Zakya H. Kafafi
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High School Degree, Lyçée Français du Caire, Cairo, Egypt
B.Sc. (*cum laude*) in Chemistry, University of Houston, TX
M.A., Ph.D. in Chemistry, Rice University, Houston, TX

Member, National Academy of Engineering
Fellow of AAAS, MRS, OSA, SPIE
Founding Editor-in-Chief, *Journal of Photonics for Energy*
Inaugural Deputy Editor, *Science Advances*

Professional Experience:

2008-Present	Adjunct Professor/Distinguished Research Fellow, Center for Photonics and Nanoelectronics, Department of Electrical and Computer Engineering, Lehigh University, Bethlehem, PA
2019	The **Van der Waals Professorial Chair,** Visiting Professor, the University of Amsterdam, Amsterdam, the Netherlands
2011-2012	Visiting Scholar/Professor, Department of Chemistry, Department of Material Sciences & Engineering, Northwestern University, Evanston, IL Visiting Scholar/Professor, Departments of Electrical & Systems Engineering, Material Sciences & Engineering, and Chemistry, University of Pennsylvania, Philadelphia, PA
2007-2012	Director, Division of Materials Research Program Director, Chemistry Division National Science Foundation, Arlington, VA
1994-2007	Adjunct Professor, Department of Chemistry, The Catholic University of America, Washington, DC
1986-2007	Head, Organic Optoelectronics Section Senior Research Chemist and Group Leader US Naval Research Laboratory, Washington, DC
1985-1989	President, The Spectroscopic Associates, Inc., Houston, TX
1981-1986	Visiting Scholar/Professor, Department of Chemistry, Rice University, Houston, TX
1979-1983	Assistant Professor, Department of Chemistry, Al-Azhar University, Cairo, Egypt

Professional Associations:

Member of the American Association for the Advancement of Science (AAAS), the American Chemical Society (ACS), the American Physical Society (APS), the Materials Research Society (MRS), the Optical Society of America (OSA), the International Society for Optics and Photonics (SPIE), and Sigma Xi.

Professional Training:

"Leadership for a Democratic Society," Federal Executive Institute, Charlottesville, VA (2010).

Awards and Honors:

Elected Member, National Academy of Engineering, "for contributions to materials technologies for organic optoelectronics," **2021**.
Founding Member of the Academy of Arab Scientists, Kuwait, Kuwait, **2020.**
Van der Waals Visiting Professor Chair, University of Amsterdam, Amsterdam, The Netherlands, **2019**.
Kuwait Prize in the Category of Applied Sciences (Clean & Sustainable Energy Technologies), Kuwait Foundation for the Advancement of Sciences (KFAS), "for her research on the uses of organic solar cells to generate clean and sustainable energy, and to improve their performance and efficiency," **2018**.
Hillebrand Prize, the ACS Chemical Society of Washington's highest honor, "for her pioneering

contributions in organic optics and electronics technologies through innovative physical chemistry and materials chemistry research," **2017**.
MRS Fellow: "for outstanding research in organic electronic and opto-electronic materials, as well as dedicated service as Director of the NSF Division of Materials Research and through numerous professional society activities," **2015**.
AAAS Fellow: "for her achievements in materials science and chemistry," **2008**.
OSA Fellow: "for serving with distinction in the advancement of optics and, for her pioneering work in organic optoelectronic materials and devices," **2007**.
NSF/ADVANCE Distinguished Lectureship Award, the Academic Careers in Engineering and Science (ACES) Program at Case Western Reserve University, **2007**.
SPIE Fellow: "for her outstanding contributions to the field of organic photonics and electronics covering many aspects of chemistry, physics and materials science," **2005**.
NRL Edison Patent Award: "for developing a simple and cost-effective method of patterning electrically conductive polymers,**" 2003**.
NRL Commanding Officer's Award: "for achievements in the field of equal employment opportunity and the creation of a mentor program for scientists and engineers," **1995**.
IR 100 Award: (Research and Development Magazine) "for the invention of a cryogenic link that can move vertically and rotate under high vacuum at very low temperatures (> 8K)," **1986**.

