

Deidra R. Hodges
 Department of Electrical and Computer Engineering
 The University of Texas at El Paso, El Paso, TX 79968

EDUCATION

Degree	Institution	Field	Dates
Ph.D.	University of South Florida	Electrical Engineering	2009
M.S.	Columbia University	Electrical Engineering	1984
B.S.	Columbia University	Electrical Engineering	1983
B.S.	Dillard University	Physics	1982

EXPERIENCE

o *Full-Time Academic Experience*

Institution	Rank	Field	Dates
University of Texas at El Paso	Assistant Professor	Electrical Engineering	8/2014 - present
Southern Polytechnic State University	Assistant Professor	Electrical Engineering	8/2010 – 5/2014

o *Non-Academic Experience*

Place of Employment	Title	Dates
National Renewable Energy Laboratory	Photovoltaics Workshops	6/2014, 7/2016, 7/2019
Brookhaven National Laboratory	Visiting Faculty Fellow • Center for Functional Nanomaterials • National Synchrotron Light Source II • Nonproliferation and National Security	6/2019-7/2019, 6/2018-8/2018, 6/2017-8/2017, 6/2016-8/2016, 6/2014-8/2014
U.S. Environmental Protection Agency	Visiting Faculty Fellow	6/2011-8/2011
Martin Marietta Manned Space Systems	Senior Systems Engineer	9/1989-12/1993
IBM Federal Systems Division	Software Engineer	6/1984-8/1989
U.S. Navy Reserves	Officer, Engineering Field Division	5/1988-5/1996

PUBLICATIONS

1. Deidra Hodges, Shaimum Shahriar, Clara Camarillo, Carlos Maldonado, Yves Ramirez, Victor Rodriguez, Tahmina Akter, Geoffrey Saupe, Garth Williams, Juergen Thieme, Fernando Camino, Mingxing Li, Mircea Cotlet, Nusrin Akter, J. Anibal Boscoboinik, Luis Ocampo, and Aleksey Bolotnikov, “Synchrotron and optical probing of hybrid organic-inorganic perovskite halides for photovoltaics”, (under review *Scientific Reports*)
2. Shaimum Shahriar, Venessa Castaneda, Manuel Martinez, Aditya Mishra, Tahmina Akter, Kelly Schutt, Jorge Boscoboinik and Deidra Hodges, “Oxidation States in perovskite layers formed using various deposition techniques”, *AIP Journal of Renewable and Sustainable Energy*, 2019.
3. Luis Valerio Frias, Angel De La Rosa, Victor Rodriguez, Christian Enriquez, Alberto Telles, Yves Ramirez, Daniel Rivera, Javier Herrero, Luis Bustamente, Xiao Tong and Deidra Hodges, “Characterization and Analysis of Device Fabrication Process for Performance Optimization of Perovskite Solar Cells”, *AIP Advances*, 2019.
4. Angel De La Rosa, Luis Valerio Frias, Victor Rodriguez, Christian Enriquez, Alberto Telles, Yves Ramirez, Xiao Tong and Deidra Hodges, “Effect of Varying Thickness of Tin Oxide Electron Transport Layer for a Single Junction Perovskite Solar Cell”, (submitted) *Small*, 2019.

