thermal Annealing of III-V Materials, " Mat. Res. Soc. Proc. **vol. 126** *Advanced Surface Processes for Optoelectronics*, pp 159-170 (1988).

Key Journal Publications

* Indicates corresponding author(s)

B. Crone, A. Dodabalapur*, Y.Y. Lin, R. Filas, Z. Bao, A. laDuca, R. Sarpeshkar, H.E. Katz, W. Li, “Large scale complementary integrated circuits based on organic transistors”, Nature **403**, 521 (2000).

B. Crone, A. Dodabalapur*, A. Gelperin, *et al*., “Electronic olfaction with organic and polymer transistors”, Appl. Phys. Lett. **78**, 2229 (2001).

M. Meier, A. Mekis, A. Dodabalapur*, A. Timko, R.E. Slusher, J.D. Joannopoulos, and O. Nalamasu, “Laser action from two-dimensional distributed feedback in photonic crystals”, Appl. Phys. Lett. **74**, 7 (1999).

A. Dodabalapur*, Z. Bao, A. Makhija, J.G. Laquindanum, V.R. Raju, Y. Feng, H.E. Katz, and J.R. Rogers, “Organic Smart Pixels”, Appl. Phys. Lett. **73**, 142 (1998).

M. Berggren, A. Dodabalapur*, and R.E. Slusher, and Z. Bao, “Light amplification in organic films with Cascade Energy Transfer”, Nature **389**, 466 (1997).

A. Dodabalapur*, M. Berggren, R.E. Slusher, Z. Bao, A. Timko, E. Laskowski, O. Nalamasu, and H.E Katz, "Organic Lasers based on energy transfer", IEEE J. Spl. Topics in Quantum Electron. Jan/Feb 1998.

A. Dodabalapur*, H.E. Katz, L. Torsi, and R.C. Haddon, "Organic Heterostructure Field-Effect Transistors," Science **269**, 1560 (1995).

A. Dodabalapur*, L.J. Rothberg, R. Jordan, T.M. Miller, and J.M. Phillips, "Physics and Applications of Organic Microcavity Light Emitting Diodes", J. Appl. Phys. **80**, 6954 (1996).

Wang L, Fine D, Dodabalapur A*, Nanoscale chemical sensor based on organic thin-film transistors , APPLIED PHYSICS LETTERS 85 (26): 6386-6388 DEC 27 2004

B. Yoo, B. A. Jones, D. Basu, D. Fine, T. Jung, S. Mohapatra, A. Facchetti, K. Dimmler, M. R. Wasielewski, T. J. Marks, and A. Dodabalapur*, "High-performance solution-deposited n-channel organic transistors and their complementary circuits," *Advanced Materials,* vol. 19, pp. 4028-+, Nov 19 2007.

Sonar P, Singh S, Li, Y, So M, Dodabalapur A*, "A Low-Bandgap Diketopyrrolopyrrole-Benzothiadiazole-Based Copolymer for High-Mobility Ambipolar Organic Thin-Film Transistors" Adv. Materials., October 2010.

Plenary and keynote Talks

Device Research Conference, Denver (DRC) , CO, "Organic Devices" June 2000

Intenational Electron Decices Meeting (IEDM), Organic Devices, December 2001.

International Conference on Materialsand Advanced Technologies (ICMAT) Singapore, July 2007, "Scaling Behavior and Transport Phenomena in Organic and Polymer Transistors" (KEYNOTE).

International Workshop in the Physics of Semiconductor Devices, Kanpur, India, Dec 2011 (PLENARY)

Plastic Electronics Conference, Dresden, Germany, October 2011 (PLENARY)

2014: Keynote speaker at M3 Conference.

Journal Publications (2013-15)

1. "Low voltage, high performance inkjet printed carbon nanotube transistors with solution processed ZrO2 gate insulator", Kim, Bongjun; Jang, Seonpil; Prabhumirashi, Pradyumna L.; Geier, M; Hersam, M; and Dodabalapur, A, APPLIED PHYSICS LETTERS Volume: 103 Issue: 8 Article Number: 082119 Published: AUG 19 2013

2. "Logic-Gate Devices Based on Printed Polymer Semiconducting Nanostripes" Gentili, Denis; Sonar, Prashant; Liscio, Fabiola;… Dodabalapur, A; NANO LETTERS Volume: 13 Issue: 8 Pages: 3643-3647 Published: AUG 2013

3. Band Gap Tunable N-Type Molecules for Organic Field Effect TransistorsGlowatzki, H.; Sonar, P.; Singh, S. P.; ...Dodabalapur, A; JOURNAL OF PHYSICAL CHEMISTRY C Volume: 117 Issue: 22 Pages: 11530-11539 DOI: 10.1021/jp311092s Published: JUN 6 2013

4. "Bimolecular recombination coefficient calculation by in situ potentiometry in a bulk heterojunction organic photovoltaic material"; Danielson, Eric; Ooi, Zi-En; Lombardo, Christopher J.; ...; Dodabalapur, A; APPLIED PHYSICS LETTERS Volume: 102 Issue: 17 Article Number: 173304 DOI: 10.1063/1.4803512 Published: APR 29 2013

5. "Device Physics and Operation of Lateral Bulk Heterojunction Devices:, Lombardo, Christopher J.; Danielson, Eric L.; Glaz, Micah S.; ....Dodabalapur, A; JOURNAL OF PHYSICAL CHEMISTRY B Volume: 117 Issue: 16 Special Issue: SI Pages: 4503-4509 Published: APR 25 2013

6. "The Restorative Effect of Fluoropolymer Coating on Electrical Characteristics of Graphene Field-Effect Transistors", Ha, Tae-Jun; Lee, Jongho; Akinwande, Deji;... Dodabalapur, A; IEEE ELECTRON DEVICE LETTERS Volume: 34 Issue: 4 Pages: 559-561; Published: APR 2013

7. "Photo stability of solution-processed low-voltage high mobility zinc-tin-oxide/ZrO2 thin-film transistors for transparent display applications" Ha, Tae-Jun; Dodabalapur, Ananth; APPLIED PHYSICS LETTERS Volume: 102 Issue: 12 Article Number: 123506; Published: MAR 25 2013

8. High-Performance Current Saturating Graphene Field-Effect Transistor With Hexagonal Boron Nitride Dielectric on Flexible Polymeric Substrates", Lee, Jongho; Ha, Tae-Jun; Parrish, Kristen N.; et al. IEEE ELECTRON DEVICE LETTERS Volume: 34 Issue: 2 Pages: 172-174 Published: FEB 2013

9. "Mapping electric field distributions in biased organic bulk heterojunctions under illumination by nonlinear optical microscopy", Morris, J. D.; Atallah, Timothy L.; Lombardo, Christopher J.; ... Dodabalapur, A;APPLIED PHYSICS LETTERS Volume: 102 Issue: 3 Article Number: 033301 DOI: 10.1063/1.4788707 Published: JAN 21 2013

10. “Transformation of the Electrical Characteristics of Graphene Field-Effect Transistors with Fluoropolymer”Ha, Tae-Jun; Lee, Jongho; Chowdhury, Sk Fahad; ... Dodabalapur, A; ACS APPLIED MATERIALS & INTERFACES Volume: 5 Issue: 1 Pages: 16-20; Published: JAN 9 2013

11. “Charge transport study of high mobility polymer thin-film transistors based on thiophene substituted diketopyrrolopyrrole copolymers” Ha, Tae-Jun; Sonar, Prashant; Dodabalapur, AnanthPHYSICAL CHEMISTRY CHEMICAL PHYSICS Volume: 15 Issue: 24 Pages: 9735-9741 DOI: 10.1039/c3cp51478a Published: 2013