Professional Societies (Selected Recent Activities):

I. Award Committees, Editorial Appointments, and Meeting Organizations:

International Summit on Organic and Hybrid Photovoltaics Stability (ISOS-13) and Third Conference on "Women in Renewable Energy" (2021). ***Chair***
B-MRS Symposium on "Solar energy conversion" (2021). ***Chair***
Latsis Symposium on Earth-abundant Materials (alternative to Si) for Future Photovoltaics (2021). ***Scientific Committee Member***
Second Severo Ochoa Workshop on Energy Storage and Harvesting: Second Conference on "Women in Renewable Energy" (2020). ***Chair***
SPIE First Conference on "Women in Renewable Energy" (2019). ***Chair***
BBVA Foundation Frontiers of Knowledge Awards Committee in Basic Sciences (2018). ***Jury Member***
AAAS Symposium on "Biomedical Sensors in Service to Society" (2018). ***Chair***
BBVA Foundation Frontiers of Knowledge Awards Committee in Basic Sciences (2017). ***Jury Member***
SPIE Conferences on "Organic, Hybrid, and Perovskites Photovoltaics" (2017-Present). ***Chair***
MRS Awards Nominations Subcommittee (2016-Present). ***Chair***
MRS Advances Volume 1 (2015). ***Principal Editor***
MRS Fall Symposium on "Engaged Learning of Materials Science and Engineering in the 21st Century" (2015). ***Chair***
AAAS Science Advances (2014-2019). ***Inaugural & Founding Deputy Editor***
The MRS International Member Engagement Task Force (2013-2015). ***Member***
SPIE Symposium on "Organic Photonics and Electronics" (2012-Present). ***Chair***
SPIE Journal on Photonics for Energy (2011-2020). ***Inaugural & Founding Editor-in-Chief***
SPIE Board of Editors (2011-2020). ***Member***
IEEE Journal of Photonics (2009-2016). ***Advisory Board Member***
Conferences on "Spin in Organic Semiconductors" (SPINOS 2009-2016). ***International Advisory Board Member***
CLEO Program committee on LEDs & OLEDs for Displays & Solid-State Lighting (2008). ***Chair***
International Conference on Organic Nonlinear Optics (2008). Advisory Board ***Member***
SPIE Symposium on "Photonic Devices and Applications" (2007-2011). ***Chair***
ACS Symposium on "Organic Thin Films for Photonics Applications" (2007). ***Technical committee***

Member
OSA/OMD Symposium on "Organic Materials and Devices for Displays and Energy Conversion" (2007).
Technical committee Member
ACS Symposium on "Science & Technology of Next Generation Photovoltaics" (2006). ***Chair***
OSA Thin Films Technical Group (2005-2007). ***Chair***
CLEO Program committee on LEDs, OLEDs & Solid-State Lighting (2005-2007). ***Member***
SPIE Symposia Committee/Program on "Organic Photonics and Electronics" (2004-2006). ***Member***/***Chair***
SPIE Conferences on "Organic Photovoltaics" (2000-2016). ***Chair***
SPIE Conferences on "Organic Light-Emitting Materials & Devices" (1997-2007). ***Chair***

