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## I. Earned Degrees

University of Arizona - Tucson, AZ	PhD in Optical Sciences	2004
University of Arizona - Tucson, AZ	MS in Optical Sciences	2002
Universidad Nacional Autónoma de México – Mexico	BS in Physics	1998

## II. Employment History

Northeastern University	Associate Professor	2021-present
Georgia Institute of Technology	Principal Research Scientist	2018-2021
Georgia Institute of Technology	Senior Research Scientist	2012 to 2018
Georgia Institute of Technology	Research Scientist II	2007 to 2012
Georgia Institute of Technology	Postdoctoral Fellow	2005 to 2007
Georgia Institute of Technology	Technician Temp	Summer 2004
University of Arizona	Graduate Associate in Teaching	2004 - 2005
University of Arizona	Research Assistant	2000 - 2004

## III. Honors and Awards

- Distinguished Paper Award, PACM IMWUT, 2021
- NSF I-CORPs grant. Selected “Best-in-class,” 2013.
- OSA Outstanding Reviewer Award, 2012.
- ECE Research Spotlight Award, 2010
- Rolyn Optics Outstanding Graduate Student Teaching Assistant Award, 2004.
- CONACYT scholarship for PhD studies 1999-2004.
- Top three graduates of Physics’ class 1994-1998-1

## IV. Research, Scholarship, and Creative Activities

[Google Scholar](#): Citations: >6700; *h*-index: 43; *i*-10-index: 85

### A. Published Books, Book Chapters, and Edited Volumes

- A.1 **Fuentes-Hernandez, C.** “Metrology of Thin-Film Photodetectors” in Photodetectors: Materials, Devices and Applications, (B. Nabet and Pouya Dianat Editors) Elsevier (*to be published in 2022*).
- A.2 (**Invited**) **Fuentes-Hernandez, C.** “[Charge Transport and Photogeneration in Organic Semiconductors: Photorefractives and Beyond](#).” in Photorefractive Organic Materials and Applications, pp. 65-127, (Blanche Pierre-Alexander Editor) Springer International Publishing (2016).

### B. Refereed Publications and Submitted Articles

#### B1. Published and Accepted Journal Articles

- B1.1 Zhang D., Fuentes-Hernandez C., Vijayan R., Zhang Y., Li Y., Park J-W, Wang Y., Zhao Y., Arora N., Mirzazadeh A., Do Y., Cheng T., Swaminathan S., Starner T., Andrew T.L., and Abowd G.D. “Flexible Computational Photodetectors for Self-Powered Activity Sensing” Accepted for publication in npj Flexible Electronics, 2022 DOI: 10.1038/s41528-022-00137-z
- B1.2 Kim G., **Fuentes-Hernandez C.**, Choi S., Jia X., Kippelen B., “Extraction of gate voltage-independent contact resistance in bottom-gate top-contact organic thin film transistors” [Applied Physics Letters](#), 119, 263301, 2021, DOI: 10.1063/5.0075495
- B1.3 Park, Y, **Fuentes-Hernandez, C.**, Kim, K., Chou, W.-F., Larrain, F.A., Graham, S., Pierron, O.N, Kippelen, B. “Skin-like low-noise elastomeric organic photodiodes”, [Science Advances](#), 7, eabj6565, 2021. DOI: 10.1126/sciadv.abj6565

- B1.4 Larrain, F.A., **Fuentes-Hernandez, C.**, Rodriguez-Toro, V.A., Abraham, S., Kippelen, B. "Increasing free volume in conjugated polymers to facilitate electrical doping with phosphomolybdic acid", ACS Applied Materials & Interfaces vol. 13, pp. 23260-23267, 2021. DOI: [10.1021/acsami.1c05133](https://doi.org/10.1021/acsami.1c05133)
- B1.5 Jia, X., **Fuentes-Hernandez, C.**, Chou, W.-F., Kippelen, B. "Organic photodetector with built-in amplification for the detection of visible light with low optical power," Organic Electronics, vol. 90, pp. 106064, 2021. DOI: [10.1016/j.orgel.2021.106064](https://doi.org/10.1016/j.orgel.2021.106064)
- B1.6 Sun, L., Yang, M, Dong, X., Hu, L., Hu, L., Xie, C., Liu, T., Qin, F., Wang, W., Jiang, Y., Wu, M., Cao, W., Larrain, F.A., **Fuentes-Hernandez, C.**, Meng, K., Kippelen, B., Müller-Buschbaum, P., Zhou, Y. "Efficient Electrical Doping of Organic Semiconductors Via an Orthogonal Liquid-Liquid Contact" Advanced Functional Materials, vol. 31, pp. 2009660, 2021. DOI: [10.1002/adfm.202009660](https://doi.org/10.1002/adfm.202009660)
- B1.7 Tremblay, M.-H., Schutt, K., Pulvirenti, F., Schultz, T., Wegner, B., Jia, X., Zhang, Y., Longhi, E., Dasari, R.R., Fuentes Hernandez, C., Kippelen, B., Koch, N., Snaith, H.J., Barlow, S., Marder S.R. "Benzocyclobutene Polymer as an Additive for a Benzocyclobutene-Fullerene: Application in Stable p-i-n Perovskite Solar Cells" Journal of Materials Chemistry, vol. 9, pp. 9347-9353, 2021. DOI: [10.1039/D0TA07733J](https://doi.org/10.1039/D0TA07733J)
- B1.8 **Fuentes-Hernandez, C.**, Chou, W.-F., Khan, T.M., Diniz, L., Lukens, J., Larrain, F.A., Rodriguez-Toro, V., Chang, Y.-C., Kippelen, B. "Large-area low-noise flexible organic photodiodes for detecting faint visible light". Science, vol. 370, pp. 698, 2020. DOI: [10.1126/science.aba2624](https://doi.org/10.1126/science.aba2624). *Attention score 83. In the top 5 of all research outputs scored by Altmetric (96<sup>th</sup> percentile). In the news, covered in 10+ news stories from 10 outlets.*
- B1.9 Singh, A. K.; Kim, K.; Chou, W.-F.; Jia, X.; **Fuentes-Hernandez, C.**; Kippelen, B.; Graham, S., "Effects of particle inclusions on cracking in ultrathin barrier films". Thin Solid Films, vol. n/a, pp.138387, 2020. DOI: [10.1016/j.tsf.2020.138387](https://doi.org/10.1016/j.tsf.2020.138387)
- B1.10 Abroshan, H., Zhang, Y., Zhang, X., **Fuentes-Hernandez, C.**, Barlow, S., Coropceanu, V., Marder, S.R., Kippelen, B., Bredas, J-L, "Thermally Activated Delayed Fluorescence Sensitization for Highly Efficient Blue Fluorescent Emitters", Advanced Functional Materials, vol., pp, 2020. DOI: [10.1002/adfm.20205898](https://doi.org/10.1002/adfm.20205898)
- B1.11 Kim, G., **Fuentes-Hernandez, C.**, Jia, X., Kippelen, B., "Organic Thin-Film Transistors with a Bottom Bilayer Gate Dielectric Having a Low Operating Voltage and High Operational Stability." ACS Applied Electronic Materials, vol. n/a , pp. n/a 2020. DOI: [10.1021/acsaem.0c00487](https://doi.org/10.1021/acsaem.0c00487). *Selected for Journal cover.*
- B1.12 Singh, A. K., Kim K., Chou, W.-F., Jia, X., Wang, C.-Y., **Fuentes-Hernandez, C.**, Kippelen B., Graham, S. "Impact of Interface Materials on Side Permeation in Indirect Encapsulation of Organic Electronics" Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films, vol. 38 pp. 033203, 2020. DOI: [10.1116/1.5140665](https://doi.org/10.1116/1.5140665)
- B1.13 Huang, T.-Y., Larraín, F., Borca, C., **Fuentes-Hernandez, C.**, Yan, H., Schneider, S., Chou, W.-F., Rodriguez-Toro, V. A., Steinrück, H.-G., Cao, C., Sherrill, C.; Kippelen, B., Toney, M. "Morphology of organic semiconductors electrically doped from solution using phosphomolybdic acid" Journal of Chemistry of Materials, vol. 31 pp. 6677-6683, 2019. DOI: [10.1021/acs.chemmater.9b01069](https://doi.org/10.1021/acs.chemmater.9b01069)
- B1.14 Kim, K., Jia, X., **Fuentes-Hernandez, C.**, Kippelen, B., Graham, S., Pierron, O. "Optimizing Crack Onset Strain for Silicon Nitride / Fluoropolymer Nanolaminate Barrier Films" ACS Applied Nano Materials, vol. 2 pp. 2525-2532, 2019. DOI: [10.1021/acsanm.9b00440](https://doi.org/10.1021/acsanm.9b00440)
- B1.15 Zhang, X., Cooper, M., Zhang, Y., **Fuentes-Hernandez, C.**, Barlow, S., Marder, S., Kippelen, B. "Host-free Yellow-Green Organic Light-Emitting Diodes with External Quantum Efficiency over 20% based on a Compound Exhibiting Thermally Activated Delayed Fluorescence" ACS Applied Materials & Interfaces vol. 11 pp. 12693-12698, 2019. DOI: [10.1021/acsami.8b18798](https://doi.org/10.1021/acsami.8b18798)
- B1.16 Cooper, M.W., Zhang, X., Zhang, Y., Jeon, S.O., Lee, H., Kim, S., **Fuentes-Hernandez, C.**, Barlow, S., Kippelen, B. and Marder, S.R. "Effect of the Number and Substitution Pattern of Carbazole Donors on the Singlet and Triplet State Energies in a Series of Carbazole-Oxadiazole Derivatives Exhibiting Thermally Activated Delayed Fluorescence." Chemistry of Materials vol. 30 pp. 6389-6399, 2018. DOI: [10.1021/acs.chemmater.8b02632](https://doi.org/10.1021/acs.chemmater.8b02632)
- B1.17 Cooper, M.W., Zhang, X., Zhang, Y., **Fuentes-Hernandez, C.**, Barlow, S., Kippelen, B. and Marder, S.R. "Control of Singlet Emission Energy in a Diphenyloxadiazole Containing Fluorophore Leading To Thermally Activated Delayed Fluorescence." ACS Omega vol. 3 pp. 14918-14923, 2018. DOI: [10.1021/acsomega.8b01979](https://doi.org/10.1021/acsomega.8b01979)