5. Felicia Manciu, Kevin Bennet, Yoonbae Oh, Abhijeet Barath, Aaron Rusheen, Abbas Kousani, Deidra Hodges, Jose Guerrero, Jonathan Tomshine, and Kendall Lee, "Analysis of Carbon-based Microelectrodes for Neurochemical Sensing", *Materials*, 2019.
6. Castro-Colin, M., L. Banuelos, C. Diaz-Moreno, Deidra Hodges, E. Ramirez-Homs, D. Korolkov, N. Sharmin, and J. A. Lopez. "Temperature Effects in the Composition of Metal Halide Perovskite Thin Films." (2018).
7. A. Mishra, J. Catalan, D. Camacho, M. Martinez, and D. Hodges, "Evaluation of physics-based numerical modelling for diverse design architecture of perovskite solar cells," *Materials Research Express*, vol. 4, p. 085906, 2017.
8. Eva M. Deemer, P. K. Paul, Felicia S. Manciu, C. E. Botez, Deidra R. Hodges, Z. Landis, *et al.*, "Consequence of oxidation method on graphene oxide produced with different size graphite precursors," *Materials Science and Engineering: B*, vol. 224, pp. 150-157, 2017.
9. Karim, H., Sarker, M. R. H., Shahriar, S., Shuvo, M. A. I., Delfin, D., Hodges, D. R., Tseng, T.-L. B., Roberson, D. A., Love, N. D., Lin, Y. (2016). Feasibility study of thermal energy harvesting using lead free pyroelectrics. *Smart Materials and Structures*, 25(5), 055022.
10. Rosales, C. A. G., Duarte, M. F. G., Kim, H., Chavez, L., Hodges, Deidra, Mandal, P., ... & Tseng, T. L. B. (2018). 3D printing of shape memory polymer (SMP)/carbon black (CB) nanocomposites with electro-responsive toughness enhancement. *Materials Research Express*, 5(6), 065704.
11. Giraldo, L. Ocampo, *et al.* "A linear array of position-sensitive virtual Frisch-grid CdZnTe for low-energy gamma rays." *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 903 (2018): 204-214.
12. Luis O. Giraldo, Aleksey Bolotnikov, G. Camarda, G. De Geronimo, J. Fried, R. Gul, *et al.*, "Study of sub-pixel position resolution with time-correlated transient signals in 3D pixelated CdZnTe detectors with varying pixel sizes," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 2017.
13. Luis Ocampo Giraldo, Aleksey E. Bolotnikov, G.S. Camarda, S. Cheng, G. De Geronimo, A. McGilloway, J. Fried, D. Hodges, A. Hossain, K. Ünlü, M. Petryk, Valerie Vidal, E. Vernon, G. Yang and R.B. James, Using a pulsed laser beam to investigate the feasibility of sub-pixel position resolution with time correlated transient signals in 3D pixelated CdZnTe detectors, *Nuclear Inst. and Methods in Physics Research, A*, <http://dx.doi.org/10.1016/j.nima.2017.04.030>
14. Aleksey Bolotnikov, Kim Ackley, Giuseppe S. Camarda, Carly Chermes, Yonggang Cui, Gianluigi De Geronimo, Jack Fried, Deidra Hodges, Anwar Hossain, Wonho Lee, George Mahler, Maxwell Maritato, Matthew Petryk, Utpal Roy, Cynthia Salwen, Emerson Vernon, Ge Yang, and Ralph James, "An array of virtual Frisch-grid CdZnTe detectors and a front-end ASIC for large-area position-sensitive gamma-ray cameras", *Review of Scientific Instruments*, 2015.
15. Eva M. Deemer, P. K. Paul, Felicia S. Manciu, C. E. Botez, Deidra R. Hodges, Z. Landis, *et al.*, "Consequence of oxidation method on graphene oxide produced with different size graphite precursors," *Materials Science and Engineering: B*, vol. 224, pp. 150-157, 2017.
16. Aditya Mishra, J. Catalan, D. Camacho, M. Martinez, and Deidra Hodges, "Evaluation of physics-based numerical modelling for diverse design architecture of perovskite solar cells," *Materials Research Express*, vol. 4, p. 085906, 2017.
17. Aditya Mishra, Deidra Hodges, and R. Misra, "Influence of processing temperature and precursor composition on phase region of solution processed methylammonium lead iodide perovskite," *Materials Research Express*, vol. 4, p. 096201, 2017.
18. Aditya Mishra, A. Kumar, Deidra Hodges, and R. Misra, "Tunable TiO₂-pepsin thin film as a low-temperature electron transport layer for photoelectrochemical cells," *Materials technology*, vol. 32, pp. 829-837, 2017.
19. Manuel Martinez, Shaimum Shahriar, Donato Kava, Cheik Sana, Vanessa Castañeda, Jose Galindo, Deidra Hodges, "Effects of Processing Parameters on Zinc Oxide Thin Films Prepared by Single Solution Deposition," *MRS Advances*, 2016 (DOI: 10.1557/adv.2016.328).