II. Invited, Keynote, and Plenary Talks:

Virtual nanoGe Spring Meeting, Symposium on Power House for Mentorship, "Mentoring the Next Generation of Scientists and Engineers in Renewable Energy," (3/9-11/2021). ***Keynote***
9th MC Meeting, 8th WG Meeting and 11 th Conference: SEPV2018 Stability of Emerging Photovoltaics: from Fundamentals to Applications, "Recent Progress on Organic, Hybrid Organic-Inorganic and Perovskite-based Photovoltaics (OHPVs) in the USA," Barcelona, Spain (2/20-23/2018). ***Keynote***
254th ACS National Fall Meeting, "Plasmonic Nanostructured Biosensors and Organic Photovoltaics," Washington, DC (8/20-24/2017). ***Keynote***
XIV Brazilian MRS Meeting (SBPMat), "Plasmonic Nanostructured Organic Photovoltaics: Breaking the Efficiency Barrier," Rio de Janeiro, Brazil (9/27-10/1/2015).
SPIE Optics + Photonics Meeting, Conference on Photonics Innovations and Solutions for Complex Environments and Problems, "The Future is for Plastic Optoelectronics," San Diego, CA (8/17-21/2014).
Materials Research Society Fall Meeting, Symposium H: Small-Molecule Organic Solar Cells, "Plasmonic-enhanced Molecular Organic Solar Cells" Boston, Massachusetts (11/26-30/2012).
Workshop on Metamaterials and Plasmonics: Novel Materials, Designs, and Applications, "Organic Photovoltaics with Enhanced Performance Based on Novel Plasmonic Nanostructures," Buffalo, New York (5/16-17/2011).
International Workshop on Industrial Renewable Energy Applications, "Future of Solar Energy in the Middle East and North Africa," Abu Dhabi, United Arab Emirates (11/10/2010).
International Workshop on Electronic Structure and Processes at Molecularly-Based Interfaces (ESPMI-V) *in Memory of Professor Kazuhiko Seki*, "Molecularly Engineered Surfaces and Interfaces for Organic Optoelectronics," Chiba University, Japan (1/26-28/2010).
American Chemical Society Spring Meeting, ACS Award in Applied Polymer Science: Symposium *in Honor of Andrew J. Lovinger*, "When Optoelectronics Go Organic!" San Francisco, California (3/21-25/2010).
Second World Materials Summit Meeting, "Present and Future Directions in Global Materials Energy Research," Suzhou, China (10/12-15/2009).
Organic Microeletronics and Optoelectronics Workshop IV, "Pentacene Derivatives as Red Emitters in OLEDs and Hole Transporters in OPVs," San Francisco, CA (7/7-10/2008).
10th International Conference on Organic Nonlinear Optics and, International Conference on Organic Photonics and Electronics, "Silicon-based Organics for Optoelectronic Applications," Santa Fe, NM (5/18-23/2008).
F*i*O'07/Topical Meeting on Organic Materials and Devices for Displays and Energy Conversion, "Molecularly Engineered Interfaces for Organic Optoelectronics," San Jose, CA (9/17-19/2007).
40th Silicon Symposium, "Electro-active Materials and Devices based on Siloles and Spirosilabifluorenes," Victoria, British Columbia, Canada (5/31-6/2/2007). ***Plenary***
NSF/ADVANCE Distinguished Lectureship Award by the Academic Careers in Engineering and Science (ACES) Program at Case Western Reserve University – Lectures series (4/23-26/2007).
MRS Spring National Meeting, "Fullerene-Based Organic Photovoltaics Using Various Hole Transporters," San Francisco, CA (4/9-13/2007).