12. “Synthesis, characterization and organic field effect transistor performance of a diketopyrrolopyrrole-fluorenone copolymer” Sonar, Prashant; Ha, Tae-Jun; Dodabalapur, AnanthPHYSICAL CHEMISTRY CHEMICAL PHYSICS Volume: 15 Issue: 20 Pages: 7475-7478 DOI: 10.1039/c3cp50286d Published: 2013

13. “Dithienylbenzothiadiazole-Based Donor-Acceptor Organic Semiconductors and Effect of End Capping Groups on Organic Field Effect Transistor Performance” ; Sonar, Prashant; Singh, Samarendra P.; Lin, Ting Ting; .... Dodabalapur, A.; AUSTRALIAN JOURNAL OF CHEMISTRY Volume: 66 Issue: 3 Pages: 370-380 DOI: 10.1071/CH12421 Published: 2013

14. “Isoindigo dye incorporated copolymers with naphthalene and anthracene: promising materials for stable organic field effect transistors”; Sonar, Prashant; Tan, Huei-Shuan; Sun, Shuangyong;.....; Dodabalapur, A; POLYMER CHEMISTRY Volume: 4 Issue: 6 Pages: 1983-1994 DOI: 10.1039/c2py20942j Published: 2013

15. “A fluorenone based low band gap solution processable copolymer for air stable and high mobility organic field effect transistors” Sonar, Prashant; Ha, Tae-Jun; Dodabalapur, AnanthCHEMICAL COMMUNICATIONS Volume: 49 Issue: 16 Pages: 1588-1590 DOI: 10.1039/c2cc37131f Published: 2013

16. “Nanomorphology influence on the light conversion mechanisms in highly efficient diketopyrrolopyrrole based organic solar cells” Ajuria, Jon; Chavhan, Sudam; Tena-Zaera, Ramon…. Dodabalapur, A,...ORGANIC ELECTRONICS Volume: 14 Issue: 1 Pages: 326-334 DOI: 10.1016/j.orgel.2012.11.010 Published: JAN 2013

17. “Measurement of contact voltage drop and resistance in organic solar cells” Williams, Evan L.; Ooi, Zien; Sonar, Prashant;...; Dodabalapur, A; APPLIED PHYSICS LETTERS Volume: 101 Issue: 25 Article Number: 253902; Published: DEC 17 2012

18. Use of lateral structures to monitor and evaluate degradation of key photovoltaic parameters in an organic bulk heterojunction material
By: Danielson, Eric; Ooi, Zi-En; Dodabalapur, Ananth
JOURNAL OF APPLIED PHYSICS Volume: 116 Issue: 21 Article Number: 214507 Published: DEC 7 2014

19. Complementary D Flip-Flops Based on Inkjet Printed Single-Walled Carbon Nanotubes and Zinc Tin Oxide
By: Kim, Bongjun; Geier, Michael L.; Hersam, Mark C.; et al.
IEEE ELECTRON DEVICE LETTERS Volume: 35 Issue: 12 Pages: 1245-1247 Published: DEC 2014

20. Density of trap states in a polymer field-effect transistor
By: Kim, Seohee; Ha, Tae-Jun; Sonar, Prashant; et al.
APPLIED PHYSICS LETTERS Volume: 105 Issue: 13 Article Number: 133302 Published: SEP 29 2014

21. Fluoropolymer coatings for improved carbon nanotube transistor device and circuit performance
By: Jang, Seonpil; Kim, Bongjun; Geier, Michael L.; et al.
APPLIED PHYSICS LETTERS Volume: 105 Issue: 12 Article Number: 122107 Published: SEP 22 2014

22. Evaluating Charge Carrier Mobility Balance in Organic Bulk Heterojunctions using Lateral Device Structures
By: Ooi, Zi-En; Danielson, Eric; Liang, Kelly; et al.
JOURNAL OF PHYSICAL CHEMISTRY C Volume: 118 Issue: 32 Pages: 18299-18306 Published: AUG 14 2014

23. Analysis of bulk heterojunction material parameters using lateral device structures
By: Danielson, Eric; Ooi, Zi-En; Liang, Kelly; et al.
JOURNAL OF PHOTONICS FOR ENERGY Volume: 4 Article Number: 040994 Published: JUL 25 2014

24. High-Speed, Inkjet-Printed Carbon Nanotube/Zinc Tin Oxide Hybrid Complementary Ring Oscillators
By: Kim, Bongjun; Jang, Seonpil; Geier, Michael L.; et al.
NANO LETTERS Volume: 14 Issue: 6 Pages: 3683-3687 Published: JUN 2014

25. Effects of contact resistance on the evaluation of charge carrier mobilities and transport parameters in amorphous zinc tin oxide thin-film transistors
By: Schulz, Leander; Yun, Eui-Jung; Dodabalapur, Ananth
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING Volume: 115 Issue: 4 Pages: 1103-1107 Published: JUN 2014

26. A Study of Diphenylfumaronitrile and FuranSubstituted Diketopyrrolopyrrole Alternating Copolymer and Its Thin-Film Transistors
By: Sonar, Prashant; Ha, Tae-Jun; Seong, Yuri; et al.
MACROMOLECULAR CHEMISTRY AND PHYSICS Volume: 215 Issue: 8 Pages: 725-732 Published: APR 2014

27. Improved Performance in Diketopyrrolopyrrole-Based Transistors with Bilayer Gate Dielectrics
By: Ha, Tae-Jun; Sonar, Prashant; Dodabalapur, Ananth
ACS APPLIED MATERIALS & INTERFACES Volume: 6 Issue: 5 Pages: 3170-3175 Published: MAR 12 2014

28. Inkjet printed ambipolar transistors and inverters based on carbon nanotube/zinc tin oxide heterostructures
By: Kim, Bongjun; Jang, Seonpil; Geier, Michael L.; et al.
APPLIED PHYSICS LETTERS Volume: 104 Issue: 6 Article Number: 062101 Published: FEB 10 2014

29. Synthesis of diketopyrrolopyrrole based copolymers via the direct arylation method for p-channel and ambipolar OFETs
By: Sonar, Prashant; Foong, Thelese Ru Bao; Dodabalapur, Ananth
PHYSICAL CHEMISTRY CHEMICAL PHYSICS Volume: 16 Issue: 9 Pages: 4275-4283 Published: 2014

30. Water-based nanoparticulate solar cells using a diketopyrrolopyrrole donor polymer
By: Vaughan, Ben; Williams, Evan L.; Holmes, Natalie P.; et al.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS Volume: 16 Issue: 6 Pages: 2647-2653 Published: 2014

31. Quantifying space charge accumulation in organic bulk heterojunctions by nonlinear optical microscopy
By: Morris, J. D.; Atallah, Timothy L.; Park, Heungman; et al.
ORGANIC ELECTRONICS Volume: 14 Issue: 11 Pages: 3014-3018 Published: NOV 2013

32. Solution-Processed Dual-Gate Polymer Field-Effect Transistors for Display Applications
By: Ha, Tae-Jun; Sonar, Prashant; Dodabalapur, Ananth
JOURNAL OF DISPLAY TECHNOLOGY Volume: 9 Issue: 9 Pages: 710-714 Published: SEP 2013

