Biographical Sketch: Deidra R. Hodges, Ph.D.

(a) Professional Preparation

Dillard University	New Orleans, LA	Physics	B.S., 1982
Columbia University	New York, NY	Electrical Engineering	B.S., 1983, M.S., 1984
University of South Florida	Tampa, FL	Electrical Engineering	Ph.D., 2009

(b) Appointments

2014-present	Assistant Professor, The University of Texas at El Paso, El Paso, TX, Department of Electrical and Computer Engineering
Summers 2017, 2016 &2014	Visiting Faculty Fellow, Brookhaven National Laboratory (BNL), Upton, NY, National Synchrotron Light Source II (NSLS II), Center for Functional Nanomaterials (CFN), and Nonproliferation and National Security Gamma Ray Room Temperature Radiation Detectors
2010-2014	Assistant Professor, Southern Polytechnic State University, Marietta, GA, Department of Electrical Engineering
2002-2005	Instructor, Dillard University, New Orleans, LA, Department of Computer Science
1989-1993	Senior Systems Engineer, Martin Marietta Manned Space Systems, New Orleans, LA
1984-1989	Software Engineer, IBM Federal Systems Division, Clear Lake, TX
1988-1996	Officer, Engineering Field Division, United States Navy Reserves, Houston, TX

(c) Products

1. Irakli Chakaberia ; Mircea Cotlet ; Merlin Fisher-Levine ; Diedra R. Hodges ; Jayke Nguyen ; Andrei Nomerotski; Time stamping of single optical photons with 10 ns resolution. Proc. SPIE 10212, Advanced Photon Counting Techniques XI, 102120Q (May 8, 2017); doi:10.1117/12.2262212
2. L. Ocampo Giraldo, A.E. Bolotnikov, G.S. Camarda, S. Cheng, G. De Geronimo, A. McGilloway, J. Fried, D. Hodges, A. Hossain, K. Ünlü, M. Petryk, V. 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
3. E. M. Deemer, P. K. Paul, F. S. Manciu, C. E. Botez, D. 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, 2017/10/01/ 2017.
4. M. Aditya Kumar, H. Deidra, and M. Devesh, "Influence of processing temperature and precursor composition on phase region of solution processed methylammonium lead iodide perovskite", *Materials Research Express*, 2017.
5. A. K. Mishra, C. Jorge, C. Diana, M. Miguel, 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.

6. Aleksey Bolotnikov, Kim Ackley, Giuseppe S. Camarda, Carly Cherches, 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.
7. 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).
8. N. Sharmin, J. Lopez, D. Hodges, S. Shahriar, V. Castaneda, and M. Aditya, "Degradation of perovskite samples over time," *Bulletin of the American Physical Society,* vol. 61, 2016.
9. Jose Galindo, Chiek Sana, Shaimum Shahriar, Donato Kava, Manuel Martinez, Vanessa Castañeda, Deidra Hodges, "Room Temperature Processed CuSCN Hole Transportation Layers for the Use in Perovskite Based Solar Cells," MRS Spring Meeting, Phoenix, Arizona, 2016.
10. Shaimum Shahriar, Cheik Sana, Jose Galindo, Donato Kava, Deidra Hodges, Edison Castro, Robert Cotta, David Buck, and Luis Echegoyen, "Characterization and Analysis of Structural and Optical Properties of Perovskite Thin Films" in *42th IEEE Photovoltaic Specialists Conference Proceedings*, New Orleans, LA, 2015.
11. Jose Galindo, Donato Kava, Shaimum Shahriar, Cheik Sana, Edison Castro, Robert Cotta, David Buck, and Luis Echegoyen and Deidra Hodges, "Low Cost Spin Coating Fabrication of Efficient Perovskite Thin Film Layers" in *42th IEEE Photovoltaic Specialists Conference Proceedings*, New Orleans, LA, 2015.
12. Deidra Hodges, Cheik Sana, Shaimum Shahriar, Jose Galindo, Donato Kava, Edison Castro, Robert Cotta, David Buck, and Luis Echegoyen "Earth Abundant and Nontoxic Material for Low Cost, Thin Film Solar Cells" *in Technologies for Sustainability (SusTech), 2015 IEEE Conference on*, Ogden, Utah, 2015.
13. Hasanul Karim, MD Rashedul Sarker, Shaimum Shahriai, Mohammad Shuvo, Diego Delfin, Deidra Hodges, Tzu-Liang Tseng, David Roberson, Norman Love, and Yirong Lin, "Feasibility Study of Thermal Energy Harvesting using Lead Free Pyroelectrics.", *Smart Materials and Structures*, 2016**.**

(d) Awards, Honors and Patents

1. Patent application, "Current Matching in Monolithic Tandem Perovskite and Silicon Solar Cells".
2. UTEP Electrical and Computer Engineering Class of 2016 Best Professor Award.
3. USF Presidential Leadership Award.
4. Alfred P. SLOAN and F.E.F. McKnight Doctoral Fellowships Awards.
5. Martin Marietta Manned Space Systems Thomas Jefferson Cup Award and Independent Research and Development of the Year Award.