MRS Fall National Meeting, "Excitation Energy Transfer in Guest-Host Molecular Systems," Boston, MA (11/27-12/1/2006).
MRS Spring National Meeting, "Conversion of Electrical Energy into Light and Solar Energy into Electricity Using Organic Materials and Nanostructures," San Francisco, CA (4/17-21/2006).
Photonics West, "Organic Light-Emitting Diodes for Displays and Solid-State Lighting," San Jose, CA (1/22-26/2006). ***Plenary***
US-Egypt Workshop on Nanostructured Materials & Nanotechnology, "Conversion of Electrons into Photons and Photons into Electrons through Nanoscience," Alexandria, Egypt (11/12-15/2005).
International Conference on Organic Photonics and Electronics, "Flexible Organic Light-Emitting Diodes," Matsushima, Japan (3/7-11/2005).
Fifth International Conference on Electroluminescence of Molecular Materials & Related Phenomena, "Flexible OLEDs Using Conducting Polymer Electrodes: the Display Technology of the Future," Phoenix, AZ (1/16-21/2005).
Twelfth International Workshop on Inorganic and Organic Electroluminescence, "Flexible OLEDs: the Display Technology of the Future," Toronto, Canada (9/20-23/2004).
Sixth International Symposium on Functional π-Electron Systems, "Electroluminescent and Carrier Transport Properties of σ- and π-Electron Molecular Systems," Cornell University, Ithaca, NY (6/14-18/2004). ***Keynote***
MRS Spring National Meeting, "Polymer Electrodes for Organic Opto-electronic Devices," San Francisco, CA (4/12-16/2004).
Fourth International Conference on Electroluminescence of Molecular Materials, "Light-Emitting Diodes Based on Silole and Pentacene Derivatives," Jeju Island, Korea (8/27-30/2003).

Federal Funding Agencies (Selected Activities):

I. Research Initiatives and Program Reviews:

DOE Solar Energy Technologies Office (SETO) Review on Photovoltaics Proposals, Washington, DC (4/6-8/2020). ***Virtual Panelist***
NSF ECCS Electronic, Photonic and Magnetic Devices CAREER Proposals, Alexandria, VA (10/19-20/2017). ***Panelist***
NSF ECCS Electronic, Photonic and Magnetic Devices Perovskites Proposals, Arlington, VA (3/3-4/2016). ***Panelist***
DOE Mid-Term Review "Energy Frontier Research Centers," Aurora, CO (3/5-7/2012). ***Panelist***
DOE Review "Basic Research Solar Energy Utilization," Bethesda, MD (2/5-7/2007). ***Panelist***
NSF funded MRSEC on "Polymer Interfaces and Macromolecular Assemblies" site visit at Stanford University, Palo Alto, CA (10/5-6/2006). ***Panelist***
DOE Workshop on "Basic Research Needs for Solid-State Lighting," Washington, DC (5/22-24/2006). ***Panelist & Speaker***
DOE Workshop on "Basic Research Needs for Solar Energy Utilization," Washington, DC (4/18-21/2005). ***Panelist***
AirForce/Army/NSF Workshop on "Mutifunctional Structures: Energy Harvesting & Storage," Stanford University, Palo Alto, CA (12/15-17/2004). ***Panelist & Speaker***
DARPA Workshop on "Flexible Nanocomposite Organic Photovoltaics," Arlington, VA (1/21-22/2003). ***Panelist & Speaker***
NSF Workshop on "Technological Challenges for Flexible, Light-Weight, Low-Cost and Scalable Organic Electronics and Photonics," Arlington, VA (1/16-17/2003). ***Panelist***

II. Funded Research Programs while at NRL:

FY07-11 ONR: Accelerated Research Initiative (ARI) on "Flexible Organic Solar Cells": **$ 3.4 M**
FY04-08 ONR: ARI on "Bio/Organic Conductors, Semiconductors and Interfaces": **$ 1.0 M**

FY04-06 NRL: Nanoscience Institute (NSI) Program on "Integration of Nanostructured Light-Emitting Devices": **$ 3.3 M**
FY03-05 NRL: NSI Program on "Nano-Engineered Photovoltaic Devices": **$ 2.1 M**
FY99-01 DARPA: "Novel Organic Light-Emitting Diodes (NOLEDs)": **$ 1.2 M**
FY98-03 ONR: ARI on "Organic Light-Emitting Materials & Devices": **$ 4.3 M**
FY96-98 DARPA: "Molecular Organic Light-Emitting Diodes (MOLEDs)": **$ 1.1 M**

Patents

9. W. H. Kim, Gary Kushto and Z. H. Kafafi, "Electrically Conductive Polymers," **Patent No. 10,170,729** (1/1/2019).

8. W. H. Kim, Gary Kushto and Z. H. Kafafi, "Electrically Conductive Polymers," **PCT International Application No.** 14/270,654 (1/22/2015).