- B1.18 Zhang, X., **Fuentes-Hernandez, C.**, Zhang, Y., Cooper, M.W., Barlow, S., Marder, S.R. and Kippelen, B. "High performance blue-emitting organic light-emitting diodes from thermally activated delayed fluorescence: A guest/host ratio study." *Journal of Applied Physics* vol. 124 pp. 055501, 2018. DOI: [10.1063/1.5041447](https://doi.org/10.1063/1.5041447)
- B1.19 Park, Y., **Fuentes-Hernandez, C.**, Jia, X., Larrain, F.A., Zhang, J., Marder, S.R. and Kippelen, B. "Measurements of the field-effect electron mobility of the acceptor ITIC." *Organic Electronics* vol. 58 pp. 290-293, 2018. DOI: [10.1016/j.orgel.2018.04.028](https://doi.org/10.1016/j.orgel.2018.04.028)
- B1.20 Lo, C.K., Wang, C.-Y., Oosterhout, S.D., Zheng, Z., Yi, X., **Fuentes-Hernandez, C.**, So, F., Coropceanu, V., Brédas, J.-L., Toney, M.F., Kippelen, B. and Reynolds, J.R. "Langmuir–Blodgett Thin Films of Diketopyrrolopyrrole-Based Amphiphiles." *ACS Applied Materials & Interfaces* vol. 10 pp. 11995-12004, 2018. DOI: [10.1021/acsami.7b18239](https://doi.org/10.1021/acsami.7b18239)
- B1.21 Larrain, F.A., **Fuentes-Hernandez, C.**, Chou, W.-F., Rodriguez-Toro, V.A., Huang, T.-Y., Toney, M.F. and Kippelen, B. "Stable solvent for solution-based electrical doping of semiconducting polymer films and its application to organic solar cells." *Energy & Environmental Science* vol. 11 pp. 2216-2224, 2018. DOI: [10.1039/C8EE00811F](https://doi.org/10.1039/C8EE00811F)
- B1.22 Jia, X., **Fuentes-Hernandez, C.**, Wang, C.-Y., Park, Y., Kippelen, B., "Organic thin-film transistors with high environmental operational and thermal stability through the use of a bilayer gate dielectric," *Science Advances*, vol. 4, pp. eaao1705, 2018. DOI: [10.1126/sciadv.aao1705](https://doi.org/10.1126/sciadv.aao1705). *Attention score 115. In the top 5 of all research outputs scored by Altmetric (98<sup>th</sup> percentile). In the news, covered in 15+ news stories from 14 outlets.*
- B1.23 Kim, H. K.; Hyla, A. S.; Winget, P.; Li, H.; Wyss, C. M.; Jordan, A. J.; Larrain, F. A.; Sadighi, J. P.; **Fuentes-Hernandez, C.**; Kippelen, B.; Brédas, J.-L.; Barlow, S.; Marder, S. R., "Reduction of the Work Function of Gold by N-Heterocyclic Carbenes". *Chemistry of Materials*, vol. 29, pp. 3403-3411, 2017. DOI: [10.1021/acs.chemmater.6b04213](https://doi.org/10.1021/acs.chemmater.6b04213)
- B1.24 Mao, L.; Tong, J.; Xiong, S.; Jiang, F.; Qin, F.; Meng, W.; Luo, B.; Liu, Y.; Li, Z.; Jiang, Y.; **Fuentes-Hernandez, C.**; Kippelen, B.; Zhou, Y., "Flexible large-area organic tandem solar cells with high defect tolerance and device yield". *Journal of Materials Chemistry A*, vol. 5, pp. 3186-3192, 2017. DOI: [10.1039/C6TA10106B](https://doi.org/10.1039/C6TA10106B)
- B1.25 Wang, C.-Y., **Fuentes-Hernandez, C.**, Chou W.-F., Kippelen, B. "Top-gate organic field-effect transistors fabricated on paper with high operational stability" *Organic Electronics* vol. 41, pp. 340-344, 2017. DOI: [10.1016/j.orgel.2016.11.026](https://doi.org/10.1016/j.orgel.2016.11.026)
- B1.26 Kolesov, V.A., **Fuentes-Hernandez, C.**, Chou, W.-F., Aizawa, N., Larrain, F.A., Wang, M., Perrotta, A., Choi, S., Graham, S., Bazan, G.C., Nguyen, T.-Q., Marder, S.R. and Kippelen, B. "Solution-based electrical doping of semiconducting polymer films over a controlled depth." *Nature Materials*, vol. 16, pp. 474-480, 2017. DOI: [10.1038/nmat4818](https://doi.org/10.1038/nmat4818). *Attention score 175. In the top 5 of all research outputs scored by Altmetric (98<sup>th</sup> percentile). In the news, covered in 27+ news stories from 20 outlets.*
- B1.27 Perrotta, A., **Fuentes-Hernandez, C.**, Khan, T.M., Kippelen, B., Creatore, M. and Graham, S.J. "Room-temperature direct encapsulation of organic photovoltaics by plasma-based deposition techniques." *Journal of Physics D: Applied Physics* vol. 50, pp. 024003, 2017. DOI: [10.1088/1361-6463/50/2/024003](https://doi.org/10.1088/1361-6463/50/2/024003)
- B1.28 Jiang, Y., Luo, B., Jiang, F., Jiang, F., **Fuentes-Hernandez, C.**, Liu, T., Mao, L., Xiong, S., Li, Z., Wang, T., Kippelen, B. and Zhou, Y. "Efficient colorful perovskite solar cells using top polymer electrode simultaneously as spectrally selective antireflection coating." *Nanoletters* vol. 16, pp. 7829-7835, 2016. DOI: [10.1021/acs.nanolett.6b04019](https://doi.org/10.1021/acs.nanolett.6b04019)
- B1.29 Wang, C.-Y., **Fuentes-Hernandez, C.**, Yun, M., Singh, A., Dindar, A., Choi, S., Graham, S. and Kippelen, B. "Organic field-effect transistors with a bilayer gate dielectric comprising an oxide nanolaminate grown by atomic layer deposition." *ACS Applied Materials and Interfaces* vol. 8, pp. 29872-29876, 2016. DOI: [10.1021/acsami.6b10603](https://doi.org/10.1021/acsami.6b10603)
- B1.30 Pérez-Gutiérrez, E., Barreiro-Argüelles, D., Maldonado, J.-L., Meneses-Nava, M., Barbosa-Garcia, O., Ramos-Ortiz, G., Rodriguez, M., **Fuentes-Hernandez, C.** "Semiconductor polymer/top electrode interface generated by two deposition methods and its influence on organic solar cell performance" *ACS Applied Materials & Interfaces* vol. 8, pp. 28763-28770, 2016. DOI: [10.1021/acsami.6b08970](https://doi.org/10.1021/acsami.6b08970)
- B1.31 Choi, S., **Fuentes-Hernandez, C.**, Wang, C.-Y., Khan, T.M., Larrain, F.A., Zhang, Y., Barlow, S., Marder, S.R. and Kippelen, B. "A Study on Reducing Contact Resistance in Solution-Processed

- Organic Field-Effect Transistors." *ACS Applied Materials and Interfaces* vol. 8, pp. 24744-24752, 2016. DOI: [10.1021/acsami.6b07029](https://doi.org/10.1021/acsami.6b07029)
- B1.32 Choi, S., Larrain, F.A., Wang, C.-Y., **Fuentes-Hernandez, C.**, Chou, W.-F. and Kippelen, B. "Self-forming Electrode Modification in Organic Field-Effect Transistors." *Journal of Materials Chemistry C* vol. 4 pp. 8297-8303, 2016. DOI: [10.1039/C6TC02028C](https://doi.org/10.1039/C6TC02028C)
- B1.33 Tong, J., Xiong, S., Zhou, Y., Mao, L., Min, X., Li, Z., Jiang, F., Meng, W., Qin, F., Liu, T., Ge, R., **Fuentes-Hernandez, C.**, Kippelen, B. and Zhou, Y. "Flexible all-solution-processed all-plastic multijunction solar cells for powering electronic devices." *Materials Horizons* vol. 3 pp. 452-459, 2016. DOI: [10.1039/C6MH00164E](https://doi.org/10.1039/C6MH00164E)
- B1.34 Aizawa N., **Fuentes-Hernandez C.**, Kolesov V.A., Kido J. and Kippelen B. "Simultaneous Cross-Linking and p-Doping of a Polymeric Semiconductor Film by Immersion into a Phosphomolybdic Acid Solution for Use in Organic Solar Cells". *Chemical Communications*, vol. 52, pp. 3825-3827, 2016. DOI: [10.1039/C6CC01022A](https://doi.org/10.1039/C6CC01022A)
- B1.35 Kim, H., Singh, A.K., Wang, C.-Y., **Fuentes-Hernandez, C.**, Kippelen, B. and Graham, S. "Experimental investigation of defect-assisted and intrinsic water vapor permeation through ultrabARRIER films." *Review of Scientific Instruments* vol. 87 pp. 033902, 2016. DOI: [10.1063/1.4942510](https://doi.org/10.1063/1.4942510)
- B1.36 Gaj, M. P.; Wei, A.; **Fuentes-Hernandez, C.**; Zhang, Y.; Reit, R.; Voit, W.; Marder, S. R.; Kippelen, B., "Organic light-emitting diodes on shape memory polymer substrates for wearable electronics". *Organic Electronics*, vol. 25, pp. 151-155, 2015. DOI: [10.1016/j.orgel.2015.06.029](https://doi.org/10.1016/j.orgel.2015.06.029)
- B1.37 Kim, Y.; Kathaperumal, M.; Chen, V. W.; Park, Y.; **Fuentes-Hernandez, C.**; Pan, M. J.; Kippelen, B.; Perry, J. W., "Bilayer Structure with Ultrahigh Energy/Power Density Using Hybrid Sol-Gel Dielectric and Charge-Blocking Monolayer". *Advanced Energy Materials*, vol. 5, pp. 1500767 (5), 2015. DOI: [10.1002/aenm.201500767](https://doi.org/10.1002/aenm.201500767)
- B1.38 Bulusu, A.; Singh, A.; Wang, C.; Dindar, A.; **Fuentes-Hernandez, C.**; Kim, H.; Cullen, D.; Kippelen, B.; Graham, S., "Engineering the mechanical properties of ultrabARRIER films grown by atomic layer deposition for the encapsulation of printed electronics". *J. Appl. Phys.*, vol. 118, pp. 085501, 2015. DOI: [10.1063/1.4928855](https://doi.org/10.1063/1.4928855)
- B1.39 Fu, B.; Wang, C.-Y.; Rose, B. D.; Jiang, Y.; Chang, M.; Chu, P.-H.; Yuan, Z.; **Fuentes-Hernandez, C.**; Kippelen, B.; Brédas, J.-L.; Collard, D. M.; Reichmanis, E., "Molecular Engineering of Nonhalogenated Solution-Processable Bithiazole-Based Electron-Transport Polymeric Semiconductors". *Chemistry of Materials*, vol. 27, pp. 2928–2937, 2015. DOI: [10.1021/acs.chemmater.5b00173](https://doi.org/10.1021/acs.chemmater.5b00173)
- B1.40 Wang, C.-Y., **Fuentes-Hernandez, C.**, Liu, J.-C., Dindar, A., Choi, S., Youngblood, J.P., Moon, R.J., Kippelen, B., "Stable Low-Voltage Operation Top-Gate Organic Field-Effect Transistors on Cellulose Nanocrystal Substrates", *ACS applied materials & interfaces*, vol. 7 pp. 4804-4808 2015. DOI: [10.1021/am508723a](https://doi.org/10.1021/am508723a)
- B1.41 Choi, S., Zhou, Y., Haske, W., Shim, J.W., **Fuentes-Hernandez, C.**, Kippelen, B., "ITO-free large-area flexible organic solar cells with an embedded metal grid", *Organic Electronics*, vol. 17, pp. 349-354, 2015. DOI: [10.1016/j.orgel.2014.12.029](https://doi.org/10.1016/j.orgel.2014.12.029)
- B1.42 Giordano, A.J., Pulvirenti, F., Khan, T.M., **Fuentes-Hernandez, C.**, Moudgil, K., Delcamp, J.H., Kippelen, B., Barlow, S., Marder, S.R., "Organometallic Dimers: Application to Work-Function Reduction of Conducting Oxides", *ACS Applied Materials & Interfaces*, vol.7 pp.4320-4326, 2015. DOI: [10.1021/am5087648](https://doi.org/10.1021/am5087648)
- B1.43 Gaj, M., **Fuentes-Hernandez, C.**, Zhang, Y., Marder, S.R., Kippelen, B., "Highly efficient Organic Light-Emitting Diodes from thermally activated delayed fluorescence using a sulfone-carbazole host material" *Organic Electronics*, vol.16, pp.109-112, 2015. DOI: [10.1016/j.orgel.2014.10.049](https://doi.org/10.1016/j.orgel.2014.10.049)
- B1.44 Zhou, Y., Khan, T.M., Shim, J.W., Dindar, A., **Fuentes-Hernandez, C.**, and Kippelen, B., "All-plastic solar cells with a high photovoltaic dynamic range," *Journal of Materials Chemistry A*, vol. 2,no.10, pp. 3492-3497, 2014. DOI: [10.1039/C3TA15073A](https://doi.org/10.1039/C3TA15073A)
- B1.45 Zhou, Y., Shim, J.W., **Fuentes-Hernandez, C.**, Khan, T.M., Kippelen, B., "Inverted organic solar cells with polymer-modified fluorine-doped tin oxide as the electron-collecting electrode", *Thin Solid Films*, vol. 554, pp.54-57, 2014. DOI: [10.1016/j.tsf.2013.05.059](https://doi.org/10.1016/j.tsf.2013.05.059)
- B1.46 Yun, M., Sharma, A., **Fuentes-Hernandez, C.**, Hwang, D.K., Dindar, A., Singh, S., Choi, S., Kippelen, B., "Stable Organic Field-effect Transistors for Continuous and Non-destructive Sensing

- of Chemical and Biologically Relevant Molecules in Aqueous Environment", *ACS applied materials & interfaces*, vol. 6, pp. 1616-1622, 2014. DOI: [10.1021/am404460j](https://doi.org/10.1021/am404460j)
- B1.47 Shim, J.W., **Fuentes-Hernandez, C.**, Zhou, Y., Dindar, A., Khan, T.M., Giordano, A.J., Cheun, H., Yun, M., Marder, S.R., Kippelen, B., "Inverted Tandem Polymer Solar Cells with Polyethylenimine-Modified MoO<sub>x</sub>/Al<sub>2</sub>O<sub>3</sub> Nanolaminate as the Charge Recombination Layers", *Advanced Energy Materials*, vol. 4, pp. 1400048, 2014. DOI: [10.1002/aenm.201400048](https://doi.org/10.1002/aenm.201400048)
- B1.48 Najafabadi, E., Zhou, Y. H., Knauer, K. A., **Fuentes-Hernandez, C.**, and Kippelen, B. "Efficient organic light-emitting diodes fabricated on cellulose nanocrystal substrates," *Applied Physics Letters*, vol. 105, pp. 063305, 2014. DOI: [10.1063/1.4891046](https://doi.org/10.1063/1.4891046)
- B1.49 Khan, T. M.; Zhou, Y.; Dindar, A.; Shim, J. W.; **Fuentes-Hernandez, C.**; Kippelen, B., "Organic Photovoltaic Cells with Stable Top Metal Electrodes Modified with Polyethylenimine". *ACS Applied Materials & Interfaces*, vol. 6, pp. 6202-6207, 2014. DOI: [10.1021/am501236z](https://doi.org/10.1021/am501236z)
- B1.50 Hwang, D. K., **Fuentes-Hernandez, C.**, Fenoll, M., Yun, M., Park, J., Shim, J.-W., Knauer, K., Dindar, A., Kim, H., Kim, Y., Kim, J. Cheun, H., Payne, M., Graham, S. Im, S., Anthony, J., Kippelen, B., " Systematic Reliability Study of Top-Gate p- and n-channel Organic Field-Effect Transistors," *ACS applied materials & interfaces*, vol. 6, pp. 3378-3386, 2014. DOI: [10.1021/am405424k](https://doi.org/10.1021/am405424k)
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## **B2. Conference Presentation with Proceedings (Refereed)**