20. Karim, H., Sarker, M. R. H., Shahriar, S., Shuvo, M. A. I., Delfin, D., Hodges, D. R., Tseng, T.-L. B., Roberson, D. A., Love, N. D., Lin, Y. (2016). Feasibility study of thermal energy harvesting using lead free pyroelectrics. *Smart Materials and Structures*, 25(5), 055022.
21. Bolotnikov, Aleksay, Ackley, K., Hodges, Deidra R., Camarda, G., Cherches, C., James, R. B. (2015). An array of virtual Frisch-grid CdZnTe detectors and a front-end application-specific integrated circuit for large-area position-sensitive gamma-ray cameras. *Review of Scientific Instruments*, 86(7).
22. Okhio, Cyril, Hodges, Deidra R., Black, Jennifer. (2010). Review of literature on nanofluid flow and heat transfer properties. *Cyber Journals: Multidisciplinary Journals in Science and Technology, Journal of Selected Areas in Nanotechnology (JSAN)*, 1, 1–8. Cited by 12.
23. Hodges, Deidra R. (2009). Development of CdTe thin film solar cells on flexible foil substrates.
24. Hodges, Deidra R., Palekis, V., Bhandaru, S., Singh, K., Morel, D. L., Stefanakos, L. (2009). Mechanical properties and adhesion of CdTe/CdS thin film solar cells deposited on flexible foil substrates. *MRS Proceedings*, 1165, 1165–M02.
25. Palekis, Vasellis, Hodges, Deidra R., Morel, D. L., Stefanakos, L., Ferekides, C. S. (2009). Structural Properties of CdTe Thin Films for Solar Cell Applications Deposited on Flexible Foil Substrates. *MRS Proceedings*, 1165, 1165–M08.

○ Professional Honors, Prizes, Fellowships

- Department – Faculty Marshall of Students for the College of Engineering, May 2017
- Department – Administered the Oath at the Assembly of the Engineers, 2015-2018.
- USF Presidential Leadership Award.
- Alfred P. SLOAN and F.E.F. McKnight Doctoral Fellowships Awards.
- Martin Marietta Manned Space Systems Thomas Jefferson Cup Award and Independent Research and Development of the Year Award.

○ Other Professional Activities and Public Service

1. **Associate Editor** - Recently invited to be an Associate Editor of Elsevier's *Materials Science in Semiconducting Processing (MSSP)*.
2. **Harvard University** – 2019 Minority Faculty Development Workshop, *Engineering a World of Difference: Policy and Practice*, Sept. 18-21, 2019. **Invited participant.**
3. **Dept. of Education, Washington, DC** – MSEIP CCEM Capacity Building Grant Conference, Oct. 27-29, 2019. **Invited participant.**
4. **National Renewable Energy Laboratory (NREL)** Hands-on Photovoltaic Experience (HOPE) and Faculty Development Workshops, July 2019, July 2016 and June 2014. **Invited talks and panelist.**
5. **National Science Foundation (NSF) ECCS** – July 7-9, 2019. **Invited Panelist.**
6. **Brookhaven National Laboratory (BNL) Center for Functional Nanomaterials (CFN)** – **Proposal reviewer.** July 5-7, 2019.
7. **46th IEEE PVSC** – June 16-21, 2019. Chicago, IL. **Poster presentation and nominated for best poster.**
8. **International X-ray Scattering (IXS) 2019 Conference** – Stony Brook University, NY. June 23-28, 2019. **Poster presentation.**