7. Z. H. Kafafi, L.C. Picciolo, H. Murata, "A Universal Host for RG or RGB Emission in Organic Light Emitting Devices," **Patent No. 7,221,088** (5/22/2007).

6. H. Kim, J. S. Horwitz, A. Piqué, G. P. Kushto, and Z. H. Kafafi, "Pulsed Laser Deposition of Transparent Conducting Thin Films on Flexible Substrates," **Patent No. 6,818,924** (11/16/2004).

5. W. H. Kim and Z. H. Kafafi, "Method of Patterning Electrically Conductive Polymers," **Patent No. 6,649,327** (11/18/2003).

4. H. Kim, J. S. Horwitz, A. Piqué, G. P. Kushto, and Z. H. Kafafi, "Pulsed Laser Deposition of Transparent Conducting Thin Films on Flexible Substrates," **Patent No. 6,645,843** (11/11/2003).

3. L. C. Picciolo, H. Murata, Z. H. Kafafi, "Pentacene Derivatives as Red Emitters in Organic Light Emitting Devices," **Statutory invention # H2084** (10/7/2003).

2. A. W. Olsen and Z. H. Kafafi, "Nonlinear Optical Composites of Metal Cluster-Laden Polymers," **Patent No. 5,405,906** (4/11/1995).

1. A. W. Olsen and Z. H. Kafafi, "Nonlinear Optical Composites of Metal Cluster-Laden Polymers," **Patent No. 5,234,758** (8/10/1993).

Publications:

251. Z. H. Kafafi, J. Zhang, "A Gift to the Queen of Carbon: A special collection in honor and memory of Mildred Dresselhaus." Sci. Adv. **Vol. 7, No. 37**, eabf8642 (2021).

250. Zakya H. Kafafi, Paul A. Lane, Kwanghee Lee, Harald W. Ade, Yueh-Lin (Lynn) Loo, "Organic, Hybrid, and Perovskite Photovoltaics XXI," Editors, Proc. SPIE **11474** (2020).

249. Zakya H. Kafafi and Mónica Lira-Cantú "Special Section Guest Editorial: Get WIRED!," Journal of Photonics for Energy **Vol. 10, No. 4**, 042001 (29 December 2020). https://doi.org/10.1117/1.JPE.10.042001

248. Zakya H. Kafafi, Paul A. Lane, and Kwanghee Lee, "Organic, Hybrid, and Perovskite Photovoltaics XX," Editors, Proc. SPIE **11094** (2019).

247. Zakya H. Kafafi, Monica Lira-Cantu, "Women in Renewable Energy," Editors, Proc. SPIE **11095** (2019).

246. Zakya H. Kafafi, Paul A. Lane, and Kwanghee Lee, "Organic, Hybrid, and Perovskite Photovoltaics XIX," Editors, Proc. SPIE **10737** (2018).

245. Anna C. Balazs, Zakya H. Kafafi, Guest Editors, Special Series on "Materials by Design," AAAS Science Advances (2016-2018).

244. Zakya H. Kafafi, Paul A. Lane, and Kwanghee Lee, "Organic, Hybrid, and Perovskite Photovoltaics XVIII," Editors, Proc. SPIE **10363** (2017).

243. Zakya H. Kafafi, Paul A. Lane, and Ifor D.W. Samuel, "Organic Photovoltaics XVII," Editors, Proc. SPIE **9942** (2016).

242. Zakya H. Kafafi, Ana Flávia Nogueira, Deirdre M. O'Carroll, Raúl J. Martín-Palma, Jeremy J. Pietron, Ifor D.W. Samuel, Franky So, Nelson Tansu, and Loucas Tsakalakos, "The Role of Photonics in Energy," J. Photon. Energy, **Volume 5(1)**, 050997 (2015).