- B2.1 Zhang, D., Park, J. W., Zhang, Y., Zhao, Y., Wang, Y., Li, Y., Bhagwat, T., Chou, W.-F., Jia, X., Kippelen, B., **Fuentes-Hernandez, C.**, Starner, T., Abowd, G. D., "OptoSense: Towards Ubiquitous Self-Powered Ambient Light Sensing Surfaces." *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 4 (3), Article 103, 2020. DOI:[10.1145/3411826](https://doi.org/10.1145/3411826) *Distinguished Paper Award*
- B2.2 **Fuentes-Hernandez, C.** "Emerging Photovoltaics for Sustainable Self Powered Computational Materials", SelfSustainableCHI: Workshop on Sustainable Self Powered Interfaces and Interactions, May 21<sup>st</sup>, 2020.
- B2.3 **Fuentes-Hernandez, C.**; Chou, W.-F.; Rodriguez-Toro, V. A.; Park, Y.; Chang, Y.-C.; Larrain, F. A.; Kippelen, B. "Low-noise large-area organic photodiodes", *Organic and Hybrid Sensors and Bioelectronics XIII*, International Society for Optics and Photonics: 2020; p 114750N.
- B2.4 **Fuentes-Hernandez, C.**, Chou, W.-F., Rodriguez-Toro, V., Larrain, F. Kippelen, B. "On the Characterization and Modeling of the Current Characteristics of Organic Photodiodes" 2019 IEEE Research and Applications of Photonics in Defense (RAPID). Sandestin Beach, FL, August 19<sup>th</sup>, 2019.
- B2.5 Jia, X., **Fuentes-Hernandez, C.**, Wang, C.-Y., Park, Y., Kim, G., and Kippelen, B. "Balancing aging mechanisms in organic field-effect transistors", *Proc. SPIE 11097*, Organic and Hybrid Field-Effect Transistors XVIII, 110970D August, 30<sup>th</sup>, 2019
- B2.6 Choi, S.; **Fuentes-Hernandez, C.**; Wang, C. Y.; Wei, A.; Voit, W.; Zhang, Y. D.; Barlow, S.; Marder, S. R.; Kippelen, B., "Top-gate Organic Field-effect Transistors Fabricated on Shape-memory Polymer Substrates." In *Organic Field-Effect Transistors XIV; and Organic Sensors and Bioelectronics VIII*, McCulloch, I.; Jurchescu, O. D.; Kymissis, I.; Shinar, R.; Torsi, L., Eds. 2015; Vol. 9568, August 31<sup>st</sup>, 2015.
- B2.7 Choi, S., **Fuentes-Hernandez, C.**, Yun, M., Dindar, A., Khan, T.M., Wang, C.-Y., and Kippelen, B. "Organic transistor circuit implementation using reverse stamping for interconnections between electrodes," to be presented at SPIE Optics and Photonics, San Diego, CA, Aug. 17-21, 2014.
- B2.8 Kippelen, B., Hwang, D. K., **Fuentes-Hernandez, C.**, Kim, J. B., "Organic and hybrid thin-film transistors with novel architectures and high performance", Large-area, Organic and Printed Electronics Convention (LOPE-C): Organic Transistors, June 29<sup>th</sup>, 2011.
- B2.9 **Fuentes-Hernandez, C.**, Owens, D. T., Hsu, J., Ernst, A. R., Hales, J. M., Perry, J. W., Kippelen, B., "The Ultrafast Nonlinear Optical Properties of Induced Transmission Filters", *OSA Technical Digest: Quantum Electronics and Laser Science Conference*, pp.QFB5, May 1<sup>st</sup>, 2011.
- B2.10 Owens, D., **Fuentes-Hernandez, C.**, Hales, J. M., Perry, J. W., Kippelen, B., "A comprehensive study of the contributions to the nonlinear optical properties of thin Ag films", *Proceeding of SPIE: Active Photonic Materials III*, vol.7756, pp.77560K, August 2<sup>nd</sup>, 2010.
- B2.11 **Fuentes-Hernandez, C.**, Owens, T. D., Hsu, J., Ernst, R. A., Hales, M. J., Perry, W. J., Kippelen, B., "The nonlinear optical response of transparent silver/gold multimetal layers", *Proceeding of SPIE, Active Photonic Materials III*, vol.7756, pp.77560G, August 2<sup>nd</sup>, 2010.
- B2.12 **Fuentes-Hernandez, C.**, Owens, D., Hales, J. M., Perry, J. W., Kippelen, B., "Nonlinear Optical Properties of Layered Multi-Metal Nanostructures", *OSA Technical Digest: Quantum Electronics and Laser Science Conference*, pp.JWA4, May 16<sup>th</sup>, 2010, 2010.

- B2.13 **Fuentes-Hernandez, C.**, Padilha, L. A., Hales, J. M., Owens, D. T., Kim, J., Webster, S., Perry, J. W., Hagan, D. J., VanStryland, E. W., Kippelen, B., "The Nonlinear Optical Response of Transparent Metal-Dielectric Multilayer Structures", OSA Technical Digest: Nonlinear Optics: Materials, Fundamentals and Applications, pp.JTuA2, 2009.
- B2.14 **Fuentes-Hernandez, C.**, Padilha, L. A., Hales, J. M., Owens, D., Kim, J., Webster, S., Perry, J. W., Hagan, D. J., VanStryland, E. W., Kippelen, B., "The Nonlinear Optical Response of Transparent Metal-Dielectric Multilayer Structures", OSA Technical Digest: Integrated Photonics and Nanophotonics Research and Applications, pp.JTuA2, July 17<sup>th</sup>, 2009.
- B2.15 **Fuentes-Hernandez, C.**, Padilha, L. A., Hales, J. M., Owens, D., Kim, J., Webster, S., Perry, J. W., Hagan, D. J., VanStryland, E. W., Kippelen, B., "Enhanced Nonlinear Absorption in Low-Finesse Metal-Dielectric Fabry-Perot Resonators", OSA Technical Digest: Conference on Lasers and Electro-Optics/International Quantum Electronics Conference, pp.IThD5, May 31<sup>st</sup>, 2009.
- B2.16 Salandrino, A., Padilha, L. A., Webster, S., **Fuentes-Hernandez, C.**, Kippelen, B., Hagan, D., J., Van Stryland, E. W., "Observation of Plasmonic Field-Enhancement of the Nonlinear Response of Gold Thin Films", OSA Technical Digest: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies, pp. QThA6, May 4<sup>th</sup>, 2008.
- B2.17 **Fuentes-Hernandez, C.**, Tseng, S.-Y., Chi, S.-H., Hales, J. M., Perry, J. W., Marder, S. R., Kippelen, B., "Third-Harmonic Generation in Organic Thin Films as an Alternative to Degenerate Four-Wave Mixing Ultrafast Optical Image Processing", OSA Technical Digest: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies, pp. CFX6, May 4<sup>th</sup>, 2008.
- B2.18 **Fuentes-Hernandez, C.**, Padilha, L. A., Owens, D., Tseng, S.-Y., Webster, S., Cho, J.-Y., Hagan, D. J., VanStryland, E. W., Marder, S. R., Kippelen, B., "Nonlinear Refraction and Absorption in Highly Transmissive One-Dimensional Metal-Organic Photonic Bandgap Structures", OSA Technical Digest: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies, pp.CThI6, May 4<sup>th</sup>, 2008.
- B2.19 **Fuentes-Hernandez, C.**, Padilha, L. A., Owens, D., Tseng, S.-Y., Webster, S., Cho, J.-Y., Hagan, D. J., Van Stryland, E. W., Marder, S. R., Kippelen, B., "Linear and nonlinear optical properties of highly transmissive one-dimensional metal-organic photonic bandgap structures", Proceedings of SPIE: Linear and Nonlinear Optics of Organic Materials VIII, vol. 7049, pp. 70490O, Tuesday 12<sup>th</sup>, 2008.
- B2.20 Owens, D., **Fuentes-Hernandez, C.**, Kippelen, B., "Aperiodic metal-dielectric optical filters", Proceeding of SPIE: Thin-Film Coatings for Optical Applications IV, vol.6674, pp.667404, August 27<sup>th</sup>, 2007.
- B2.21 **Fuentes-Hernandez, C.**, Tseng, S.-Y., Owens, D., Kippelen, B., "Ultrafast Optical Image Processing through Non-Collinear Third-Harmonic Generation in Thin Organic Films", OSA Technical Digest: Frontiers in Optics, pp.PDP\_A6, September 16<sup>th</sup>, 2007.
- B2.22 **Fuentes-Hernandez, C.**, Thomas, J., Meredith, G. R., Peyghambarian, N. N., Marder, S. R., Kippelen, B., "Trapping mechanisms and dynamics in bis-triarylamine-based photorefractive polymer composites", Proceedings of SPIE: Organic Holographic Materials and Applications II, vol. 5521, pp.96, August 5<sup>th</sup>, 2004.
- B2.23 Suh, D. J., **Fuentes-Hernandez, C.**, Marder, S. R., Kippelen, B., "Efficient and fast photorefractive polymers sensitized by CdSe nanoparticles", OSA Technical Digest: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference, pp. CFK5, June 1<sup>st</sup>, 2003.
- B2.24 Kippelen, B., Cammack, K., **Fuentes-Hernandez, C.**, Li, G., Marder, S. R., Matsumoto, K., Meredith, G., Peyghambarian, N., Thomas, J., Yamamoto, M., "Real-time high quality correction of distorted images using photorefractive polymer composites", OSA Technical Digest: Frontiers in Optics, pp. PDP12, October 5<sup>th</sup>, 2003.
- B2.25 **Fuentes-Hernandez, C.**, Thomas, J., Termine, R., Eralp, M., Yamamoto, M., Cammack, K., Matsumoto, K., Barlow, S., Walker, G., Meredith, G., Peyghambarian, N., Kippelen, B., Marder, S. R., "Photorefractive polymers based on bis-triarylamine side-chain polymers", Proceedings of SPIE: Organic Holographic Materials and Applications, vol.5216, pp.83, August 7<sup>th</sup>, 2003.
- B2.26 **Fuentes-Hernandez, C.**, Suh, D. J., Marder, S. R., Kippelen, B., "Efficient photorefractive polymers sensitized by CdSe nanoparticles", Proceedings of SPIE: Organic Holographic Materials and Applications, vol.5216, pp.221, August 7<sup>th</sup>, 2003.

- B2.27 Maldonado, J.-L., Bishop, M., Fuentes-Hernandez, C., Domercq, B., Barlow, S., Thayumanavan, S., Malagoli, M., Manoharan, M., Bredas, J.-L., Marder, S. R., Kippelen, B., "Effect of aryl substitution on the hole mobility of bis-diarylamino-biphenyl-doped polymer composites", Proceedings of SPIE: Organic Photorefractive and Photosensitive Materials for Holographic Applications, vol. 4802, pp. 42, July 9<sup>th</sup>, 2002.
- B2.28 **Fuentes-Hernandez, C.**, Herlocker, J. A., Wang, J. F., Zhang, Y., Marder, S. R., Peyghambarian, N., Kippelen, B., "Optimization of photorefractive polymers doped with styrene-based chromophores", Proceedings of SPIE: Organic Photonic Materials and Devices III, vol.4279, pp.63, January 24<sup>th</sup>, 2001.
- B2.29 Herlocker, J. A., **Fuentes-Hernandez, C.**, Wang, J. F., Peyghambarian, N., Kippelen, B., Zhang, Y., Marder, S. R., "Photorefractive properties of polymer composites fabricated by injection molding", OSA Technical Digest: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference, pp. 399, 2001.

### **B3. Submitted Journal Articles**

- B3.1 None

## **C. Other Publications and Creative Products**

### **C1. Non-refereed publications**

- C1.1. **(Invited) Fuentes-Hernandez C.** and Kippelen B., "[Organic optoelectronics on shape memory polymers](#)," Aldrich Materials Matters. 2018.
- C1.2. **Fuentes-Hernandez C.** and Kippelen B., "Organic Photovoltaic Materials and Devices for Consumer Applications and Embedded Systems," INTEL Request for Information. 2010.

### **C2. Issued Patents**

- C2.1 [US 10,763,447 B2](#) "Devices with organic semiconductor layers electrically-doped over a controlled depth" N. Aizawa, C. Fuentes Hernandez, V. Kolesov, W.-F. Chou, F. A Larrain, J. Kido, S.R. Marder, B. Kippelen, (GTRC 7017PCT). Sep. 1<sup>st</sup>, 2020.
- C2.2 [US 9,658,510 B2](#) "Devices, systems and methods for ultrafast optical applications" B. Kippelen, C. Fuentes-Hernandez, J. Hsu. May 23<sup>rd</sup>, 2017.
- C2.3 [US 9,368,737 B2](#) "Field-Effect Transistor and Manufacturing Process Thereof" by D.K. Hwang, C. Fuentes-Hernandez, J. B. Kim and B. Kippelen. June 14<sup>th</sup>, 2016.
- C2.4 [US 9,203,030 B2](#) "Recyclable Organic Solar Cells On Substrates Comprising Cellulose Nanocrystals (CNC)" B. Kippelen, C Fuentes-Hernandez, Y Zhou, R Moon, JP Youngblood. December 1<sup>st</sup>, 2015.
- C2.5 [US 9,076,768 B2](#) " Systems and methods for producing low work function electrodes " by B. Kippelen, C. Fuentes-Hernandez, Y. Zhou, A. Kahn, J. Meyer, J.W. Shim and S. R. Marder. July 7<sup>th</sup>, 2015.

### **C3. Patent Applications**

- C3.1 U.S. Patent Application No. 62622312 filed August 7<sup>th</sup>, 2021 "A Method to Produce High-Sensitivity Stable Sensors" C. Fuentes-Hernandez, X. Jia B. Kippelen (GTRC 7789PRV). **Patent Pending 17/429,334**
- C3.2 U.S. Patent Application No. 62/875,039 filed July 17<sup>th</sup> 2019 "A Self-Powered Conformable Optical Sensing Surface For Multitouch And In-Air Gesture Input Using Organic Optoelectronic Devices" D. Zhang, G.D. Abowd, W.F. Chou, C. Fuentes Hernandez, B. Kippelen, J.W. Park, T.E. Starnier, Y. Zhao (GTRC 8226PRV) *Not prosecuted*.