33. Low voltage, high performance inkjet printed carbon nanotube transistors with solution processed ZrO2 gate insulator
By: Kim, Bongjun; Jang, Seonpil; Prabhumirashi, Pradyumna L.; et al.
APPLIED PHYSICS LETTERS Volume: 103 Issue: 8 Article Number: 082119 Published: AUG 19 2013

34. Toward air-stable multilayer phosphorene thin-films and transistors
By: Kim, Joon-Seok; Liu, Yingnan; Zhu, Weinan; et al.
SCIENTIFIC REPORTS Volume: 5 Article Number: 8989 Published: MAR 11 2015

35. Use of lateral structures to monitor and evaluate degradation of key photovoltaic parameters in an organic bulk heterojunction material
By: Danielson, Eric; Ooi, Zi-En; Dodabalapur, Ananth
JOURNAL OF APPLIED PHYSICS Volume: 116 Issue: 21 Article Number: 214507 Published: DEC 7 2014

36. Complementary D Flip-Flops Based on Inkjet Printed Single-Walled Carbon Nanotubes and Zinc Tin Oxide
By: Kim, Bongjun; Geier, Michael L.; Hersam, Mark C, Dodabalapur, Ananth
IEEE ELECTRON DEVICE LETTERS Volume: 35 Issue: 12 Pages: 1245-1247 Published: DEC 2014

37. Density of trap states in a polymer field-effect transistor
By: Kim, Seohee; Ha, Tae-Jun; Sonar, Prashant; Dodabalapur, Ananth,

APPLIED PHYSICS LETTERS Volume: 105 Issue: 13 Article Number: 133302 Published: SEP 29 2014

38. Fluoropolymer coatings for improved carbon nanotube transistor device and circuit performance
By: Jang, Seonpil; Kim, Bongjun; Geier, Michael L., Hersam, Michael, Dodabalapur, Ananth APPLIED PHYSICS LETTERS Volume: 105 Issue: 12 Article Number: 122107 Published: SEP 22 2014

39. Photoconductivity and Photoconductive Gain in Organic Bulk Heterojunction Materials
By: Liang, Kelly; Danielson, Eric; Ooi, Zi-En, Dodabalapur, Ananth
IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 62 Issue: 8 Pages: 2620-2627 Published: AUG 2015

40. Voltage-Controlled Ring Oscillators Based on Inkjet Printed Carbon Nanotubes and Zinc Tin Oxide
By: Kim, Bongjun; Park, Jaeyoung; Geier, Michael L.; et al.
ACS APPLIED MATERIALS & INTERFACES Volume: 7 Issue: 22 Pages: 12009-12014 Published: JUN 10 2015

41. Efficient Polymer Solar Cells Enabled by Low Temperature Processed Ternary Metal Oxide as Electron Transport Interlayer with Large Stoichiometry Window
By: Leong, Wei Lin; Ren, Yi; Seng, Hwee Leng; et al.
ACS APPLIED MATERIALS & INTERFACES Volume: 7 Issue: 21 Pages: 11099-11106 Published: JUN 3 2015

42. Unusual charge transport and reduced bimolecular recombination in PDTSiTzTz: PC71BM bulk heterojunction blend
By: Slobodyan, O. V.; Danielson, E. L.; Moench, S. J., Holliday, Bradley, Vandenbout, David, Dodabalapur, Ananth
SEMICONDUCTOR SCIENCE AND TECHNOLOGY Volume: 30 Issue: 6 Article Number: 064006 Published: JUN 2015

Refereed Journal Publications – Complete List (Reverse Chronological Order) from August 2012

1. Sonar, P., J.M. Zhuo, L.H. Zhao, K.M. Lim, J.H. Chen, A.J. Rondinone, S.P. Singh, L.L. Chua, P.K.H. Ho, and A. Dodabalapur, *Furan substituted diketopyrrolopyrrole and thienylenevinylene based low band gap copolymer for high mobility organic thin film transistors.* Journal of Materials Chemistry, 2012. **22**(33): p. 17284-17292.
2. Sonar, P., S.P. Singh, E.L. Williams, Y.N. Li, M.S. Soh, and A. Dodabalapur, *Furan containing diketopyrrolopyrrole copolymers: synthesis, characterization, organic field effect transistor*