241. Zakya H. Kafafi, Paul A. Lane, and Ifor D.W. Samuel, "Organic Photovoltaics XVI," Editors, Proc. SPIE **9567** (2015).

240. Beibei Zeng, Zakya H. Kafafi, and Filbert J. Bartoli, "Transparent Electrodes based on Two-Dimension Ag Nanogrids and Double One-Dimensional Ag Nanogratings for Organic Photovoltaics," J. Photon. Energy, **Volume 5(1)**, 057005 (2015).

239. Beibei Zeng, Zakya H. Kafafi, and Filbert J. Bartoli, "Transparent Electrodes Employing Ag Nanogratings for Organic Photovoltaics," in "Organic Photovoltaics XV," Zakya H. Kafafi, Paul A. Lane and Ifor D.W. Samuel, Editors, Proc. SPIE **9184**, 91841E (2014).

238. Zakya H. Kafafi, Paul A. Lane, and Ifor D.W. Samuel, "Organic Photovoltaics XV," Editors, Proc. SPIE **9184** (2014).

237. Kai Liu, Beibei Zeng, Haoming Song, Qiaoqiang Gan, Filbert J. Bartoli, and Zakya H. Kafafi, "Super Absorption of Ultra-thin Organic Photovoltaic Films," **Invited Paper** Opt. Comm. **314**, 48 (2014).

236. Zakya H. Kafafi and Paul A. Lane, "Organic Photovoltaics XIV," Editors, Proc. SPIE **8830** (2013).

235. Qiaoqiang Gan, Filbert J. Bartoli, and Zakya H. Kafafi, "Plasmonic-Enhanced Organic Photovoltaics: Breaking the 10% Efficiency Barrier," Adv. Mater. **25**, 2385 (2013).

234. Beibei Zeng, Qiaoqiang Gan, Zakya H. Kafafi, and Filbert J. Bartoli, "Polymeric Photovoltaics with Various Metallic Plasmonic Nanostructures," J. Appl. Phys. **113**, 063109 (2013).

233. Zakya H. Kafafi, Guest Editor, Christoph Brabec and Paul A. Lane, Guest Associate Editors, "Organic Photovoltaics," J. Photonics Energy, **Volume 2** (2012).

232. Zakya H. Kafafi, Christoph Brabec, and Paul A. Lane, "Organic Photovoltaics XIII," Editors, Proc. SPIE **8477** (2012).

231. Qiaoqiang Gan, Filbert J. Bartoli, and Zakya H. Kafafi, "Research Highlights on Organic Photovoltaics and Plasmonics," IEEE Photonics J., **Vol. 4, No. 2**, 620 (2012).

230. Wenli Bai, Qiaoqiang Gan, Guofeng Song, Lianghui Chen, Zakya Kafafi, and Filbert Bartoli, "Double Plasmonic Nanostructure Design for Broadband Absorption Enhancement in Organic Photovoltaics," J. Photon. Energy, **Volume 1**, 011121 (2011).

229. Kaushik Roy Choudhury, Franky So, and Zakya H. Kafafi, "Colloidal Semiconductor Nanocrystal-Enabled Organic/Inorganic Hybrid Light-Emitting Devices," in Comprehensive Nanoscience and Technology, D. L. Andrews, G. D. Scholes and G. P. Wiederrecht, Editors, **Volume 4**, 183 (2011).

228. Zakya H. Kafafi, Guest Editor, Christoph Brabec and Paul A. Lane, Guest Associate Editors, "Organic Photovoltaics," J. Photonics Energy, **Volume 1** (2011).

227. Wenli Bai, Qiaoqiang Gan, Guofeng Song, Lianghui Chen, Zakya Kafafi, and Filbert Bartoli, "Broadband Short-Range Surface Plasmon Structures for Absorption Enhancement in Organic Photovoltaics," Optics Express **18 (104)**, A620 (2010).