- C3.3 U.S. Patent Application No. 62723354 filed August 27<sup>th</sup>, 2018 "Oxidiazoles with High Triplet Energy as Thermally Activated Delayed Fluorophores" S. Marder, S. Barlow, M. Cooper, C. Fuentes-Hernandez, B. Kippelen, T. Parker, X. Zhang, Y. Zhang (GTRC 7759PRV) *Not prosecuted*.
- C3.4 U.S. Patent Application No. 62/586,337 filed November 15<sup>th</sup>, 2017 "Stable thin-film transistors" X. Jia, C. Fuentes-Hernandez, B. Kippelen (GTRC 7740). *Not prosecuted*.
- C3.5 US Provisional Application No. 62/528,310 filed July 3<sup>rd</sup>, 2017 "Composition for forming Organic light emitting diode device, and Organic light emitting diode device" S.R. Marder, S. Barlow, O. Ko, C. Fuentes-Hernandez, B. Kippelen, X. Zhang. (GTRC 7679). *Not prosecuted*.
- C3.6 U.S. Provisional Patent Application No. 62/324,394 filed April 20<sup>th</sup>, 2015 "Mechanically Robust UltrabARRIER Films" A. Bulusu, S. Graham, C. Fuentes-Hernandez, B. Kippelen, (GTRC 6949). *Not prosecuted*.
- C3.7 "A method of producing high performance organic field-effect transistors" S. Marder, S. Barlow, B. Kippelen, C. Fuentes Hernandez, S. Choi, C.Y. Wang, filed September 17<sup>th</sup>, 2015. (GTRC 7084). *Not prosecuted*.

## D. Presentations

### D1. Invited presentations

- D1.1 **Fuentes-Hernandez, C.**, "Organic Light-Emitting Diodes: Light for the 21<sup>st</sup> Century" The 21<sup>st</sup> International Meeting on Information Display (IMID2021), August 25<sup>th</sup>, 2021 (Virtual tutorial)
- D1.2 **Fuentes-Hernandez, C.**, "Building human and engineered interfaces in and around organic photodiodes" Photovoltaics Workshop at Monash University, Melbourne, Australia, December 12<sup>th</sup>, 2019
- D1.3 **Fuentes-Hernandez, C.**, Jia, X., Zhang, Park, Y., X., Larrain, F.A., Kippelen, B. "Recent Advances in Organic Materials and Devices for Adaptive Solid-State Lighting." Presented at SPIE Optics and Photonics, San Diego, CA, August 20<sup>th</sup>, 2018
- D1.4 **Fuentes-Hernandez C.**, "Interface and Device Engineering in Organic Electronics: Towards Computational Materials", Huazhong University of Science and Technology, Wuhan, China, May 25, 2018.
- D1.5 **Fuentes-Hernandez C.** "Interface and Device Engineering in Organic Electronics", Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, May 21, 2018.
- D1.6 **Fuentes-Hernandez C.**, F.A Larrain, W.-F. Chou, C.-Y. Wang, S., Choi, B. Kippelen "Intelligent paper: Printed electronics on advanced cellulosic nanomaterials" 255<sup>th</sup> American Chemical Society National Meeting & Exposition, New Orleans, Louisiana, USA, March 18-22, 2018.
- D1.7 **Fuentes-Hernandez, C.**, "The Printed Electronics Revolution" Kimoto Tech's Technical Conference, Rome, Georgia, October 3<sup>th</sup>, 2017.
- D1.8 **Fuentes-Hernandez, C.**, "Towards sustainable printed electronics" Tata group visit GA Tech, Atlanta, GA, September 2<sup>th</sup>, 2016.
- D1.9 **Fuentes-Hernandez, C.**, "Printed electronics on packaging" Smurfit Kappa group visit GA Tech, Atlanta, GA, February 16<sup>th</sup>, 2016.
- D1.10 **Fuentes-Hernandez, C.**, "Interfaces and interfaces in organic photovoltaics" Mexican Optics and Photonics Meeting, Leon, Guanajuato, Mexico, September 9<sup>th</sup>, 2015.
- D1.11 **Fuentes-Hernandez, C.**, "Non-edible Organics: Sustainability in the Information Age", XV Escuela de Optica Moderna y la VI Escuela de Biofotonica, Tonantzintla, Puebla, Mexico, May 6<sup>th</sup>, 2015.
- D1.12 **Fuentes-Hernandez, C.**, "Organic Solar Cells in the year of light: Basic concepts, opportunities and challenges", XV Escuela de Optica Moderna y la VI Escuela de Biofotonica, Tonantzintla, Puebla, May 7<sup>th</sup>, 2015.
- D1.13 **Fuentes-Hernandez, C.**, "From portable optoelectronics, to wearable optoelectronics and beyond", XV Escuela de Optica Moderna y la VI Escuela de Biofotonica, Tonantzintla, Puebla, May 7<sup>th</sup>, 2015.
- D1.14 **Fuentes-Hernandez, C.** "Organic Light Emitting Diodes at COPE". BJB Electric Visit at Institute for Electronics and Nanotechnology, GA Tech, August 10, 2015.

- D1.15 **Fuentes-Hernandez, C.**, Kippelen, B., Zhou, Y., Shim, J., Dindar, A., Khan, T.M. "Organic Photovoltaics: The New Frontier", Photovoltaic Module Assembly-Materials, Processes and Reliability Workshop, April 17<sup>th</sup>, 2015.
- D1.16 **Fuentes-Hernandez, C.** "Printed Electronics". P3 Nanovisit at Institute for Paper Science and Technology, GA Tech, Atlanta, GA, January 15, 2015.
- D1.17 **Fuentes-Hernandez, C.**, Hwang, D. K., Yun, M., Park, J., Choi, S., Dindar, A., and Kippelen, B., "Stability and reliability of top-gate organic field-effect transistors using bilayer gate dielectrics", E-MRS Spring 2014, Lille, France, June 29<sup>th</sup>, 2014.
- D1.18 **Fuentes-Hernandez, C.**, Zhou, Y., Khan, T.M., Shim, J.W., Liu, J.-C., Dindar, A., Youngblood, J.P., Moon, R.P. and Kippelen, B., "Towards sustainable all-plastic solar cells by additive film transfer lamination methods," 247<sup>th</sup> ACS National Meeting and Exposition, Dallas, Texas, USA, March 18<sup>th</sup>, 2014.
- D1.19 **Fuentes-Hernandez, C.**, Zhou, Y., Khan, T.M., Shim, J.W., Dindar, A., Marder, S.R., Bredas, J.-L., Graham, S., Kahn, A., and Kippelen, B., "Polyethylenimine-modified electron-collecting electrodes in organic photovoltaics," 247<sup>th</sup> ACS National Meeting and Exposition, Dallas, Texas, USA, March 18<sup>th</sup>, 2014.
- D1.20 **Fuentes Hernandez, C.**, "Towards sustainable printed electronics," GA Tech's Institute for Materials Symposium, Atlanta, GA, USA, February 21<sup>th</sup>, 2014.
- D1.21 **Fuentes-Hernandez, C.**, Kippelen, B. "Atomic layer deposition and hybrid interfaces in flexible printed electronics" MRS Fall, Boston, MA, December 3<sup>rd</sup>, 2014.
- D1.22 **Fuentes Hernandez, C.**, "Organic electronics on cellulose nanocrystals films," Workshop: Innovation in Lignocellulosic Materials, Atlanta, GA, December 6<sup>th</sup>, 2013.
- D1.23 **Fuentes-Hernandez, C.**, Zhou, Y., Khan, T.M., Shim, J.W., Dindar, A., Marder, S.R., Bredas, J.-L., Graham, S., Kahn, A., and Kippelen, B., "Interface engineering for organic photovoltaics," 2013 International Workshop on Flexible & Printable Electronics, Jeonju, Republic of Korea, November 21<sup>st</sup>, 2013.
- D1.24 **Fuentes Hernandez, C.**, "Interface Engineering for Organic Photovoltaics," Korean Advanced Institute of Technology, Daejeon, Republic of Korea, November 19<sup>th</sup>, 2013.
- D1.25 **Fuentes Hernandez, C.**, "Improved Electrode-Organic Semiconductor Interfaces for Organic Electronics," Korean Institute of Technology, Seoul, Republic of Korea, November 18<sup>th</sup>, 2013.
- D1.26 **Fuentes Hernandez, C.**, "Manipulating Light: From Design to Application," GA Tech, February 19<sup>th</sup>, 2013.
- D1.27 **Fuentes-Hernandez, C.** "Stability and reliability of organic field-effect transistors," Printed Electronics 2012, paper, Berlin, Germany, March 3<sup>rd</sup>, 2012.
- D1.28 **Fuentes-Hernandez, C.** "Interface engineering in organic photovoltaics: towards all-polymeric solar cells," Smart Coatings 2012, paper, Orlando, FL, February 22<sup>nd</sup>, 2012.
- D1.29 **Fuentes-Hernandez, C.**, Kippelen B. "Interface engineering in organic photovoltaics: towards all-polymeric solar cells," AMI's Plastics in Photovoltaics, paper, Philadelphia, September 21<sup>st</sup>, 2011.
- D1.30 **Fuentes-Hernandez, C.**, Kippelen, B., "Controlling interfaces in organic photovoltaics: towards all-polymeric solar cells," Organic Photovoltaic 2011, paper, Philadelphia, September 20<sup>th</sup>, 2011.
- D1.31 **Fuentes-Hernandez, C.** "Interfaces in organic photovoltaics," 2011 Glass and Optical Materials Division Annual Meeting, Savannah, GA, May 18<sup>th</sup>, 2011.
- D1.32 **Fuentes-Hernandez, C.** "Research activities in printed electronics in the Kippelen group," COPE Open House, Atlanta, GA, November 4<sup>th</sup>, 2010.
- D1.33 **Fuentes-Hernandez, C.** "A Flexible Approach for a new generation of flexible electronics and photonic devices," FACE Workshop, Atlanta, GA, October 25<sup>th</sup>, 2010.
- D1.34 **Fuentes-Hernandez, C.** "Metal-dielectric multilayer structures and their applications in nonlinear optics," 14<sup>th</sup> International Conference on Laser Optics (LO-2010), St. Petersburg, Russia, July 1<sup>st</sup>, 2010.
- D1.35 **Fuentes-Hernandez, C.** "Organic solar cells and flexible electronics for multifunctional systems," Multifunctional Photovoltaic Systems Workshop, INTEL, Santa Clara, February 9<sup>th</sup>, 2010.

- D1.36 **Fuentes-Hernandez, C.** "Linear and nonlinear optical properties of highly transmissive one-dimensional metal-organic photonic band gap structures," SPIE Optics and Photonics, Conference 7049-24, San Diego, CA, August 14<sup>th</sup>, 2008.
- D1.37 **Fuentes-Hernandez, C.** "Polímeros fotorefractivos," "Frontiers in Physics" series seminar, Center of Physical Sciences, Cuernavaca, Morelos, México, December 2005.
- D1.38 **Fuentes-Hernandez, C.** "Rumbo a la Holografía Dinámica a Frecuencias de Video con Polímeros Fotorefractivos," Center of Optical Research, A.C., León, Guanajuato, México, December 2005.
- D1.39 **Fuentes-Hernandez, C.** "Perspectivas para el desarrollo de tecnologías ópticas con materiales orgánicos," Center of Graduate Naval Studies, Ciudad de México, Distrito Federal, México, December 2005.
- D1.40 **Fuentes-Hernandez, C.** "Photorefractive polymers sensitized by two-photon absorption," OSA annual meeting, Long Beach, California, October 15<sup>th</sup>, 2001.
- D1.41 **Fuentes-Hernandez, C.** "Optimization of photorefractive polymers doped with styrene-based chromophores," Twenty second Annual Workshop, Industrial Affiliates in Optical Sciences, Tucson, Arizona, February 2001.