performance and photovoltaic properties. Journal of Materials Chemistry, 2012. **22**(10): p. 4425-4435.
3. Sonar, P., T.R.B. Foong, S.P. Singh, Y.N. Li, and A. Dodabalapur, *A furan-containing conjugated polymer for high mobility ambipolar organic thin film transistors.* Chemical Communications, 2012. **48**(67): p. 8383-8385.
4. Ooi, Z.E., T.R.B. Foong, S.P. Singh, K.L. Chan, and A. Dodabalapur, *A light emitting transistor based on a hybrid metal oxide-organic semiconductor lateral heterostructure.* Applied Physics Letters, 2012. **100**(9).
5. Ooi, Z.E., K.L. Chan, C.J. Lombardo, and A. Dodabalapur, *Analysis of photocurrents in lateral-geometry organic bulk heterojunction devices.* Applied Physics Letters, 2012. **101**(5).
6. Lombardo, C.J., M.S. Glaz, Z.E. Ooi, D.A. Vanden Bout, and A. Dodabalapur, *Scanning photocurrent microscopy of lateral organic bulk heterojunctions.* Physical Chemistry Chemical Physics, 2012. **14**(38): p. 13199-13203.
7. Lombardo, C.J., V.A. Akhavan, M.G. Panthani, B.W. Goodfellow, B.A. Korgel, and A. Dodabalapur, *Temperature-dependent charge transport in copper indium diselenide nanocrystal films.* Journal of Applied Physics, 2012. **111**(7).
8. Lombardo, C., Z.E. Ooi, E. Danielson, and A. Dodabalapur, *Electrical characteristics of lateral organic bulk heterojunction device structures.* Organic Electronics, 2012. **13**(7): p. 1185-1191.
9. Lombardo, C., E. Danielson, Z.E. Ooi, and A. Dodabalapur, *Lateral mobility measurements in organic bulk heterojunctions: comparison of field-effect and space charge mobilities.* Journal of Photonics for Energy, 2012. **2**.
10. Lee, C.G. and A. Dodabalapur, *Solution-Processed High-k Dielectric, ZrO2, and Integration in Thin-Film Transistors.* Journal of Electronic Materials, 2012. **41**(5): p. 895-898.
11. Ha, T.J., P. Sonar, S.P. Singh, and A. Dodabalapur, *Characteristics of High-Performance Ambipolar Organic Field-Effect Transistors Based on a Diketopyrrolopyrrole-Benzothiadiazole Copolymer.* Ieee Transactions on Electron Devices, 2012. **59**(5): p. 1494-1500.
12. Ha, T.J., P. Sonar, and A. Dodabalapur, *Charge carrier velocity distributions in high mobility polymer field-effect transistors.* Applied Physics Letters, 2012. **100**(15).
13. Ha, T.J., P. Sonar, and A. Dodabalapur, *Charge-Carrier Velocity Distributions in High-Mobility Polymer Dual-Gate Thin-Film Transistors.* Ieee Electron Device Letters, 2012. **33**(6): p. 899-901.
14. Ha, T.J., P. Sonar, B. Cobb, and A. Dodabalapur, *Charge transport and density of trap states in balanced high mobility ambipolar organic thin-film transistors.* Organic Electronics, 2012. **13**(1): p. 136-141.
15. Ha, T.J., D. Akinwande, and A. Dodabalapur, *Hybrid graphene/organic semiconductor field-effect transistors.* Applied Physics Letters, 2012. **101**(3).
16. Foong, T.R.B., S.P. Singh, P. Sonar, Z.E. Ooi, K.L. Chan, and A. Dodabalapur, *ZnO layers for opto-electronic applications from solution-based and low-temperature processing of an organometallic precursor.* Journal of Materials Chemistry, 2012. **22**(39): p. 20896-20901.
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133. Laquindanum, J.G., H.E. Katz, A. Dodabalapur, and A.J. Lovinger, *n-channel organic transistor materials based on naphthalene frameworks.* Journal of the American Chemical Society, 1996. **118**(45): p. 11331-11332.
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135. Jordan, R.H., A. Dodabalapur, M. Strukelj, and T.M. Miller, *White organic electroluminescence devices.* Applied Physics Letters, 1996. **68**(9): p. 1192-1194.
136. Dodabalapur, A., L.J. Rothberg, R.H. Jordan, T.M. Miller, R.E. Slusher, and J.M. Phillips, *Physics and applications of organic microcavity light emitting diodes.* Journal of Applied Physics, 1996. **80**(12): p. 6954-6964.
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154. Dodabalapur, A., T.Y. Chang, and S. Chandrasekhar, *GROWTH AND CHARACTERIZATION OF NOVEL MULTILAYER HETEROSTRUCTURES FOR THE MONOLITHIC INTEGRATION OF RESONANT-CAVITY PHOTODIODES AND HETEROJUNCTION BIPOLAR-TRANSISTORS.* Journal of Vacuum Science & Technology B, 1993. **11**(3): p. 919-921.
155. Dodabalapur, A. and T.Y. Chang, *COMPARISON OF PNP AND NPN INGAALAS/INGAAS HETEROJUNCTION BIPOLAR-TRANSISTORS.* Journal of Vacuum Science & Technology B, 1993. **11**(3): p. 969-971.
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157. Dodabalapur, A. and T.Y. Chang, *MOLECULAR-BEAM EPITAXIAL-GROWTH OF INGAALAS/INGAAS HETEROJUNCTION BIPOLAR-TRANSISTORS ON HIGHLY RESISTIVE LOW-TEMPERATURE INALAS EPILAYERS.* Applied Physics Letters, 1992. **61**(23): p. 2796-2798.
158. Subramanian, G., A. Dodabalapur, J.C. Campbell, and B.G. Streetman, *ALXGA1-XAS/GAAS PHOTOVOLTAIC CELL WITH EPITAXIAL ISOLATION LAYER.* Applied Physics Letters, 1991. **58**(22): p. 2514-2516.
159. Dodabalapur, A. and T.Y. Chang, *HIGH-GAIN INGAALAS/INGAAS HETEROJUNCTION BIPOLAR-TRANSISTORS AND PHOTOTRANSISTORS.* Ieee Electron Device Letters, 1991. **12**(12): p. 693-695.
160. Chu, T.Y., A. Dodabalapur, A. Srinivasan, D.P. Neikirk, and B.G. Streetman, *PROPERTIES AND APPLICATIONS OF ALXGA1-XAS (0 LESS-THAN-OR-EQUAL-TO X LESS-THAN-OR-EQUAL-TO 1) GROWN AT LOW-TEMPERATURES.* Journal of Crystal Growth, 1991. **111**(1-4): p. 26-29.
161. Dodabalapur, A. and B.G. Streetman, *PHOTOLUMINESCENCE CHARACTERIZATION OF THE EFFECTS OF RAPID THERMAL ANNEALING ON AIGAAS/GAAS MODULATION-DOPED QUANTUM-WELLS.* Journal of Electronic Materials, 1990. **19**(12): p. 1333-1338.
162. Dodabalapur, A., K. Sadra, and B.G. Streetman, *RELATIONSHIP BETWEEN PHOTOLUMINESCENCE SPECTRA AND LOW-FIELD ELECTRICAL-PROPERTIES OF MODULATION-DOPED ALGAAS/GAAS QUANTUM-WELLS.* Journal of Applied Physics, 1990. **68**(8): p. 4119-4126.
163. Dodabalapur, A., V.P. Kesan, D.P. Neikirk, B.G. Streetman, M.H. Herman, and I.D. Ward, *PHOTOLUMINESCENCE AND ELECTROREFLECTANCE STUDIES OF MODULATION-DOPED PSEUDOMORPHIC ALGAAS/INGAAS/GAAS QUANTUM-WELLS.* Journal of Electronic Materials, 1990. **19**(3): p. 265-270.
164. Dodabalapur, A. and B.G. Streetman, *RAPID THERMAL ANNEALING OF DUAL SI AND P IMPLANTS IN INP.* Journal of Electronic Materials, 1989. **18**(1): p. 65-68.
165. Dodabalapur, A., V.P. Kesan, D.R. Hinson, D.P. Neikirk, and B.G. Streetman, *PHOTOLUMINESCENCE STUDIES OF PSEUDOMORPHIC MODULATION-DOPED ALGAAS/INGAAS/GAAS QUANTUM WELLS.* Applied Physics Letters, 1989. **54**(17): p. 1675-1677.

166. Dodabalapur, A., V.P. Kesan, T.R. Block, D.P. Neikirk, and B.G. Streetman, *OPTICAL AND ELECTRICAL CHARACTERIZATION OF PSEUDOMORPHIC ALGAAS/INGAAS/GAAS MODULATION-DOPED STRUCTURES PROCESSED BY RAPID THERMAL ANNEALING.* Journal of Vacuum Science & Technology B, 1989. **7**(2): p. 380-383.
167. Campbell, A.C., A. Dodabalapur, G.E. Crook, and B.G. Streetman, *STUDY OF THE DX CENTER FINE-STRUCTURE IN ION-IMPLANTED AL0.27GA0.73AS PROCESSED BY RAPID THERMAL ANNEALING.* Applied Physics Letters, 1989. **54**(8): p. 727-729.
168. Kesan, V.P., A. Dodabalapur, D.P. Neikirk, and B.G. Streetman, *GROWTH AND RAPID THERMAL ANNEALING OF ALGAAS/INGAAS PSEUDOMORPHIC MODULATION-DOPED STRUCTURES.* Applied Physics Letters, 1988. **53**(8): p. 681-683.
169. Dodabalapur, A., C.W. Farley, S.D. Lester, T.S. Kim, and B.G. Streetman, *PHOSPHORUS-OVERPRESSURE RAPID THERMAL ANNEALING OF INDIUM-PHOSPHIDE.* Journal of Electronic Materials, 1987. **16**(4): p. 283-288.

Invited Talks

A. Dodabalapur and B.G. Streetman, "Implantation in InP-The role of Stoichiometric Imbalances," Electrochemical Society Meeting, Hollywood, Florida, October 1989.

A. Dodabalapur, " Resonant Cavity Organic Light Emitting Diodes", American Physical Society March Meeting, San Jose, March 1995.

A. Dodabalapur, L.J. Rothberg, and T.M. Miller, " Microcavity Effect and Color Tuning in Organic LEDs ", Materials Research Society Spring Meeting, San Francisco, April 1995.

R. Jordan, A. Dodabalapur, M. Strukelj, L.J. Rothberg, R.E. Slusher, and T.M. Miller, "White and Colored Organic Electroluminescent Devices for Backlights", Electrochemical Society Fall Meeting, Chicago, October 1995. Proceedings published by The Electrochemical Society (1996).

A. Dodabalapur, "Microcavity LEDs with Broad Free-Space Emission Active Materials", International Topical Meeting on Organic Microcavities", Sheffield, UK, Jan 11,1996.