226. Zakya H. Kafafi, Guest Editor, René Janssen, Kwanghee Lee, and Barry Rand, Guest Associate Editors, "Next Generation Organic and Hybrid Solar Cells," IEEE J. of Selected Topics in Quantum Electronics, **16, Issue 6** (November/December 2010).

225. C. S. Kim, M. Kim, D. C. Larrabee, I. Vurgaftman, J. R. Meyer, S. H. Lee, and Z. H. Kafafi, "Enhanced Performance of Organic Light-Emitting Diodes Using Two-Dimensional Zinc Sulfide Photonic Crystals," J. Appl. Phys. **106**, 113105 (2009).

224. Zakya H. Kafafi and Paul A. Lane, "Organic Photovoltaics X," Editors, Proc. SPIE **7416** (2009).

223. Leonidas C. Palilis, Paul A. Lane, Gary P. Kushto, Balaji Purushothaman, John E. Anthony, and Zakya H. Kafafi, "Organic Photovoltaic Cells with High Open Circuit Voltages Based on Pentacene Derivatives," Organic Electronics **9**, 742 (2008).

222. Paul A. Lane, Leonidas C. Palilis, Gary P. Kushto, Zakya H. Kafafi, Balaji Purushothaman, and John E. Anthony, "Organic Photovoltaic Cells Based on Functionalized Pentacenes," in "Organic Photovoltaics IX," Zakya H. Kafafi and Paul A. Lane, Editors, Proc. SPIE **7052**, 70521J (2008).

221. Zakya H. Kafafi and Paul A. Lane, "Organic Photovoltaics IX," Editors, Proc. SPIE **7052** (2008).

220. Zakya H. Kafafi and Franky So, "Organic Light-Emitting Materials and Devices XI," Editors, Proc. SPIE **6655** (2007).

219. Zakya H. Kafafi and Paul A. Lane, "Organic Photovoltaics VIII," Editors, Proc. SPIE **6656** (2007).

218. Isabella L. Karle, Raymond J. Butcher, Mason A. Wolak, Demetrio A. da Silva Filho, Manabu Uchida, Jean-Luc Brédas, and Zakya H. Kafafi, "Cooperative CH…π Interactions in the Crystal Structure of 2,5-Di(3-biphenyl)-1,1-dimethyl-3,4-diphenyl-silole, and its Effect on its Electronic Properties," J. Phys. Chem. C. **111**, 9543 (2007).

217. G. P. Kushto, N. J. Watkins, A. J. Mäkinen, and Z. H. Kafafi, "Molecular Engineering in Symmetric End-Substituted Oligothiophene Derivatives: Analysis of Condensed Phase Photoemission Spectra using Semi-empirical Hartree-Fock Calculations," J. Phys. Chem. B. **111**, 5794 (2007).

216. N. J. Watkins, J. P. Long, Z. H. Kafafi, and A. J. Mäkinen, "Fiber Optic Light Collection System for STM-Induced Light Emission," Rev. Sci. Instr. **78**, 053707 (2007).

215. Paul A. Lane, Gary P. Kushto and Zakya H. Kafafi, "Molecular Organic Light-Emitting Diodes with No Hole Transport Layer," Appl. Phys. Lett. **90**, 023511 (2007).

214. I. L. Karle, R. Butcher, M. A. Wolak, S. H. Lee, and Z. H. Kafafi, "Conformational Diversity: Six Conformers Side-by-Side in the Crystal Cell of 2,2',7,7'-Tetramethoxy-9,9'-spiro-9-silabifluorene," J. Chem. Cryst. **37**, 171 (2007).

213. Zakya H. Kafafi and Franky So, "Organic Light-Emitting Materials and Devices X," Editors, Proc. SPIE **6333** (2006).