## D2. Contributed presentations

- D2.1 **Fuentes-Hernandez, C.**, Chou, W.-F., Jia, X., Inman, J., Hertel, N., Kippelen, B. "High-performance organic optoelectronics for large-area radiation detectors with low radiation damage." Presented at SPIE Optics and Photonics, San Diego, CA, August 20<sup>th</sup>, 2018
- D2.2 **Fuentes-Hernandez, C.**, Chou, W.-F., Carek, A., Inan, O., Kippelen, B. "Low-Power Wearable Sensors Enabled by Large-Area Flexible Photodiodes." 2018Flex, MemS & Sensors Technical Congress, Monterey, CA, February 14<sup>th</sup>, 2018.
- D2.3 **Fuentes-Hernandez, C.** "Stable White Organic Light Emitting Diodes Enabled by New Material with Reduced Excited-State Lifetimes." 2018 U.S. Department of Energy Solid-State Lightning R&D Workshop, Nashville, TN, January 30<sup>th</sup>, 2018
- D2.4 Kippelen, B., Gaj, M. P., Choi, S., **Fuentes-Hernandez, C.**, Zhang, Y., Barlow, S., Marder, S.R., Wei, A. and Voit, W. "Recent advances in the science and engineering of organic light-emitting diodes." presented at SPIE Optics and Photonics, San Diego, August 28<sup>th</sup>, 2016.
- D2.5 Kippelen, B., Wang C.-Y., **Fuentes-Hernandez, C.**, Yun, M. Singh, A.K., Dindar, A., Choi, S. and Graham, S. "Highly stable organic field-effect transistors with engineered gate dielectrics." presented at SPIE Optics and Photonics, San Diego, August 28<sup>th</sup>, 2016.
- D2.6 Kolesov, V.A., **Fuentes-Hernandez, C.**, Chou, W.-F., Aizawa, N., Larrain, F.A., Wang, M., Perrotta, A., Choi, S., Graham, Marder, S.R. and Kippelen, B. "Organic Photovoltaic Devices with a Single-Layer Geometry." presented at SPIE Optics and Photonics, San Diego, August 29<sup>th</sup>, 2016.
- D2.7 Kippelen, B., Kolesov, V.A., **Fuentes-Hernandez, C.**, Aizawa, N., Larrain, F.A., Chou, W.-F., Perrotta, A., and Graham, S. "Organic Photovoltaic Devices with a Single-Layer Geometry." ACS Annual Meeting, Philadelphia, PA, August 23<sup>rd</sup>, 2016.
- D2.8 Wang, C.-Y., **Fuentes-Hernandez, C.**, Yun, M., Singh, A., Dindar, A., Choi, S., Graham, S. and Kippelen, B. "Highly stable organic field-effect transistors with bilayer gate dielectric materials comprised of a perfluorinated polymer and a metal-oxide nanolaminate." 58<sup>th</sup> Electronic Material Conference, University of Delaware, Newark, DE, June 22<sup>nd</sup>, 2016.
- D2.9 **Fuentes-Hernandez, C.**, Kahn, T.M., Stooksbury, J., Hertel, N.E. Kippelen, B., "Thin-Film Organic Detectors for Ionizing Radiation" University & Industry Technical Interchange (UITI) Program & Technical Review Meeting, Raleigh, NC June 7 - 8, 2016.
- D2.10 **Fuentes-Hernandez, C.**, Khan, T.M., Diniz, L., Stooksbury, J., Hertel N.E. and Kippelen, B. "Thin-film large-area organic detectors for ionizing radiation," 2016 IEEE Symposium on Radiation Measurements and Applications, University of California Berkeley, Berkeley, CA, May 22-26, 2016.
- D2.11 Wang, C.Y., **Fuentes-Hernandez, C.**, Zhou Y., Najafabadi, E., Liu, J.-C., Khan, T.M., Sangmoo, C., Youngblood, J.P., Moon, R.J., Kippelen, B., "Printed electronic devices on nanocellulose substrates: towards recyclable electronics" 2016 Flex Conference Monterey California, March 3<sup>rd</sup>, 2016.
- D2.12 Kahn, T.M., **Fuentes-Hernandez, C.**, Kippelen, B., "Solution-Processed Organic Photodetectors with High Detectivity" 2016 Flex Conference Monterey California, March 3<sup>rd</sup>, 2016.

- D2.13 Kippelen, B., Khan, T.M., Kolesov, V., Larrain, Chou, W.-F. and **Fuentes-Hernandez, C.** "Organic solar cells with simplified device architecture" SPIE Photonics West, San Francisco, CA, February 15<sup>th</sup>, 2016.
- D2.14 Singh, A.K., Wang, C.-Y., Kim, H., Gaj, M., **Fuentes-Hernandez, C.**, Kippelen, B., Graham, S. "Hybrid Barrier Films for Thin-film Photovoltaics" Bay Area Photovoltaic Consortium Meeting, October 19-20, 2015.
- D2.15 Kippelen, B. Gaj, M.P., **Fuentes-Hernandez, C.**, Zhang, Y., Marder, S.R., Najafabadi, E., Zhou, Y.H., Knauer, K.A., Wei, A., Voit, W. "Next Generation Organic Light-emitting Materials and Devices", SPIE Optics and Photonics, August 9-13, 2015.
- D2.16 Wang, C.Y., **Fuentes-Hernandez, C.**, Dindar, A., Sangmoo, C., Liu J.-C., Youngblood, J.P., Moon, R.J., Kippelen, B., "Stable of Top-Gate Organic Field-Effect Transistors on Cellulose Nanocrystal Substrates" 2015 TAPPI International Conference on Nanotechnology for Renewable Materials, June 22<sup>nd</sup> – 25<sup>th</sup>, Atlanta, Georgia, 2015.
- D2.17 **Fuentes-Hernandez, C.**, Kahn, T.M., Stooksbury, J., Hertel, N.E. Kippelen, B., "Thin-Film Large-area Organic Detectors for Ionizing Radiation" University & Industry Technical Interchange (UITI) Program & Technical Review Meeting, Ann Arbor, Michigan June 2 - 4, 2015.
- D2.18 Zhou, Y., **Fuentes-Hernandez, C.**, Khan, T.M., Liu, C.-Y., Hsu, J., Shim, J.W., Dindar, A., Youngblood, J.P., Moon, R.P. and Kippelen, B. "*Engineering cellulose nanomaterial substrates for flexible electronics*," 61<sup>st</sup> Annual AVS International Symposium and Exhibition (AVS 2014), Baltimore, MA, Nov. 9-14 2014.
- D2.19 Zhou, Y., Khan, T.M., Shim, J.W., Dindar, A., **Fuentes-Hernandez, C.** and Kippelen, B., "All-plastic organic photovoltaic cells with a photovoltaic dynamic range of five orders of magnitude," presented at SPIE Optics and Photonics, San Diego, CA, Aug. 17-21, 2014.
- D2.20 Yun, M., **Fuentes-Hernandez, C.**, Sharma, A., Hwang, D.K., Dindar, A., Singh, S., Choi, S., and Kippelen, B. "Stable organic-based label-free chemical and biological sensors for aqueous environments," presented at SPIE Optics and Photonics, San Diego, CA, Aug. 17-21, 2014.
- D2.21 Khan, T. M., Zhou, Y., Dindar, A., Shim, J.W., **Fuentes-Hernandez, C.**, and Kippelen, B. "Organic photovoltaic cells with stable top metal electrodes modified with polyethylenimine", presented at SPIE Optics and Photonics, San Diego, CA, Aug. 17-21, 2014.
- D2.22 Dindar, A., Fenoll, M., **Fuentes-Hernandez, C.**, Khan, T.M., Giordano, A.J., Zhang, J., Marder, S.R., and Kippelen, B., "Printed Organic Field Effect Transistors with Patterned Polyethylenimine Layers" presented at SPIE Optics and Photonics, San Diego, CA, Aug. 17-21, 2014.
- D2.23 **Fuentes-Hernandez, C.**, Hwang, D. K., Yun, M., Park, J., Choi, S., Dindar, A., and Kippelen, B., "Stability and reliability of top-gate organic field-effect transistors using bilayer gate dielectrics", E-MRS Spring 2014, Lille, France, June 29<sup>th</sup>, 2014.
- D2.24 **Fuentes-Hernandez, C.**, Zhou, Y., Khan, T.M., Shim, J.W., Liu, J.-C., Dindar, A., Youngblood, J.P., Moon, R.P. and Kippelen, B., "Towards sustainable all-plastic solar cells by additive film transfer lamination methods," 247<sup>th</sup> ACS National Meeting and Exposition, Dallas, Texas, USA, March 18<sup>th</sup>, 2014.
- D2.25 **Fuentes-Hernandez, C.**, Zhou, Y., Khan, T.M., Shim, J.W., Dindar, A., Marder, S.R., Bredas, J.-L., Graham, S., Kahn, A., and Kippelen, B., "Polyethylenimine-modified electron-collecting electrodes in organic photovoltaics," 247<sup>th</sup> ACS National Meeting and Exposition, Dallas, Texas, USA, March 18<sup>th</sup>, 2014.
- D2.26 **Fuentes-Hernandez, C.**, Zhou, Y., Khan, T.M., Shim, J.W., Dindar, A., Marder, S.R., Bredas, J.-L., Graham, S., Kahn, A., and Kippelen, B., "Interface engineering for organic photovoltaics," 2013 International Workshop on Flexible & Printable Electronics, Jeonju, Republic of Korea, November 21<sup>th</sup>, 2013.
- D2.27 Zhou, Y. **Fuentes-Hernandez, C.**, Shim, J., Meyer, J., Giordano, A.J., Li, H., Winget, P., Papadopoulos, T., Cheun, H., Kim, J., Fenoll, M., Dindar, A., Haske, W., Najafabadi, E., Khan, T.M., Sojoudi, H., Barlow, S., Graham, S., Bredas, J.-L., Marder, S.R., Kahn, A., Kippelen, B. "Polymer surface modification to produce low-work function electrodes for single- and multi-junction organic solar cells," SPIE Organic Photonics + Electronics, Paper 8830-9, San Diego, CA, August 28, 2013.
- D2.28 Kippelen, B., Knauer, K.A., Najafabadi, E., Haske, W., Gaj, M.P., Davis, K.C., **Fuentes-Hernandez, C.**, Carrasco, U., "Inverted top-emitting organic light-emitting diodes with high current efficacy", SPIE Organic Photonics + Electronics, Paper 8829-21, San Diego, CA, August 28<sup>th</sup>, 2013.



- D2.29 Knauer, K.A., Najafabadi, E., Haske, W., Gaj, M.P., Davis, K.C., **Fuentes-Hernandez, C.**, Carrasco, U., Kippelen, B., "Optimization of stacked inverted top-emitting green electrophosphorescent organic light-emitting diodes", SPIE Organic Photonics + Electronics, Paper 8829-59, San Diego, CA, August 28<sup>th</sup>, 2013.
- D2.30 Hsu, J., **Fuentes-Hernandez, C.**, Ernst, A.R., Kippelen, B., "Noble metal nonlinear optical mirrors with adjustable spectral and angular bandwidths for all-optical controls at visible wavelengths", SPIE Organic Photonics + Electronics, Paper 8808-48, San Diego, CA, August 28<sup>th</sup>, 2013.
- D2.31 Kathaperumal, M., Kim, Y., Smith, O.N., Dindar, A., **Fuentes-Hernandez, C.**, Hwang, D.-K., Pan, M.-J., Kippelen, B., Perry, J., "Dielectric Bilayer Films Comprising Polar Cyanolated Silica Sol-Gel and Nanoscale Blocking Layer for Energy Storage Applications", Bulletin of the American Physical Society, vol. pp. 2013.
- D2.32 Kim, Y., Shim, J.W., **Fuentes-Hernandez, C.**, Cowan, S., Kumar, M., Olson, D., Berry, J.J., Packard, C.E., Kippelen, B., and Graham, S., "Mechanical adhesion in inverted organic photovoltaic devices," presented at MRS Spring, San Francisco, CA, April 1-5, 2013.
- D2.33 Kim, Y., Bulusu, A., Shim, J.W., **Fuentes-Hernandez, C.**, Giordano, A.J., C., Cowan, S., Kumar, M., Olson, D., Berry, J.J., Packard, C.E., Kippelen, B., Marder, S.R., Dauskardt, R., and Graham, S., "Interfacial adhesion in inverted organic photovoltaics," International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems, Burlingame, CA, Jun. 16-18, 2013.
- D2.34 Kippelen, B., Zhou, Y., **Fuentes-Hernandez, C.**, Shim, J.W., Khan, T.M., and Dindar, A., "Solar cells and modules fabricated completely from solution-processing of polymer layers," 11<sup>th</sup> International Symposium on Functional Pi-Electron Systems, Arcachon, France, Jun. 2-7, 2013.
- D2.35 Ensley, T.R., Hu, H., Hales, J.M., Kim, H., Perry, J.W., Ernst, A.R., **Fuentes-Hernandez, C.**, Dindar, A., Kippelen, B., Hagan, D.J., Van Stryland, E.W., "Nonlinear characterization of thin films by the dual-arm Z-scan method," FiO 2013/LS XXIX, Orlando, FL October 6-10, 2013.
- D2.36 Hsu, J., **Fuentes-Hernandez, C.**, Ernst, A.R., Kippelen, B., "Noble metal nonlinear optical mirrors with adjustable spectral and angular bandwidths for all-optical controls at visible wavelengths", in, Optical Society of America, pp. CTu3E.8., San Jose, CA, 2013.
- D2.37 Ensley, T.R., Hu, H., Ernst, A.R., **Fuentes-Hernandez, C.**, Dindar, A., Kippelen, B., Hagan, D.J., Van Stryland, E.W., "Nonlinear Refraction Measurements of Thin Films by the Dual-arm Z-scan Method," in: B.C.S.K.M. Boulanger, W. Knox (Eds.), Optical Society of America, pp. NTu1B.4, 2013.
- D2.38 Kippelen, B., Zhou, Y., Potscavage, W. J., Cheun, H., **Fuentes-Hernandez, C.**, Mayer, J., Kahn, A., "Interface Science and Engineering of Organic Solar Cells" MRS Fall: Symposium H: Organic Photovoltaic Devices and Processing, paper H2.5, November 27<sup>th</sup>, 2011.
- D2.39 Haske, W., Kim, S.-J., Cai, D., Najafabadi, E., **Fuentes-Hernandez, C.**, Kippelen, B., Leroy, J., Zuniga, C., Zhang, Y., Scarpaci, A., Li, H., Zhu, L., Sears, J., Barlow, S., Bredas, J.-L., Marder, S. R., "Efficient Green and Blue Electrophosphorescent Light-Emitting Diodes using a Combination of Solution and Vacuum-Processed Materials "Renewable Energy and the Environment Congress, paper SDWC5 Austin, TX, November 2<sup>nd</sup>, 2011.
- D2.40 **Fuentes-Hernandez, C.**, Kippelen, B., "Controlling interfaces in organic photovoltaics: towards all-polymeric solar cells."Organic Photovoltaic 2011, paper, Philadelphia, September 20<sup>th</sup>, 2011.
- D2.41 **Fuentes-Hernandez, C.**, Kippelen, B., "Interface engineering in organic photovoltaics: towards all-polymeric solar cells."AMI's Plastics in Photovoltaics, paper, Philadelphia, September 21<sup>st</sup>, 2011.
- D2.42 **Fuentes-Hernandez, C.**, Hu, H., Ernst, A. R., Fishman, D. A., Hsu, J., Webster, S., Hagan, D. J., VanStryland, E. W., Kippelen, B., "The importance of nonlinear reflectance and transmittance measurements on the characterization of the nonlinear optical properties of metallic nanomaterials ", SPIE Optics and Photonics: Active Photonic Materials IV, pp.8095\_52, August 24<sup>th</sup>, 2011.
- D2.43 **Fuentes-Hernandez, C.**, Hsu, J., Owens, D. T., Ernst, A. R., Hales, J. M., Perry, J. W., Kippelen, B., "Amplification of the nonlinear optical response of metals in induced transmission filters", SPIE Optics and Photonics: Active Photonic Materials IV, pp.8095\_11, August 23<sup>rd</sup>, 2011.
- D2.44 Kippelen, B., Kim, S.-J., Cai, D., Haske, W., Najafabadi, E. M., **Fuentes-Hernandez, C.**, Leroy, J., Zuniga, C., Zhang, Y., Zhu, L., Sears, J. S., Barlow, S., Brédas, J. L., Marder, S. R., "Recent advances in materials for efficient green and blue electrophosphorescent light-emitting diodes", SPIE Optics and Photonics: Organic Light Emitting Materials and Devices XV, pp.8115\_02 (invited paper), August 21<sup>st</sup>, 2011.