9. **EXAFS 2018 Short Course: Intro to X-ray Absorption Spectroscopy**, BNL, November 6-8, 2019. **Selected attendee.**
10. BNL Center for Functional Nanomaterials (CFN) **Ambassador**, (8/1/2018 – present)
11. Southern New Mexico Dust Conference with Department of Geological Sciences, Las Cruces, NM, April 17, 2019. **Attendee.**
12. miniCAST Night at the Museum Lightning Talks Energy Sustainability and Photovoltaics October 19, 2018. **Invited talk.**
13. 2018 NSF EFRI Workshop: Convergence and Interdisciplinarity in Advancing Larger Scale Research, May, 14, 2018. **Attendee.**
14. RICE University: Materials Today: Materials Science for the Next Two Decades Synchrotron and Optical Probing of Hybrid Organic-Inorganic Perovskite Halides for Photovoltaics September 27, 2018. **Poster presentation.**
15. SUNY Canton, *Women in Engineering*, May 16, 2018. **Invited talk.**
16. WIN, Thin Film Photovoltaics, Renewable Energy & Sustainability April 5, 2018. **Invited talk.**
17. Florida International University Fall 2017 Seminar Series Perovskite PV, X-ray and Gamma-ray Detectors November 17, 2017. **Invited talk.**
18. USF College of Engineering and NREC Seminar Perovskite PV, X-ray and Gamma-ray Detectors October 31, 2017. **Invited talk.**
19. Dept. of Energy Consolidated Nuclear Research Reviewer, NSF Panelist Reviewer, and Journal Referee for Thin Solid Films Journal, SPIE Optical Engineering and Journal of Applied NanoScience. **Reviewer.**
20. Conference Session Chairs for the 5th Southwest Energy Science and Engineering Symposium, and the College of Engineering Research Forum. **Session Chair.**
21. User's and Research Conference Participation and Presentations:
 - a. 46nd IEEE Photovoltaics Specialists Conference, Chicago, IL, "Synchrotron-Based X-ray Spectroscopy Studies of Inorganic-Organic Hybrid Perovskite Materials Surfaces and Properties, 2019. **Poster presentation and nominated for Best Poster award.**
 - b. 11th International Conference on Inelastic X-ray Scattering (IXS2019), Stony Brook University, NY, "Synchrotron-Based X-ray Spectroscopy Studies of Inorganic-Organic Hybrid Perovskite Materials Surfaces and Properties, 2019. **Poster presentation.**
 - c. AVS 64th International Symposium, Tampa, FL, "Synchrotron-Based X-ray Spectroscopy Studies of Inorganic-Organic Hybrid Perovskite Materials Surfaces and Properties", 2017. **Conference oral presentation.**
 - d. DOE/ NREL HOPE, Golden, CO, "Understanding the power of PV and how our research will be used", 2014, 2016, 2019. **Invited talk.**
 - e. BNL Visiting Faculty Program (VFP), Upton, NY, "Perovskite PV, X- and γ -ray Detectors", 2014-2019. **Invited talk.**

- f. BNL CFN, Upton, NY, “Perovskite Photovoltaics and Gamma-ray Radiation Detectors Research Highlights”, 2014-2019. **Invited talk.**
- g. IEEE Technologies for Sustainability, Ogden, Utah, “Earth Abundant and Nontoxic Material for Low Cost, Thin Film Solar Cells”, 2015. **Conference oral presentation.**
- h. AVS 62nd International Symposium, San Jose, CA, “Spin Coating Thin Film CZTS for Efficient, Low-Cost Solar Cells on Flexible Glass Substrates”, 2015. **Conference oral presentation.**
- i. 42nd IEEE Photovoltaics Specialists Conference, New Orleans, LA, **Conference poster presentations**, 2015.
- j. MRS 2016 Spring Meeting, Phoenix, AZ, **Conference poster presentations**, 2016.
- k. Synchrotron User’s Conference at Brookhaven National Labs, Upton, NY. **Attendee.**