A. Dodabalapur, "Physics and Applications of Microcavity Organic Light Emitting Diodes", Japanese Materials Research Society Meeting, May 24, 1996, Chiba, Japan. Proceedings published by Japan MRS.

A. Dodabalapur and L. Torsi, "Oligothiophene Field-Effect Transistors: Transport Phenomena and Performance Limits", Imaging Science and Technology Conference, Minneapolis, MN, May 20 (1996).

A. Dodabalapur and L.J. Rothberg, "Organic Microcavities: From Light Emitting Diodes to Photopumped lasers", Imaging Science and Technology Conference, Minneapolis, MN, May 20 (1996).

A. Dodabalapur, "The Physics and Applications of Organic Field-Effect Transistors", Gordon Research Conference on Electronic Processes in Organic Materails, New Hampshire (July, 1996).

A. Dodabalapur, "Active Devices With Organic materials" American Vacuum Society Meeting Philadelphia, PA (October 1996).

A. Dodabalapur, “Organic transistors: Physics and applications”, University of Connecticut, October, 1996.

A. Dodabalapur, “Charge Transport in Organic Materials”, Tutorial, American Chemical Society Annual Meeting, San Francisco, CA, April 1997.

A. Dodabalapur, “Organic Lasers based on Forster Transfer”, International Conference on Organic Electrolumninescence and Related Phenomena’, Kitakyushu (Japan), May 1997.

A. Dodabalapur, “Organic lasers”, Atlanta, GA, May 1997.

A. Dodabalapur, “Organic Transistors: Physics, and Technology”, European Conference on Molecular Electronics, Cambridge, UK (Sept, 1997).

A. Dodabalapur, M. Berggren, R.E. Slusher, and Z. Bao, “Materials and Resonators for Organic Lasers”, IEEE-LEOS Annual Meeting, San Francisco, Nov. 1997.

A. Dodabalapur, “Circuits with Organic Transistors”, International Solid-State Device Research Symposium (ISDRS), Dec. 1997, Charlottesville, VA.

A. Dodabalapur, M. Berggren, R.E. Slusher, and Z. Bao, “Organic photo-excited lasers with charge transporting active materials”, Materials Research Society, Spring 1998 Meeting, San Francisco, April 1998.

A. Dodabalapur, “Transport on organic and polymer thin-film transistors”, Workshop on charge transport, University of New Mexico, Albuquerque, NM (March 1998).

A. Dodabalapur, M. Berggren, M. Meier, R.E. Slusher, Z. Bao, and J. Rogers, “Organic Solid-State Lasers”, Miyazaki symposium on organic electroluminescence, Tokyo, Japan (June 21-23, 1998).

A. Dodabalapur, “Charge transport in conjugated polymer and oligomer based thin-film transistors”, Adriatico Research Conference on Organic Semiconductors, ICTP, Trieste (Italy), July 6-9 (1998).

A.Dodabalapur, “Spontaneous and stimulated emission from organic based microcavities”, Workshop on optical properties in microcavities, International Center for Theoretical Physics, Trieste (Italy), Aug. 6-12 (1998).

A. Dodabalapur *et al*., “Organic transistors”, Workshop on Molecular Electronics, Canadian National Research Council, Ottawa, CA (Dec. 1998).

1999

A.Dodabalapur, Z. Bao, R. Sarpeshkar, Y.Y. Lin, H.E. Katz, W.J. Lee, A.J. Lovinger, and V.R.Raju, “Organic and Polymer Transistors: Device Physics and Applications”, MRS Spring Meeting, San Francisco (April 1999).

A. Dodabalapur, “Organic lasers”, American Physical Society Centennial Meeting, Atlanta, GA (March 1999).

A. Dodabalapur, “Polymer transistors”, International Polymer Symposium, Yamagata, Japan, (July 1999).

A. Dodabalapur, M. Meier, A. Mekis, J.D. Joannopoulos, A. Timko, O. Nalamasu “Two-dimensional organic thin film photonic crystal lasers” Workshop on electromagnetic crystal stsructures (WECS), Laguna Beach, CA (Jan 1999).

A.Dodabalapur, “Organic smart pixels”, AVS Annual Meeting, Seattle, WA (1999).

A.Dodabalapur, “Molecular devices and circuits”, European Conference on Molecular Electronics, Linkoping, Sweden (Sept. 1999).

2000

Materials Research Society, Spring 2000 Meeting, “Organic Transistors”.

European Materials Research Society, 2000 Meeting, Strasbourg, France, “Photonic Crystal Lasers”

International Conference on Synthetic Metals, Gastein, Austria, “Organic Transistors and Circuits”

Device Research Conference, Denver, CO (Plenary), “Organic Devices”

International Conference on Solid State Materials and Devices (ICSSMD), Sendai, Japan, “Organic Transistors”.

Materials Research Society, Fall 2000 Meeting, Boston, MA, “Photonic Crystal Lasers and Couplers”.

2001

Winter Colloquium on the Physics of Quantum Electronics, Snowbird, Utah, Jan 2001.

American Chemical Society National Meeting , April 2001, San Diego, CA.

Symposium in honor of the winners of the 2000 Nobel Prize for Chemistry, University of Pennsylvania, Department of Physics, May 4-5 (2000).

European Materials Research Society, Strasbourg, June 2001.

Royal Society for Chemistry, International Conference on Materials Chemistry, Bangor, Wales (July 2001).

SPIE Meeting, San Diego, August 2001.

Intenational Electron Decices Meeting (IEDM) (Plenary), Organic Devices, December 2001.

International Symposium on Solid-State and Materials Chemistry, Indian Institute of Science, Bangalore, December 2001 (Plenary).

2002

Gordon Research Conference on Electronic Processes in Organic Materials, Newport, RI, 24 July 2002.

Symposium in honor of Prof. Alan MacDiarmid, Dallas, 6 December 2002.

2003

SPIE Meeting, Conference on Organic Transistors, San Diego, CA. 4 August 2003

International Union of Pure and Applied Chemists (IUPAC) Meeting, Organic Transistors for Chemical Sensing, Ottawa, Canada, 11 August 2003.

Los Alamos Conference on Excited States in Semiconductors, 13 Augsust 2003, Los Alamos, NM

American Chemical Society Meeting, New York City, 11 September, 2003, New York, NY

Conference on Organic Semiconductors, University of Delaware, 9 October, 2003, Delaware.

2004

Materials Research Society (MRS) Spring 2004 meeting, San Francisco, "Organic Transistors", 14 April, 2004, San Francisco, CA

American Chemical Society (ACS) Meeting, September 2004, Philadelphia, PA

IEEE LEOS Annual Meeting, "Organic 2D Photonic Crystal Lasers", San Juan, Puerto Rico (8 Nov, 2004)

2005

International Conference on Optical Probes of Conjugated Polymers and Biosystems, "Organic Transistors", Bangalore, India, 5 January 2005.

Polymer workshop, Singapore, "Organic Transistors", 11 January 2005

International Conference on Materialsand Advanced Technologies (ICMAT), Singapore, July 2005, "Oragnic Transistor Chemical Sensors".

IEEE/MRS/ACS Organic Semiconductor Workshop, Newport, RI, July 2005, "Organic Transistors".

SPIE Meeting, Conference on Organic Transistors, San Diego, CA (August 2005)

IEEE LEOS Annual Meeting, "Organic Transistors for Displays", Sydney, Australia (October 2005)

International Electronc Devices Meeting (IEDM), "Hybrid Organic/Silicon Devics", Washington, DC (December 2005)

PacificChem Conference, "Organic Transistors for Chemical and Biosensing", Honolulu, Hawaii (December 2005).