(e) Professional and Other Synergistic Activities

1. National Renewable Energy Laboratory (NREL) Hands-on Photovoltaic Experience (HOPE) and Faculty Development Workshops, July 2016 and June 2014.

2. NSF Panelist Reviewer, and Journal Referee for Thin Solid Films, Solar Energy, ACS Applied Materials, ConTex, SPIE Optical Engineering and Journal of Applied NanoScience.
3. Conference Session Chairs for the 5th Southwest Energy Science and Engineering Symposium, and the College of Engineering Research Forum.
4. Professional Memberships: Institute of Electrical and Electronics Engineer (IEEE), Materials Research Society (MRS) and American Society for Engineering Education (ASEE).
5. User's and Research Conference Participation and Presentations:
   a. DOE/ NREL HOPE, Golden, CO, "Understanding the power of PV and how our research will be used", 2016.
   b. BNL Visiting Faculty Program (VFP), Upton, NY, "Perovskite PV, X- and γ–ray Detectors", 2016.
   c. BNL CFN, Upton, NY, "Perovskite Photovoltaics and Gamma-ray Radiation Detectors Research Highlights", 2016.
   d. IEEE Technologies for Sustainability, Ogden, Utah, "Earth Abundant and Nontoxic Material for Low Cost, Thin Film Solar Cells", 2015.
   e. AVS 62nd International Symposium, San Jose, CA, "Spin Coating Thin Film CZTS for Efficient, Low-Cost Solar Cells on Flexible Glass Substrates", 2015.
   f. 42nd IEEE Photovoltaics Specialists Conference, New Orleans, LA, Perovskite poster presentations, 2015.
   g. MRS 2016 Spring Meeting, Phoenix, AZ, Perovskite and CZTS poster presentations, 2016.
   h. Synchrotron User's Conference at Brookhaven National Labs, Upton, NY
   i. Hopps Defense Scholars Conference at Morehouse College, Atlanta, GA

(f) Funding Record

1. NSF LSAMP Supplement, "Hybrid Organic-Inorganic Perovskite Halides Thin-Film Photovoltaics", #1202008, $52,755, Co- PI.
2. NSF MRI Award, "Acquisition of a Thin Film Materials Deposition System", #1228957, $204,150, PI.
3. NSF BRIGE Award, "CZTS Thin-Films and Solar Cells by Liquid-Based Techniques", #1125775, $175,000, PI.
4. NSF LSAMP Supplement, "Hybrid Organic-Inorganic Perovskite Halides Thin-Film Photovoltaics", #1202008, $46,268, Co- PI.
5. Dept. of Defense Army Research Office Award, "Surface Characterization of Materials", #68846, $404,514, Co-PI.
6. Dept. of Defense Army Research Office Award, "Acquisition of an Advanced Thermal Analysis and Imaging System for Integration with Interdisciplinary Research and Education in Low Density Organic-Inorganic Materials", #68822, $494,532, Co-PI.
7. Brookhaven National Laboratory Center for Functional Nanomaterials User Rapid Access Award, "Nanoscale Advanced X-ray Probing, Spectroscopy, Microscopy and the Nanoscience of Hybrid Inorganic-Organic Perovskite Halides for Thin Film Photovoltaics: Devices and Materials' Structure and Property Relationships", #35783, PI.
8. Brookhaven National Laboratory Center for Functional Nanomaterials User Rapid Access Award, "Advanced Optical and Spectroscopy and Microscopy Probing and the

Nanoscience of Hybrid Inorganic-Organic Perovskite Halides for Thin Film Photovoltaics: Materials' Structure and Property Relationships", #35503, PI.

9. Brookhaven National Laboratory Center for Functional Nanomaterials User Rapid Access Award, "Nanoscale Advanced X-ray Probing and Spectroscopy and the Nanoscience of Hybrid Inorganic-Organic Perovskite Halides for Thin Film Photovoltaics: Materials' Structure and Property Relationships", #35749, PI.
10. UTEP's University Research Incentive Award, "Investigation of Hybrid Inorganic-Organic Perovskite Halides: Materials Structure and Property Relationships for Photovoltaics", $5,000, PI.
11. UTEP's Interdisciplinary Research Seed Fund Award, "An Integrated Mechanical, Testing and Characterization System for Thin-Engineered Materials Subjected to Ultra-High-Cycled Fatigue", $20,000, Co-PI.