- D2.45 Cheun, H., Berrigan, J. D., Zhou, Y. H., Fenoll, M., Shim, J. W., **Fuentes-Hernandez, C.**, Sandhage, K. H., Kippelen, B., "Characterization of bulk-heterojunction-inverted polymer solar cells probed by depth-profiling X-ray photoelectron spectroscopy", SPIE Optics and Photonics: Organic Photovoltaics XII, pp.8116\_28, August 24<sup>th</sup>, 2011.
- D2.46 Cheun, H., Shim, J., Li, H., Zhou, Y. H., Fang, Y., Cai, Y., **Fuentes-Hernandez, C.**, Sandhage, K. H., Bredas, J. L., Kippelen, B., "Al<sub>2</sub>O<sub>3</sub>: ZnO nanolaminates as electron-collecting electrode in inverted polymer solar cells", SPIE Optics and Photonics: Organic Photovoltaics XII, pp.8116\_83, August 22<sup>nd</sup>, 2011.
- D2.47 Zhou, Y. H., Shim, J., Cheun, H., Dindar, A., **Fuentes-Hernandez, C.**, Mayer, J., Kahn, A., Kippelen, B., "Inverted organic solar cells using a water-soluble polymer modified indium tin oxide as an electron-collecting electrode", SPIE Optics and Photonics: Organic Photovoltaics XII, pp.8116\_85 August 22<sup>nd</sup>, 2011.
- D2.48 Kippelen, B., Kim, J. B., Hwang, D. K., Tiwari, S. P., Potscavage Jr., W. P., **Fuentes-Hernandez, C.**, "Organic and hybrid thin-film transistors with novel architectures and high stability", SPIE Optics and Photonics: Organic Field-Effect Transistors X, pp.8117\_22 (Invited paper) August 23<sup>rd</sup>, 2011.
- D2.49 Kim, J. B., **Fuentes-Hernandez, C.**, Hwang, D. K., Tiwari, S. P., Potscavage Jr., W. P., Kippelen, B., "Vertically stacked complementary inverters with solution processed 6,13-bis(triisopropylsilylethynyl) pentacene and [6,6]-phenyl C<sub>61</sub> butyric acid methyl ester thin-film transistors", SPIE Optics and Photonics, Organic Field-Effect Transistors X, pp.8117\_37, August 23<sup>rd</sup>, 2011.
- D2.50 Kim, J. B., **Fuentes-Hernandez, C.**, Hwang, D. K., Cheun, H., Tiwari, S. P., Potscavage Jr., W. P., Kippelen, B., "High-gain depletion-load inverters using electrically stable amorphous InGaZnO thin-film transistors", SPIE Optics and Photonics: Organic Field-Effect Transistors X, pp.8117\_42, August 23<sup>rd</sup>, 2011.
- D2.51 Hwang, D. K., **Fuentes-Hernandez, C.**, Kim, J. B., Potscavage Jr., W. P., Kippelen, B., "A compensation mechanism for flexible and electrically stable solution-processed organic field-effect transistors", Electronic Materials Conference: Organic, Printed and Flexible Electronics, pp.E3, June 22<sup>nd</sup>, 2011.
- D2.52 Kim, J. B., **Fuentes-Hernandez, C.**, Hwang, D. K., Cheun, H., Tiwari, S. P., Potscavage Jr., W. P., Kippelen, B., "Electrically stable amorphous InGaZnO thin-film transistors and high-gain inverters", Electronic Materials Conference: Oxide Semiconductor Devices, pp. P8, June 23<sup>rd</sup>, 2011.
- D2.53 Kim, J. B., **Fuentes-Hernandez, C.**, Hwang, D. K., Potscavage Jr., W. P., Kippelen, B., "Top-gate hybrid complementary inverters using pentacene and amorphous InGaZnO channel thin-film transistors with high operational stability", MRS Spring: Hybrid Interfaces and Devices, pp.CC8.7, April 28<sup>th</sup>, 2011.
- D2.54 Hwang, D. K., **Fuentes-Hernandez, C.**, Kim, J. B., Potscavage Jr., W. P., Kippelen, B., "Organic field-effect transistors with long-term operational stability through the use of a compensating mechanism in bi-layer gate dielectrics", MRS Spring: Hybrid Interfaces and Devices, pp.CC8.9, April 28<sup>th</sup>, 2011.
- D2.55 **Fuentes-Hernandez, C.** "Metal-dielectric multilayer structures and their applications in nonlinear optics," 14th International Conference on Laser Optics (LO-2010), St. Petersburg, Russia, July 1<sup>st</sup>, 2010.
- D2.56 Hwang, D. K., **Fuentes-Hernandez, C.**, Kim, J. B., Potscavage Jr., W. P., Kim, S.-J., Kippelen, B., "Small Molecule-polymer Blend Organic Field Effect Transistors with Long-term Environmental and Operational Stability Using Fluoropolymer/Oxide Bi-layer Top Gate Dielectric", MRS Fall: Low-Temperature-Processed Thin-Film Transistors, pp.F2.9, November 29<sup>th</sup>, 2010.
- D2.57 Kim, J. B., **Fuentes-Hernandez, C.**, Hwang, D. K., Potscavage Jr., W. P., Kippelen, B., "Vertically stacked complementary inverters using pentacene and amorphous InGaZnO tin-film transistors", MRS Spring: Hybrid Interfaces and Devices, pp.F9.5, December 2<sup>nd</sup>, 2010.
- D2.58 Kim, J. B., **Fuentes-Hernandez, C.**, Kim, S.-J., Choi, S., Kippelen, B., "High Gain Complementary Inverter Using Pentacene and Amorphous InGaZnO Channel Thin-film Transistors on Flexible Polyethersulfone Substrates", MRS Fall: Organic Materials for Printable Thin-Film Electronic Devices, pp.D7.17, December 2<sup>nd</sup>, 2009.
- D2.59 Kim, J. B., **Fuentes-Hernandez, C.**, Kim, S.-J., Potscavage Jr, W. J., Choi, S., Kippelen, B., "High-performance Ambipolar Thin-film Transistors and Circuits with Co-planar Geometry", MRS Fall: Organic Materials for Printable Thin-Film Electronic Devices, pp.D9.3, December 3<sup>rd</sup>, 2009.

- D2.60 **Fuentes-Hernandez, C.** “Avances en la estabilidad y sensibilidad de polimeros fotorefractivos” (Advances in stability and sensitivity of photorefractive polymers), XLVI Congreso Nacional de Fisica (National Congress on Physics, Mexican Society of Physics), Merida, Yucatan, Mexico, October 27-31, 2003.
- D2.61 **Fuentes-Hernandez, C.** “Photorefractive polymers sensitized by two-photon absorption,” OSA annual meeting, Long Beach, California, October 15<sup>th</sup>, 2001.

## E. Grants and Contracts

Dr. Fuentes-Hernandez has actively participated in building research teams, contributing novel ideas, writing proposals and ultimately securing funds to pay his salary and conducting research. He has managed the technical aspects, as well as administrative aspects of many programs, writing reports, organizing review meetings and overseeing spending on materials and supplies for many programs. His contribution and roles for each grant are described below.

### E1. As Principal Investigator

- E1.1 *Computational sensors for improved prediction of aggressive behavior in youth with autism* (Fuentes-Hernandez, PI, Goodwin co-PI) \$50,000 Tier 1 proposal submitted to Northeastern University 01/15/2022 from 07/01/2022 to 09/30/2023.
- E1.2 *EFRI BRAID Preliminary Proposal: Decentralized sensor and actuator networks inspired in cephalopod neuroanatomy* (Fuentes-Hernandez, PI, Deravi, co-PI, Wang, co-PI. Split: 0.4:0.3:0.3) \$2,000,000 Submitted to NSF 12/16/2021 from 08/01/2022 to 07/31/2026.
- E1.3 *Energy-efficient and sustainable sun-like solid-state lighting for improved human health* (Fuentes-Hernandez, DuBose)  
Granted \$74,945.00 USD by Georgia Tech from 07/01/2020 to 06/31/2021. Wrote proposal.
- E1.4 *Optically-gated Camera* (Fuentes-Hernandez, Kippelen)  
Granted \$49,869.00 USD by Georgia Research Alliance Ventures from 08/2014 to 07/2015. Wrote proposal. Contributed conducting customer discovery efforts, assisted conferences, interviewed doctors at hospitals and universities. Directed and conducted experimental work needed for concept validation by advising student. Managed budget and wrote reports.
- E1.5 *I-Corps: Ultrafast All-optical Shutter Technology* (Fuentes-Hernandez, Kippelen, Hsu)  
Granted \$50,000.00 USD by National Science Foundation from 07/2013-02/2014. Acted as an entrepreneurial lead for a team funded under this program. Wrote proposal submitted to NSF. Acted as an entrepreneurial lead for a team funded under this program. Managed budget.

### E2. As Co-Principal Investigator

- E4.1 *Programmable Organic Electronic Devices* (Kippelen, Fuentes-Hernandez)  
Granted \$100,000.00 USD by BECSIS LLC/ SOUTH ELGIN, IL from 01/2021 to 12/2021. Wrote proposal and held multiple meetings with company representatives.

### E3. As Senior Personnel or Contributor

- E3.1 *Consortium for Enabling Technologies and Innovations* (Consortium led by Georgia Tech, A. Erickson (PI), Kippelen Co-PI) Granted \$877,023 for Kippelen by National Nuclear Security Administration (NNSA) from 3/2019 – 2/2024.  
Co-authored proposal, defined technical approach, wrote section describing the development of organic/hybrid photodetectors with band-gap engineered superlattices to detect, identify and characterize special nuclear materials of clandestine activities. Write reports and serves as point of contact for the group.

- E3.2 *Robust Spectroscopic Organic Scintillators for Detection of RN Threats* (Kippelen, Hertel, Shannon)  
Granted \$ 1,050,000.00 USD by the Defense Threat Reduction Agency (DTRA) from 01/2018 to 12/2020.  
Co-authored proposal, defined technical approach, coordinated team efforts, wrote and assembled proposal. Write reports and serves as point of contact for the group.
- E3.3 *Stable White Organic Light-Emitting Diodes Enabled by New Materials with Reduced Excited-State Lifetimes.* (Kippelen, Marder, Bredas)  
Granted \$ 1,120,000.00 USD by Department of Energy. Office of Energy Efficiency and Renewable Energy (EERE) from 09/2017 to 08/2019.  
Co-authored proposal, defined technical approach, assembled team, and assembled proposal to secure funding. Assisted in managing research program including spending. Advised students, directed work. Assisted periodic review meetings. Wrote reports.
- E3.4 *GRO: Carbazole-Oxadiazole Delayed Fluorescence Materials* (Marder, Kippelen)  
Granted \$150, 000.00 USD by Samsung-GRO from 07/2016 to 06/2017.  
Assisted with editing proposal and defining tasks. Contributed by managing task regarding device fabrication. Advised student and directed work. Managed spending for this project. Contributed by advising student, directing work. Assisted periodic review meetings. Prepared reports.
- E3.5 *Printed Electronics on Advanced Cellulosic Nanomaterials for Smart Packaging* (Kippelen)  
Granted \$63, 269.00 USD by United States Department of Agriculture (USDA) from 07/2016 to 06/2018. Contributed in writing and editing the proposal. Contributed by advising student, directing work. Assisted periodic review meetings. Prepared reports.
- E3.6 *Organic light-emitting diodes with 100% internal quantum efficiency based on noble-metal-free hosts and emitters* (Marder, Kippelen)  
Granted \$100, 000.00 USD by Mitsubishi Chemical from 04/2016 to 03/2017  
Contributed by advising student, directing work. Assisted periodic review meetings. Prepared reports. Managed spending on materials and supplies for this project. These efforts led to a one-year extension of this program. Wrote sections of proposal renewal. Contributed by advising student, directing work. Assisted periodic review meetings. Prepared reports.
- E3.7 *Studies of applications of carbon and metal nanomaterials in printed optoelectronic devices* (Kippelen)  
Granted \$10,000.00 USD by Sigma Aldrich from 03/2016 to 02/2016.  
Contributed in defining materials and areas of collaboration and in writing and editing the proposal. Contributed by leading efforts on this project, from material selection, to fabrication of electrodes and devices and data analysis. Oversaw spending for this project. Wrote reports.
- E3.8 *A new substrate platform for soft wearable printed electronics* (Kippelen)  
Granted \$200,000.00 USD by Samsung GRO from 7/2015 to 12/2017  
Contributed with discussions on the technical approach and in editing the proposal. Contributed by advising student and conducting some experiments regarding deformation of OLEDs on shape memory polymers. Edited midterm report and wrote final report. Manuscript in preparation. Managed spending for this project.
- E3.9 *High detectivity organic photodetectors with ultrabroadband spectral response* (Kippelen)  
Granted \$ 488,760.00 USD by Air Force Office of Scientific Research from 4/2016 to 3/2019  
Co-authored proposal. Defined approach, tasks and equipment needed to extend spectral detectivity of organic photodetectors into the infrared and wrote significant portions of the proposal. Contributed by advising students, directing work. Developed a novel, computer-controlled characterization setup with low electrical noise and for the characterization of the spectral characteristics of photodetectors from the visible to the infrared. Conducted experiments. Invention disclosure and manuscript in preparation. Managed spending for this project including purchase of equipment. Wrote reports.
- E3.10 *Organic photovoltaic materials and devices with improved understanding and performance* (Kippelen, Marder)  
Granted \$420,000.00 USD by Office of Naval Research from 01/2014 - 12/2017  
Contributed in defining technical approach, tasks and writing sections of the proposal related to evaluation of photovoltaic devices. Contributed by advising student, directing work. Prepared reports.