2006

AVS International Conference on Microelectronics and Interfaces, Austin, TX, March 2006

German Physical Society Meeting, Dresden, March 2006, "Recent Advances in Charge Transport in Organic Field effect Transistors",

International Conference on Organic Electroluminescence, Hong Kong, August 2006.

Plastic Electronics Conference, Frankfurt, Germany, October 2006, “Organic Transistors for Chemical Sensing”.

ICNME Workshop, Kobe, Japan, December 2006.

2007

European Winter School in Organic Electronics, Graz, Austria (Jan 2007), “Organic Thin-Film Transistors: History and Current Developments”

American Chemical Society National Meeting, Chicago, April 2007, Scaling Behavior and Transport Phenomena in Organic and Polymer Transistors

ASME Applied Mechanics and Materials Confrence, Austin, TX, June 3-7, “Organic and Polymer Transistors for Flexible Electronics”.

International Conference on Materialsand Advanced Technologies (ICMAT) Singapore, July 2007, “Scaling Behavior and Transport Phenomena in Organic and Polymer Transistors” **(KEYNOTE).**

Second International Conference on Optical, Optoelectronic and Photonic Materials and Applications, “*Organic and Polymer Thin-Film Transistors: Recent Advances*” , London, July-August 2007

SPIE Annual Meeting, San Diego, CA (August 2007)

SISPAD, Worpshop on Organic Electronics, Vienna, Austria, October 2007.

Fourth European Conference on Organic Electronics and Related Phenomena (ECOER), Lake Cuomo,Varenna, Italy, October, 2007 “Organic Electronics: Coming of Age”.

Plastic Electronics Conference, Frankfurt, October 2007

International Workshop on the Physics of Semiconductor Devices, Mumbai, India, December 2007, “Dynamic Characteristics and Applications of Organic and Polymer Transistors”

2008

TAMEST Annual Cinference, Houston, TX, Jan 10-11, “Hard and Soft Semiconductors”

GOSPEL Syposium, Printed Electronics Conference, Dresden. Germany, April 2008

International Conference on Organic Electronics (ICOE), Eindhoven, Netherlands, June 2008

SPIE Annual Meeing, Conference on Organic Transistors, San Diego, California, August 2008.

IEEE-BCTM Meeting, Monterrey, CA, October 2008-06-09

SID International Display Research Conference, Orlando, Florida, November 2008.

2009

Optical Probes Conf., Beijing June 2009-01-27

SPIE Annual Meeting, San Diego, August 2009.

CMOSET Emerging Technologies Workshop, Vancouver, BC, Sept 2009.

Electrochemical Society Meeting, Vienna, Austria, Oct 2009

IMID Conference, Seoul, S Korea, Oct 2009

IEEE Reliability Workshop, Lake Tahoe, CA, Oct 2009

International Workshop on Flexible Electronics, Muju, S. Korea, Nov. 2009

2010

Polymer Electronics Workshop, IMRE, Singapore, Jan 2010

MRS Spring Meeting, San Francisco, April 2010

SPIE Annual Meeting, San Diego, CA, August 2010

Solar Cell Workshop, Boulder, CO, August 2010

2011-12

Electrochemical Society, Montreal, Quebec, May 2011

ICMAT, Sinapore, June 2011

SPIE Annaul Meeting, San Diego, CA, August 2011.

PLENARY: Plastic Electronics Conference, Dresden, Germany, October 2011, "**Printable Complementary Circuits".**

International Workshop on Flexible and Printable Electronics (IWFPE), Muju, S.Korea, Nov 2011. "**Printable Organic and Inorganic Thin-Film Transistors and Circuits".**

PLENARY: International Workshop on the Physics of Semiconductor Devices, Indian Institute of Technology, Kanpur, Dec 2011. "**Charge Transport in Printable Organic and Inorganic Thin-Film Transistors".**

Molecular Materials Meeting (M3), Jan 2012, "**Printable, Flexible Complementary Circuits with Organic and Polymer Semiconductors"**

International Conference on Thin-Film Transistors (ITC), Portugal, Jan- Feb 2012, "**Organic and Polymer Semiconductors: Charge Transport and Applications in Flexible Electronics".**

SPIE Optics and Photonics Conference , San Diego, CA, August 2012, **"Charge transport in donor acceptor polymer field-effect transistors".**

SPIE Optics and Photonics, San Diego, CA, August 2012, "**Sensing mechanism in receptor-modified organic field-effect transistor based vapor sensors".**

2012-13

"Charge transport and device physics in high mobility donor-acceptor polymer based transistors (Invited)." Electrochemical Society Meeting, Toronto, Canada, May 2013.

"Charge transport in polymer transistors (Invited)." SPIE Meeting, San Diego, August 2013.

"Charge transport and recombination in organic bulk-heterojunction materials in the in-plane direction (Invited)." SPIE Meeting, San Diego, August 2013.

"Chemical sensors based on organic semiconductors (Invited)." SPIE Meeting, San Diego, August 2013.

Invited Tutorials

1997 American Chemical Society Meeting, San Francisco

1998 OSA Annual Meeting (ILS Critical Review), Baltimore, MD

2001 APS Meeting, Seattle

2002, CLEO, Long Beach, CA

2009, IMID Seoul, S. Korea

Conference Publications and/or Presentations

A) 1993-95

A. Dodabalapur, L.J. Rothberg, H.H. Kim, J.M. Saylor, F. Papadim, M. Galvin, and T.M. Miller, "Conductivity Modulation in poly(phenylene vinylene) at High Electric Fields", Materials Research Society Fall Meeting, Boston, Nov/Dec 1993.

A. Dodabalapur, L.J. Rothberg, and T.M. Miller, "Microcavity Effects in Organic Semiconductors," American Physical Society Meeting, Pittsburgh, March 1994.

A. Dodabalapur, L.J. Rothberg, and T.M. Miller, "Resonant-Cavity Light Emitting Diodes with Organic Semiconductors," 52nd Device Research Conference (DRC), Boulder, Colorado, June 1994.

T.M. Miller, A. Dodabalapur, L.J. Rothberg, F. Papadim, M. Galvin, and E. Kwock, "Novel Organic Electroluminescent Devices and Materials," Florida Advanced Materials Conference.

A. Dodabalapur, L.J. Rothberg, and T.M. Miller, "Microcavity Organic Light Emitting Diodes for Emissive Displays," International Display Research Conference (IDRC), Monterey, October 1994. Proceedings published (1994).

L.J. Rothberg, A. Dodabalapur, and T.M. Miller, "Resonant Cavity Organic Electroluminescent Devices," International Electron Devices Meeting (IEDM), San Francisco, December 1994. Proceedings published (1994).

A. Dodabalapur, H.E. Katz, and L. Torsi, "Physics and Applications of Low-Dimensional Organic Thin Film Transistors," International Electron Devices Meeting (IEDM), San Francisco, December 1994. Proceedings published (1994).

L.J. Rothberg, A. Dodabalapur, and T.M. Miller, "Color Variation in Organic Electroluminescent Semiconductors with Patterned Microcavities, Optical Society of America Meeting, Dallas, October 1994.

H.E. Katz, A. Dodabalapur, L. Torsi, A.J. Lovinger, and R. Ruel, "Synthesis and Superior Transistor Performance of Dopant Free Thiophene Hexamers", American Chemical Society, April1995, Anaheim, CA. Proceedings published by ACS (1995).