212. Zakya H. Kafafi and Paul A. Lane, "Organic Photovoltaics VII," Editors, Proc. SPIE **6334** (2006).

211. N. J. Watkins, A. J. Mäkinen, Y. Gao, M. Uchida and Z. H. Kafafi, "Direct Observation of the Evolution of Occupied and Unoccupied Energy Levels Evolution of Two Silole Derivatives at their Interfaces with Magnesium," J. Appl. Phys. **100**, 103706 (2006).

210. M. A. Wolak, J. Delcamp, C. A. Landis, P.A. Lane, J. E. Anthony, and Z. H. Kafafi, "High Performance Organic Light-Emitting Diodes Based on Novel Dioxolane-Substituted Pentacene Derivatives," Adv. Funct. Mater. **16**, 1943 (2006).

209. Edward E. Foos, John Wilkinson, Antti J. Mäkinen, Neil J. Watkins, Zakya H. Kafafi, and James P. Long, "Synthesis and Surface Composition Study of CdSe Nanoclusters Prepared using Solvent Systems Containing Primary, Secondary, and Tertiary Amines" Chem. Mat. **18**, 2886 (2006).

208. M. A. Wolak, J. S. Melinger, P.A. Lane, L. C. Palilis, C. A. Landis, J. E. Anthony, and Z. H. Kafafi, "Excitation Energy Transfer in Dioxolane-Substituted Pentacene Derivatives Dispersed in 4,4-Bis[N-1-napthyl-N-phenyl-amino]biphenyl)," J. Phys. Chem. B **110**, 10606 (2006).

207. M. A. Wolak, J. S. Melinger, P.A. Lane, L. C. Palilis, C. A. Landis, J. Delcamp, J. E. Anthony, and Z. H. Kafafi, "Photophysical Properties of Dioxolane-Substituted Pentacene Derivatives Dispersed in Tris(Quinolin-8-olato) Aluminum III," J. Phys. Chem. B **110**, 7928 (2006).

206. H. Kim , R. C. Y. Auyeung, M. Ollinger, G.P. Kushto, Z. H. Kafafi, A. Piqué, "Laser-Sintered Mesoporous TiO_2 Electrodes for Dye-Sensitized Solar Cells," Appl. Phys. A **83**, 73 (2006).

205. B-B Jang, S. H. Lee, and Z. H. Kafafi, "Novel Asymmetric Pentacene Derivatives for Organic Light-Emitting Diodes," Chem. Mat. **18**, 449 (2006).

204. Hiromichi Yamamoto, John Wilkinson, James P. Long, Konrad Bussman, Joseph A. Christodoulides, and Zakya H. Kafafi, "Nanoscale Organic Light Emitting Diodes," Nano Lett. **5**, 2485 (2005).

203. P.A. Lane, M. A. Wolak, J. S. Melinger, R. A. Williams, L. C. Palilis, J. Delcamp, J. E. Anthony, and Z. H. Kafafi, "Energy Transfer and Excitation Migration in a Doped Organic Semiconductor," in

"Organic Light-Emitting Materials and Devices IX," Zakya H. Kafafi and Paul A. Lane, Editors, Proc. SPIE **5937**, 593709-1 (2005).

202. Zakya H. Kafafi and Paul A. Lane, "Organic Light-Emitting Materials and Devices IX," Editors, Proc. SPIE **5937** (2005).

201. Zakya H. Kafafi and Paul A. Lane, "Organic Photovoltaics VI," Editors, Proc. SPIE **5938** (2005).

200. S. H. Lee, B-B Jang, and Z. H. Kafafi, "Highly Fluorescent Solid-State Asymmetric Spirosilabifluorene Derivatives," J. Am. Chem. Soc. **127**, 9071 (2005).

199. A. J. Mäkinen, J. P. Long, N. J. Watkins, and Z. H. Kafafi, "Sexithiophene Adlayer Growth on Vicinal Gold Surfaces," J. Phys. Chem. B **109**, 5456 (2005).

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