- E3.11 *Consortium for nonproliferation enabling capabilities* (Consortium led by North Carolina State University, Gardner, PI, Hertel, Kippelen Co-PI GA Tech)  
Granted \$625,000.00 USD by National Nuclear Security Administration (NNSA) from 09/2014-08/2019  
Wrote sections for the technical rationale of the proposal regarding use of organic photodetectors and scintillators for nuclear detection. Contributed by advising students, directing work. Developed novel, computer-controlled characterization setup for the characterization of organic photodetectors for radiation detection. Developed novel organic scintillators. Assisted review meetings and conferences. Manuscript preparation. Managed spending on materials and supplies for this project. Wrote reports.
- E3.12 *Request for additional funding from CNEC* (Hertel, PI, Kippelen, Co-PI)  
Granted \$ 600,000.00 USD by National Nuclear Security Administration (NNSA) from 01/2018 to 12/2019  
Conceived idea of using organic thin-film transistors as real-time dosimeters and wrote proposal and reports.
- E3.13 *Novel organic field-effect transistor-based pressure sensors* (Kippelen)  
Granted \$150,000.00 USD by Next Input from 01/2013 to 01/2014  
Contributed in defining technical approach, tasks and writing proposal. Contributed directing work by advising postdoctoral fellow and conducting experimental work and data analysis. Prepared annual reports. Managed spending on materials and supplies for this project.
- E3.14 *Tailoring Electrostatic Interactions to produce hybrid barrier films for photovoltaics- Bay Area Photovoltaic Consortium* (Kippelen, Graham)  
Granted \$360,000.00 USD by Department of Energy from 10/2012 to 9/2015  
Contributed in defining technical approach, tasks and writing sections of the proposal. Contributed directing work by advising students from our group and from the Graham group. Conducted experimental work and data analysis. Developed Matlab code to conduct image analysis. Prepared reports. Assisted review meetings. Published peer-reviewed papers filed full provisional patent. Managed spending on materials and supplies for this project. Contributed in writing some reports
- E3.15 *Nanocellulose for flexible electronics* (Kippelen)  
Granted \$200,000.00 USD by US Department of Agriculture/Forest Service from 10/2012 to 09/2014  
Contributed in defining technical approach, tasks and writing sections of the proposal. Contributed directing work by advising students. Conducted experimental work and data analysis. Published peer-reviewed papers, assisted conferences and filed a provisional patent. Managed spending on materials and supplies for this project. Wrote reports.
- E3.16 *Printed organic photovoltaic modules with high total area efficiency* (Kippelen)  
Granted \$200,000.00 USD by Office of Naval Research from 04/2012 to 03/2013  
Contributed in defining technical rationale, approach and tasks and writing significant sections of the proposal. Contributed directing work by advising student. Conducted experimental work and data analysis. Published peer-reviewed papers, assisted conferences and filed a provisional patent. Managed spending on materials and supplies for this project. Contributed in writing some reports.
- E3.17 *Nanocomposite Materials for High Energy Density Capacitors* (Perry, Kippelen)  
Granted \$611,612.00 USD by ONR from 05/2010 - 06/2014  
Wrote portions of the proposal related to use of ALD as injection blocking layers. Lead efforts developing injection blocking layers. Advised students and postdoc in the Perry group on the areas of atomic layer deposition, self-assembled monolayers and spectroscopic ellipsometry. Published peer-reviewed paper.
- E3.18 *Organic solar cells based on metal-organic compounds* (Kippelen, Marder)  
Granted \$780,000.00 USD by NAVY/OFC of naval research 01/2011 to 01/2014  
Wrote portions of the proposal related to characterization of materials and devices. Contributed directing work by advising students. Conducted experimental work and data analysis. Published peer-reviewed papers. Prepared annual report Oversaw spending on materials and supplies for this project.
- E3.19 *Inverted hybrid light-emitting diodes with ZnO-based transparent cathodes and organic active layers* (Kippelen, Marder, Bredas)  
Granted \$150,000.00 USD by Solvay R&D(Industry) from 07/2010 to 09/2011

- Wrote portions of the proposal related to use of ZnO in organic light emitting diodes and background. Contributed by advising student and postdoc, directing work. Assisted periodic review meetings. Prepared reports.
- E3.20 *Acquisition of an ex-situ visible near-infrared phase modulated spectroscopic ellipsometer* (Kippelen)  
Granted \$ 141,355.00 USD by Department of Defense (AFOSR)  
Wrote proposal. Oversaw purchasing and installation of equipment. Regularly train students and visitors on the use equipment.
- E3.21 *New Materials for High Efficiency Organic Solar Cells and Integrated Modules* (Kippelen)  
Granted \$300,000.00 USD by ONR from 02/2010 to 05/2011  
Wrote portions of proposal related to OPV design and characterization. Supervised 1 PhD student. Metamaterial metal-dielectric photonic bandgap filters with high in-band transmittance and strong out-of-band rejection (Kippelen)  
Granted \$300,000.00 USD by AFOSR from 05/2009 to 02/2011  
Wrote most sections of proposal. Led efforts in developing metal-dielectric filters for out-of-band rejection. Supervised 1 PhD student. Attended review meetings. Published peer-reviewed papers.
- E3.22 *DARPA/MTO Supermolecular Photonics Engineering (MORPH) Phase III, High Speed Materials for Optical Signal Processing* (Perry, Marder, Kippelen).  
Granted \$107,800.00 USD by DARPA from 05/2008 to 06/2009  
Wrote portions of the proposal related to use of materials with strong third-harmonic generation properties on optical signal processing applications. Developed novel approaches to conduct optical processing using third harmonic generation in polymers. Attended review meetings. Published peer-reviewed papers including a review article.
- E3.23 *MURI: Engineered Multifunctional Nanophotonic Materials for Ultrafast Optical Switching* (Multi-PI effort led by VanStryland at University of Central Florida)  
Granted \$ 1,500,000.00 USD by ARL-ARO from 05/2006 – 08/2012  
Wrote approach of using metal-dielectric photonic bandgap structures for ultrafast optical switching. Led efforts in studying the nonlinear optical properties of noble metals and their use for the realization of nonlinear optical filters for ultrafast optical switching applications. Wrote progress reports. Supervised 1 postdoctoral fellow and 2 PhD students during the duration of these efforts. Attended review meetings. Published peer-reviewed papers. Filed a provisional patent.

#### **E4. Pending Proposals**

- Source: NSF  
Title: "NSF:EPMD: Photon-counting organic photodetectors " (*Federal*)  
(Fuentes-Hernandez PI, Kippelen, co-PI)  
Rate: \$470,000 (total) Period Covered: 2021 – 2023  
Percentage of time devoted to the project: TBD

#### **F. Societal and Policy Impacts**

- Served as expert witness on discussion panels of NSF-funded I-CORPs program 2013, 2014

#### **G. Press and media coverage**

Non-comprehensive list:

- "Organic photodiodes rival silicon devices", [PhysicsWorld](#), November 19<sup>th</sup>, 2020.
- "New organic photodiode can detect low light over large areas" [Materials Today](#), November 10<sup>th</sup>, 2020.
- "Organic photodiodes challenge silicon over wide areas", [Electronics Weekly](#), November 6<sup>th</sup>, 2020.

- “Large-area Flexible Organic Photodiodes Can Compete With Silicon Devices”, [Georgia Tech News Center](#), November 5<sup>th</sup>, 2020. Picked up by [TechXplore](#), and 5 others.
- “Large-Area Organic Photodiodes Offer Alternative to Silicon Devices”, [Photonics](#), November 5<sup>th</sup>, 2020.
- “Novel Solar Cells Arrive at International Space Station for Testing”, [Georgia Tech News Center](#), November 6<sup>th</sup>, 2019. Picked up by [TechXplore](#), [Technology.org](#), [Off Grid Energy Independence](#), [List Solar](#).
- “New Solar Cells to be Tested at International Space Station”, [Student Circuit](#), November 13<sup>th</sup>, 2019.
- “Nanostructured Gate Dielectric Boosts Stability of Organic Thin-Film Transistors” [Georgia Tech News Center](#), January 12<sup>th</sup>, 2018. Picked up by [Phys.org](#), [Technology.org](#), [Space Daily](#), [EurekaAlert!](#), [ChemEurope](#), LongRoom, ECN, Nanowerk, Science Newline, R&D.
- “Organic Thin-Film Transistors’ New Gate Dielectric Open Door for Future Electronics” [IEEE Spectrum](#), January 22<sup>nd</sup>, 2018.
- “New nanostructure offers gateway to organic thin-film transistors”, [Materials Today](#), January 25<sup>th</sup>, 2018.
- “Nanostructured Gate Helps Overcome Semiconductor Obstacles” [Controlled Environments](#) January 17<sup>th</sup> 2018.
- “Dielectric boosts stability of organic thin-film transistors”, [Electronics Specifier](#), January 15<sup>th</sup>, 2018.
- “Simple Processing Technique Could Cut Cost of Organic PV and Wearable Electronics” [Georgia Tech News Center](#), December 5<sup>th</sup>, 2016. Picked up by [Next Big Future](#), [Technology.org](#), [EurekaAlert!](#), [Plastemart](#), [Medical Design and Outsourcing](#), [Solar Daily](#).
- “Solution-based method for processing solar cells” [Materials Today](#), December 21<sup>st</sup>, 2016.
- “Researchers develop a simple processing technique that could cut the cost of organic photovoltaics” [Phys.org](#), December 5<sup>th</sup>, 2016.
- “Simple processing technique could cut cost of organic PV and wearable electronics ” [Materialsgate](#)
- “Game changer for organic solar cells” [The Current UC Santa Barbara](#), December 5<sup>th</sup>, 2016, Picked up by [EurekaAlert!](#), [Technology.org](#), [Chem Info](#), [Chem Europe](#).
- “Celulas solares de plastic sao produzidas a temperatura ambiente” [ZAP](#), January 9<sup>th</sup>, 2017.
- “New Type of Organic Solar Cells” [GIT Laboratory Journal](#), December 6<sup>th</sup>, 2016.
- “Solar Cells Processed at Room Temperature Could Cut Costs of Wearable Devices” [Photonics.com](#), December 6<sup>th</sup>, 2016.
- “Single layer Organic Polymer Solar Cells”, [Chemistry Views](#), December 6<sup>th</sup>, 2016 .
- “Trees Used to Create Recyclable, Efficient Solar Cell” [Georgia Tech News Center](#), March 25<sup>th</sup>, 2013. Picked up by [EurekaAlert!](#), [Physorg](#), [Science News Daily](#), [Environmental News Bits](#), [Photonics](#), [Ecozine](#), [EcoSeed](#), [PVMagazine](#).
- “Scientists Create Recyclable Solar Cells From Trees” [Forbes](#), March 26<sup>th</sup> 2013.
- “Nano From The Forest” [Chemical and Engineering News C&EN](#), June 30<sup>th</sup>, 2014.
- “Tracing paper boost for solar cells” [Chemistry world](#), January 19<sup>th</sup>, 2014.
- “Organic Solar Cells Build on Biodegradable, Recyclable Substrates” [Advanced Science News](#), April 16<sup>th</sup>, 2013.
- “Researchers develop recyclable solar cells from trees” [Arizona Energy](#), April 13<sup>th</sup>, 2014.
- “Georgia Tech researchers report advance in making recyclable organic solar cells” [Atlanta Business Chronicle](#), July 24<sup>th</sup>, 2014
- “These recyclable solar cells are made from trees” [Grist](#), March 27<sup>th</sup>, 2013.
- “Stable Electrodes for Improving Printed Electronics” [Georgia Tech News Center](#), April 19<sup>th</sup>, 2012. Picked up by [Phys.Org](#), [EurekaAlert!](#), [NewsWise](#), [R&D World](#), [Printed Electronics World](#)
- “Nanocoated stable electrodes for improving printed electronics”, [Nanowerk](#), April 19, 2012.
- “New Technique Creates First Plastic Solar Cell” [Forbes](#), April 25<sup>th</sup>, 2012.
- “Electrodes Printed By Solution Processing” [Chemical and Engineering News \(C&EN\)](#), April 23<sup>rd</sup>, 2012.
- “New transistor for plastic electronics exhibits the best of both worlds” [Georgia Tech News Center](#), January 27, 2011. Picked up by [Science Daily](#), [Phys.Org](#), [Nano Werk](#), [EurekaAlert!](#), [Nanotechnology Now](#), [Physics News](#), [Printed Electronics World](#)
- “Bilayer gate solves plastic transistor woes” [EE Times](#), February 01<sup>st</sup>, 2011.