L. Torsi, A. Dodabalapur, and H.E. Katz, "Transport in Organic Thin Film Transistors", American Chemical Society, April 1995, Anaheim, CA. Proceedings published by ACS (1995).

A. Dodabalapur, L. Torsi, H.E. Katz, and A.J. Lovinger, " Channel Conductance and High-Field Transport in α-Hexathienylene Transistors", American Physical Society, March 1995.

L. Torsi, A. Dodabalapur, H.E. Katz, A.J. Lovinger, and R. Ruel, "Organic Transistors with High on/off Ratio", Materials Research Soc. Spring 1995 Meeting, San Francicso, April 1995. Proceedings published by MRS vol. 377, 695(1995).

A. Dodabalapur, H.E. Katz, L. Torsi, and R. Haddon, " Heterojunction Organic Thin-Film Transistors," Device Research Conference (DRC), Charlottesville, VA, June 1995.

M. Gonokami, A. Dodabalapur, R. Jordan , H.E. Katz, M. Schilling, R.E. Slusher, and S. Ozawa, "Polymer Microdisc and Microcyllinder Lasers", Quantum Electronics and Laser Sciences Conference (QELS), Baltimore, MD, May 1995.

L.J. Rothberg, A. Dodabalapur, and T.M. Miller, " Design and Manufacturability of Microcavity Electroluminescent Devices for Display Applications", Society of Information Display (SID) Conference, Orlando, FL, May 1995. Proceedings published by SID (1995).

A. Dodabalapur, L.J. Rothberg, M. Strukelj, R. Jordan, and T.M. Miller, "White and Unsaturated Color Organic LEDs", Materials Research Society Fall Meeting, Boston, Nov. 1995. Proceedings to be published by MRS (1996).

L. Torsi, A. Dodabalapur, L.J. Rothberg, and A. Fung, "Low Temperature Transport in α-6THexathienylene Thin-Film Transistors", Materials Research Society Fall Meeting, Boston, Nov. 1995. Proceedings to be published by MRS (1996).

B) 1991-92

A. Dodabalapur, T.Y. Chang, B. Tell, and K.Brown-Goebeler, "MBE Growth of InGaAs/InAlAs Heterojunction Bipolar Transistors on Si-Implanted InP Layers and Highly Resistive InAlAs Epilayers", Electronic Materials Conference (EMC), Boulder, CO, June 1991.

A. Dodabalapur and T.Y. Chang, “High Gain Resonant InGaAlAs/InGaAs Phototransistors (10) Grown by MBE”, Device Research Conference (DRC), Boulder, CO, June 1991. Proceedings publishedby IEEE, IEEE91Th0352, 1991.

A. Dodabalapur and T.Y. Chang, "Characteristics of pnp InGaAlAs/InGaAs Heterojunction Bipolar Transistors Grown by Molecular Beam Epitaxy, Fourth International Conference on InP and Related Compounds, Newport, Rhode Island, April 1992. Proceedings published in 1992.

A. Dodabalapur, T.Y. Chang, and S. Chandrasekhar, "Monolithic Integration of a Resonant Fabry-Perot Cavity p-i-n Photodiode with HBT's for 1.52 μm Optoelectronic Receivers," IEEE/OSA Topical Meeting on Integrated Photonics Research, New Orleans, March 1992. Proceedings published in 1992.

A. Dodabalapur and T.Y. Chang, "Comparison of pnp and npn InGaAlAs/InGaAs Heterojunction Bipolar transistors Grown by MBE," North American Conference on Molecular Beam Epitaxy, Montreal, Canada, October 1992.

A. Dodabalapur, T.Y. Chang, and S. Chandrasekhar, "Growth and Characterization of Novel Multilayer Heterostructures for the Monolithic Integration of Resonant Cavity Photodiodes and HBTs,"North American Conference on Molecular Beam Epitaxy, Montreal, Canada, October 1992.

C) 1988-90

A. Dodabalapur, A.C. Campbell, and B.G. Streetman, “Rapid Thermal Annealing of Dual Si and P Implants in InP”, Electronic Materials Conference (EMC), Boulder, CO, June 1988.

V.P. Kesan, A. Dodabalapur, D.P. Neikirk, and B.G. Streetman, “Influence of MBE Growth and Rapid Thermal Annealing Conditions on the Electrical Properties of Normal and Inverted AlGaAs/InGaAs Pseudomorphic HEMT Structures”, Device Research Conference (DRC), Boulder, CO, June 1988.

A.C. Campbell, A. Dodabalapur, G.E. Crook, and B.G. Streetman, “Formation of DX Related Complexes in Ion Implanted MBE Grown AlGaAs Processed by Rapid Thermal Annealing”, Electronic Materials Conference (EMC), Boulder, CO, June 1988.

A. Dodabalapur, V.P. Kesan, T.R. Block, D.P. Neikirk, and B.G. Streetman, “Optical and Electrical Characterization of Pseudomorphic AlGaAs/InGaAs/GaAs Modulation-Doped Structures Processed by RTA”, Molecular Beam Epitaxy Workshop, Purdue University, Indiana, September 1988.

A. Dodabalapur, V.P. Kesan, D.P. Neikirk, B.G. Streetman, M.H. Herman, and I.D. Ward, “Photoluminescence and Electroreflectance Characterization of Modulation-Doped Quantum Wells”, Electronic Materials Conference (EMC), Boston, MA, June 1989.

M.H. Herman, A. Dodabalapur, I.D. Ward, and B.G. Streetman, “Characterization of Undoped and Modulation-Doped InGaAs/GaAs Quantum Wells by Electron Beam Electroreflectance (EBER) and Photoluminescence (PL)”, Materials Research Society (MRS) Fall Meeting, Boston, December 1989. Paper published in Mat. Res. Soc. Symp. Proc. **vol. 160**, p 655, 1990.

T.Y. Chu, A. Dodabalapur, D.P Neikirk, and B.G. Streetman, "Properties and Applications of AlGaAs Layers Grown at Low Temperatures", Sixth International Conference o Molecular Beam Epitaxy, San Diego, CA, August 1990.
A. Dodabalapur and B.G. Streetman, "Correlation Between the Electrical and Optical Properties of AlGaAs/GaAs Modulation-doped Quantum Wells", Second International Conference on Electronic Materials (ICEM), Newark, NJ, September 1990. Proceedings published by MRS in 1991.

Patents (Issued or pending office action) (US Patents Only)

Issued patents

Issued US Patent List (Date: 13 Feb., 2007)
List of patents in which Ananth Dodabalapur is listed as an inventor.

1. US5674636 Article comprising a microcavity light source
2. US6975664 Article comprising a two-dimensional photonic crystal coupler and method of making the same
3. US6870180 Organic polarizable gate transistor apparatus and method
4. US6661299 Odor sensor with organic transistor circuitry
5. US6575013 Electronic odor sensor
6. US6484559 Odor sensing with organic transistors
7. US6410416 Article comprising a high-resolution pattern on a non-planar surface and method of making the same
8. US6384804 Display comprising organic smart pixels
9. US6363096 Article comprising a plastic laser
10. US6278127 Article comprising an organic thin film transistor adapted for biasing to form a N-type or a P-type transistor
11. US6232157 Thin film transistors
12. US6215130 Thin film transistors
13. US6197663 Process for fabricating integrated circuit devices having thin film transistors
14. US6150668 Thin-film transistor monolithically integrated with an organic light-emitting diode
15. US6136702 Thin film transistors
16. US6107117 Method of making an organic thin film transistor
17. US6005707 Optical devices comprising polymer-dispersed crystalline materials
18. US5904994 Blue-emitting materials and electroluminescent devices containing these materials
19. US5881089 Article comprising an organic laser
20. US5814416 Wavelength compensation for resonant cavity electroluminescent devices
21. US5625199 Article comprising complementary circuit with inorganic n-channel and organic p-channel thin film transistors
22. US5596208 Article comprising an organic thin film transistor
23. US5574291 Article comprising a thin film transistor with low conductivity organic layer
24. US5478658 Article comprising a microcavity light source
25. US5405710 Article comprising microcavity light sources
26. US7397072 Structure for and method of using a four terminal hybrid silicon/organic field effect sensor device
27. US7538538 Method of using a four terminal htbrid silicon/organic field effect sensor device

Invited University Talks/Seminars (1994-) and hosting departments

University of Wisconsin, Madison (Graduate Seminar) "Organic Light Emitting Diodes", Oct 31, 1994. **(EE)**

University of Washington, Seattle (Graduate Seminar) "Organic Optoelectronic Devices", January 23,1995. **(EE)**

University of Texas, Austin (Microelectronics Distinguished Lecture Series) "Color and Cavities: The Science and Technology of Organic LEDs", March 20, 1995. **(EE)**

Princeton University, "Active Devices with Organic and Polymeric Materials", Oct 30, 1995. **(EE)**

Cambridge University (UK), "Physics of Organic Transistors", Jan 11, 1996. **(Physics)**

Indian Institute of Science (India), "Physics of Organic Transistors", April 26, 1996**. (Physics)**

University of Minnesota, "Active Devices with Organic Materials", May 21, 1996. **(EE)**

Osaka University (Japan), "Organic Lasers based on Forster Transfer", May 20, 1997.**(EE)**

University of New Mexico, Albuquerque, 7 November 1997, "Organic Lasers and Transistors: Materials and Device Physics". **(Physics)**

University of California at Los Angales, 14 November 1997, "Materials Issues in Organic Lasers and Transistors". **(Materials)**

University of Rochester, 8 December, 1997, "Materials Issues in Organic Lasers and Transistors".**(Chemistry)**

Massachusetts Institute of Technology, 22 April 1998, "Organic Lasers: New materials and Resonators".**(EE)**

California Institute of Technology, "Active devices with organic materials", 2 June 1998**. (Appl. Physics)**

Princeton University, "Organic lasers and the physics of photonic crystals", November 1998. **(EE)**

University of Connecticut, "Organic and polymer transistors", Feb 1, 1999. **(Physics)**

University of Bari, Italy, "Organic lasers and the physics of photonic crystals", 18 Jan., 1999. **(Physics)**

University of Bari, Italy, "Organic and polymer transistors", 19 Jan., 1999. **(Chemistry)**

Stanford University, "Organic Transistors", Oct 1999. **(Computer Sci)**

Univ. of Tokyo, Aug 2000.**(EE)**

Indian Institute of Science, Bangalore, India, August 2000. **(Physics)**

Jawaharlal Institute of Advanced Studies, Bangalore, India, August 2000.

MIT, November 14, 2000 **(EE)**

University of California at Santa Barbara,5 Dec., 2000 **(Physics)**.

University of California, Santa Barbara, 6 Dec., 2000 **(Materials)**

University of Texas,Austin, 17 Jan, 2001 **(EE)**.

University of Michigan, Ann Arbor, 7 Feb, 2001 **(EE)**.

University of Pennsylvania, Philadelphia, March 2001 (Materials Science).

Yale University, New Haven, Connecticut, Feb 2001 (Applied Physics)

Columbia University, New York, March 2001 (Electrical Engineering).

Ohio State University, 4 June 2002 (ECE)

Linkoping University, Sweden, 16 May 2003 (Applied Physics)

Nanyang Technological University, Singapore (2 Oct, 2003)

University of Tokyo, Japan, (Applied Physics, 21 June, 2005)

City University of Hong Kong, Hong Kong, "Organic Transistors", 22 August 2005

Northwestern University, October 2007, "Organic Transistors".

Victoria University, Wellington, New Zealand, 3 December, 2007. "Organic Transistors".

Princeton University, 3 March 2008, "Organic Transistors".

Humbolt University, Berlin, Germany, "Charge Transport and Scaling in Organic Transistors, April 2008.

Abo Akademi University, Turku, Finland, "Organic Transistors", September 2008.

Seoul National University, Seoul, Korea, 19 Jan 2009, "Organic Transistors: Coming of Age".

Samsung Advaned Institute of Technology, Seoul, Korea, 20 Jan 2009, "Organic Transistors".

University of Texas at Arlington, EE Department Seminar, Oct 2010

University of Texas at Dallas, Physics Seminar, October 2010

National Chemical Laboratory, Pune, India, Invited Seminar, 24 Dec., 2010.

Carnegie Mellon University, Pittsburg, PA, Chemistry Department Seminar. 13 Jan., 2011

Seoul National University, 2011

Kyunghee University, Korea, Aug 2011

KETI, S. Korea, November, 2011

Research and Invention Impact

Resarch Impact: Journal Paper Citations

Jounal Papers Published: **> 200**

Total Citaions Received (Source: ISI Web of Science): **16,000; Google Scholar: > 22,000**

Summary: Journal Paper H-Index: 65 (ISI)

Google Scolar H Index: 77

Patent Citations (US Patents only)

Source: USPTO Website Search Engine
http://patft.uspto.gov/netahtml/PTO/search-bool.html

Total US patents: 27
Total Citations Recd by All Patents: **1300 (Patent Buddy)**

Key Patents and Citations (Top 6):

1. US6150668 Thin-film transistor monolithically integrated with an organic light-emitting diode (116 Citations)
2. US6107117 Method of making an organic thin film transistor (79 Citations)
3. US5625199 Article comprising complementary circuit with inorganic n-channel and organic p-channel thin film transistors (77 Citations)
4. US5574291 Article comprising a thin film transistor with low conductivity organic layer (70 Citations)
5. US5405710 Article comprising microcavity light sources (66 Citations)
6. US6384804 Display comprising organic smart pixels (56 Citations)

Summary: US Patent H-Index (US Patents cited by other US patents): 19

Research Supervision

Ph.D. Dissertations Supervised

1) Liang Wang	2005	Electrical Engineering
2) Taeho Jung	2006	Electrical Engineering
3) DEbarshi Basu	2007	Electrical Engineering
4) Daniel Fine	2007	Electrical Engineering
5) Byungook Yoo	2007	Electrical Engineering
6) Suvid Nadkarni	2007	Electrical Engineering
7) Yeontaek Jeong	2008	Materials Science
8) Lawrence Dunn	2008	Physics
9) Brian H Cobb	2010	Electrical Engineering
10) Christopher Lombardo	2011	EE
11) Chenguan Lee	2011	EE
12) Davianne Duarte	2011	EE
13) Taejun ha	2012	EE
14) Eric Danielson	2014	Materials Science

7 More in progress.

Courses Taught at University of Texas (till 2013)

EE 396 K Organic and Polymer Semiconductor Devices (Grad)		2001-2011	9 Times
EE 438 Electronic Circuits (Ungergrad)		2002-2011	8 times
EE396KCharge Transport in Organic Semiconductors	(G)	2002-2011	4 Times
EE 339 Solid State Electronics(UG)		2008-2008	3 Times
EE 379KSolar Energy Conversion Devices (UG)		2008-2011	4 times
EE 396 Photovoltaic Devices (G)		2009	twice

Total Organized Courses Taught: **30**