- “Semitransparent ITO-Free Organic Photovoltaics” [Solar Novus Today](#), October 27<sup>th</sup>, 2010.

#### H. Other Professional Activities

- Consulting for Mr. William T. Vollmann (1988 Whiting Award-winning novelist) to write a chapter on solar energy 05/2017-07/2017

#### V. Education

##### I. Courses Taught

- EECE 2210: Electrical Engineering. Spring 2022
- Guest lecturer for:
  - CS 4801/8801 “Introduction to Computational Materials”, (prepared and delivered lecture on organic electronics) Spring 2020
  - ECE 3025 “Electromagnetics” (prepared and delivered lectures), Fall 2019
  - ECE 6540 “Organic Optoelectronics” (prepared and delivered lectures), Spring 2017, Spring 2018.
- Teaching Assistant for Graduate Level Courses
  - OPTI 513L Optical Shop Testing (set up labs and delivered lectures), 2004
  - OPTI 509 Optical Design and Instrumentation II (graded homework and held office hours for discussion), 2004.
- Teaching Assistant for Bachelor Level Courses (developed curricula, prepared and delivered lectures, assigned and graded homework):
  - Photography for Scientists (Fotografía científica), Universidad Nacional Autónoma de México, Fall 1998 and Spring 1999.
- Middle/High School Level Courses (prepared and delivered all lectures, assigned and graded homework, administered and graded exams and organized an annual Scientific Fair): Física 1 y 2 (Physics 1 and 2), Colegio Madrid, Mexico City, 1996-1999

##### J. Individual Student Guidance

Dr. Fuentes Hernandez has supervised and help co-advise (with Prof. Bernard Kippelen) a large number of students from undergraduates to postdoctoral fellows. While he has not been a formal co-advisor on the thesis and dissertations of these students, the result of his close mentoring and guidance is clearly reflected in the publications of these students during their research appointments in the group. Dr. Fuentes-Hernandez appears as second author on the publications where he was instrumental in defining the research directions, guiding the work, advising and assisting students with experiments and data analysis through their research activities leading to that publication. As such, his guidance was instrumental to ensure that the educational mission and research goals of the group were achieved, and that students moved successfully onto their careers after their appointments or graduation.

##### J1. Ph.D. Students

###### Organic Light Emitting Diodes:

- Dr. Keith Knauer, 2010-2015 (B48); Yield Manager at Intel Corporation
- Dr. Ehsan Najafabadi, 2010-2015 (B36, B47, B55); IP Manager at Samsung Semiconductor
- Dr. Michael Gaj, 2013-2016 (B24, B31); Optical Scientist II at Corning Inc.
- Dr. Xiaoqing Zhang, 2015-2019 (B3, B6); Hardware Engineer at Apple

###### Organic Photodiodes (photovoltaics and photodetectors):



- Dr. Jaewon Shim, 2008-2014. (B35, B45, B46, B53, B54); Assistant Professor at Dongguk University
- Dr. Amir Dindar, 2009-2015. (B66); Strategic Deals at Apple
- Dr. Talha Khan, 2010-2016. (B37); Integration/Production Engineer at Intel Corporation
- Dr. Naoya Aizawa, summer 2014. (B22); Researcher at RIKEN, Japan
- Dr. Vladimir Kolesov, 2015-2017. (B14); Optical system Engineer at Agilent Technologies
- Dr. Felipe A. Larrain, 2015-2020. (B1, B9);
- Mr. Victor A. Rodriguez Toro, 2016-2021;
- Dr. Wen-Fang Chou, 2014-2019; Component Design Engineer at Intel Corporation
- Mr. Yi-Chien Chang, 2018-present;
- Mrs. Abeer A Alsaggaf, 2019-2020.
- Mrs. Jingwei Yang, PhD, 2018 – present;
- Mr. Youngrak Park, PhD, 2017- present.
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#### **Organic Thin-Film Transistors**

- Dr. Jungbae Kim, 2006-2010. (B73, B74, B79, B80, B82); Senior Member of Technical Staff at Applied Materials
- Dr. Cheng-Yin Wang, 2013-2016. (B13, B17, B28, C15, C18); Intel Corporation
- Dr. Sangmoo Choi, 2012-2016. (B19, B20, B31, F1, F2); Display Panel Engineer at Google
- Dr. Xiaojia-Jia, 2016-2019 (B10). Device Engineer at Western Digital
- Mr. Youngrak Park, 2017-present.
- Mrs Gunhee Kim, 2017-present

#### **Optics and Photonics**

- Dr. Daniel Owens, 2006-2009 (B71, B72, B78);
- Dr. James Hsu, 2010-2013 (B49, B59); District Vice Director at Choninn health care system, Taiwan

#### **Interactive Computing**

- Mr. Dingtian Zhang, 2018-present

### **J2. M.S. Students (Indicate Thesis Option for Each Student)**

#### **Organic Photodiodes (photovoltaics and photodetectors):**

- Mr. Jordan Ford, summer 2016.

#### **Optics and Photonics:**

- Dr. Sukanya Randhawa, 2006-2007; Research Scientist at IBM Research, India
- Mr. Brian Graham, 2008.

### **J3. Undergraduate Students**

#### **Organic Photodiodes (photovoltaics and photodetectors):**

- Mrs. Sophia Wang, Fall 2021-present, 2<sup>nd</sup> year Electrical and Computer Engineering Student, Northeastern University
- Mr. Brian Jiang, Fall 2021-present, 2<sup>nd</sup> year Electrical and Computer Engineering Student, Northeastern University
- Mr. Andrew W Allan, Fall 2020, 3<sup>rd</sup> year Electrical and Computer Engineering Student, GA Tech
- Mrs. Katherine Roberts, Fall 2019-Spring 2020, 2<sup>nd</sup> year Electrical and Engineering Student GA Tech.
- Mr. Kieran Lane, summer 2019, 4<sup>th</sup> year Electrical and Engineering Student GA Tech.
- Mr. Diego Herrera Ruiz, 2017-present (CONACYT, Visiting scholar);
- Mrs. Chang He, 2017-present (Visiting scholar); Graduate Student at University of Michigan.
- Mrs. Camila Scotti, summer 2016 (Brasil's ATO program);

- Mr. Victor Wesley Melo, summer 2016 (Brasil's ATO program);
- Mrs. Amanda West, 2014-2015 (special problems); Electronics Engineer at US Air Force
- Mrs. Larissa Diniz, summer 2015 (Brasil's ATO program);
- Mrs. Julia Lukens, summer 2015. (NSF-REU); Research Analyst at Industrial Economics, Incorporated
- Mrs. Michelle Wang, summer 2011. (NSF-REU);
- Mr. Lukas Wagner, 2012 (Student of Prof. Lemmer Ulrich at Karlsruhe Institute of Technology conducting work for his bachelor thesis). Graduate Student at Karlsruhe Institute of Technology.

#### **J4. Service on Thesis or Dissertation Committees**

- Mr. Dingtian Zhang (Interactive Computing), PhD Proposal Committee, 2020
- Mr. Antonio de Jesús Olivares Vargas (Optics), PhD Dissertation Committee, 2020

#### **J5. Mentorship of Postdoctoral Fellows or Visiting Scholars**

##### **Organic Light Emitting Diodes:**

- Dr. Wojciech Haske, 2010-2012; Patent Examiner at USPTO
- Dr. Seounkeun Choi, 2009-2011 (B29, B67); Assistant Professor at the University of Washington

##### **Organic Photodiodes (photovoltaics and photodetectors):**

- Dr. Minwoo Nam, 2019-2020
- Mr. Antonio de Jesús Olivares Vargas, 2019. (CONACYT) PhD candidate at National Institute of Astronomy, Optics and Electronics, INAOE, Mexico
- Dr. Enrique Perez-Gutiérrez, 2015 (B18). (CONACYT) Researcher at the Benemérita Universidad Autónoma de Puebla, México
- Dr. Yinhua Zhou, 2009-2013. (B32, B33, B42, B43, B50, B51, B52, B61, B69, B70); Professor at Huazhong University of Science and Technology, China
- Dr. Hyeunseok Cheun, 2009-2011. (B60, B68, B76, B77); Research scientist at LG electronics
- Dr. Claudiu Cirloganu, 2010-2012; Development Engineer at Philips Lumileds
- Dr. Seungkeun Choi, 2009-2011. (B29). Assistant Professor at the University of Washington

##### **Organic Thin-Film Transistors**

- Dr. Minseong Yun, 2011-2014. (B34);
- Dr. Do Kyung Hwang, 2009-2012. (B38, B57, B58, B64, B65); Senior Research Scientist at Korea Institute of Science and Technology
- Dr. Jungbae Kim, 2010-2011. (B56, B62, B63); Senior Member of Technical Staff at Applied Materials

##### **Optics and Photonics**

- Dr. Shuo Yen Tseng, 2007-2008. (B84, B85); Professor at National Cheng Kung University, Taiwan

##### **Organic Scintillators and Radiation Detectors**

- Dr. Silja Abraham, 2019-present.

#### **K. Educational Innovations and Other Contributions**

Dr. Fuentes-Hernandez has engaged in multidisciplinary educational activities through his participation in the Center for Organic Photonic and Electronics (COPE). He has trained (on the use of equipment such as spectroscopic ellipsometry, Kelvin Probe, UV-Vis spectroscopy and reflectometry, thermal evaporators, various equipment for electrical characterization) or conducted informal tutorials on material and device physics, fabrication and characterization for students, postdoctoral fellows and scientists from research groups across multiple schools on campus, including:

Prof. Seth Marder (Research Scientist Dr. Raghunath Dasari, Postdoctoral Fellow Dr. Yulia Getmanenko, PhD Students: Dr. Anthony Giordano, Mr. Federico Pulvirenti and Mrs. Rebeca Hill);  
Prof. Joe Perry (PhD Students Mr. Yohan Park and Mr. Taylor Allen and Senior Research Scientists: Dr. Mohan Mohanalingam Kathaperumal, Dr. Joel Hales, Dr. San-Hui Chi);  
Prof. Jean-Luc Bredas (Postdoctoral Fellow: Hadi Abroshan);  
Prof. John Reynolds (PhD students: Mr. Kin Lo, Mr. Brian Schmatz);  
Prof. Elsa Reichmanis (PhD student: Boyi Fu);  
Prof. Vladimir Tsukruk (PhD student: Mr. Ray Gunawidjaja, Postdoctoral fellows, Dr. Eugenia Kharlampieva)  
Prof. Thomas Orlando (PhD student Mr. Giovanni Deluca);  
Prof. Oliver Brand: (Mr. Mingu Kim)  
Prof. Ajeet Rohatgi (Research Engineer II: Mr. Young-Woo Ok, PhD student Mr. Andrew Tam);  
Prof. Omer Inan (PhD students Andrew Carek)  
Prof. Emmanouil Tentzeris (PhD students Mr. Jimmy Hester, Mr. Jo Bitro, Mrs. Mitra Akbari);  
Prof. Wenshan Cai (Postdoctoral Fellow: Mohammad Taghinejad);  
Prof. Jennifer Curtis (PhD student: Mrs. Hema Selvakumar);  
Prof. Chuck Zhang; (Research Associate II: Billyde Brown)  
Prof. Tequila Harris; (PhD student: Ara Parsekian)  
Prof. Gregory Abowd; (PhD students: Dingtian Zhang, Nivedita Arora)  
Prof. Baratunde Cola; (PhD students: Etizas Shah, Eric Tervo)  
Prof. Samuel Graham; (Postdoctoral Fellow: Anurada Bulusu, PhD student: Ankit Singh)  
Prof. Nolan Hertel; (PhD student: Mr. Jacob Inman)

## VI. Service

### L. Professional Contributions

- Reviewer of proposals received by the National Council of Science and Technology (CONACYT) of Mexico, 2020.
- Reviewer of proposals received by the Maryland Industrial Partnerships Program 2019
- OSA's 2019 Optical Devices and Materials for Solar Energy and Solid-state Lighting Program Committee
- Reviewer of proposals received by the American Chemical Society: The Petroleum Research Fund, 2015
- Reviewer for multiple Journals, including: Science, Nature Electronics, Advanced Materials Interfaces, Advances Optical Materials, Nature Photonics, Chemistry of Materials, and many others on the general area of organic photonics and electronics (on average ca. 10 per year)
- Active member of OPTICA (former Optical Society of America), the International Society for Optical Engineering, SPIE and the Material Research Society (MRS).

### M. Public and Community Service

- ECE Showcase, Northeastern University, October 20<sup>th</sup> 2021
- ECE Sophomore Welcome Lunch Fall 2021, Northeastern University, September 9<sup>th</sup> 2021
- We Demand Safety APS, Steering Committee 2020.
- Springdale Park Elementary 2020 Career Day, Kindergarten and 3<sup>rd</sup> grade, 45 min conversations with students about science and the nature of my work.
- Bright Horizons at GA Tech 2019 Career Day, PreK, 30 min conversation with students about science and the nature of my work.
- Judge at InVenture Competition at Georgia Tech, 2012, and 2016, 2018, 2019.

### N. Other Contributions

Canek Fuentes-Hernandez, PhD

- Member of ECE Publicity Committee, Northeastern University, 2021-present
- ECE Representative to the Research Faculty Senate, GA Tech, 2020-2021
- College of Engineering Research Faculty Promotions Committee, GA Tech, 2018, 2019, 2020
- Institute Research Faculty Promotions Committee, GA, Tech 2018