

Curriculum Vitae
DANIELA R. RADU, Ph.D.

Professor

Mechanical and Materials Engineering, College of Engineering and Computing
Florida International University, 10555 West Flagler Street, Miami, FL 33174

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EDUCATION

Ph.D. in Chemistry (2004)

Iowa State University, Ames, IA, USA

M.S. in Chemistry (1996)

“Babeş -Bolyai” University, Cluj-Napoca, Romania

B.S. in Chemical Engineering (1994)

“Babeş-Bolyai” University, Cluj-Napoca, Romania

PROFESSIONAL EXPERIENCE

Professor

Department of Mechanical and Materials Engineering
Florida International University, Miami, FL 33174

August 2024 – Present

Interim Chair

Department of Mechanical and Materials Engineering
Florida International University, Miami, FL 33174

May 2024 – Present

Director, Advanced Materials Engineering Research Institute (AMERI)

Florida International University, Miami, FL 33174

December 2022 – Present

FIU Honors College Faculty Fellow

August 2022 – Present

Associate Professor with Tenure

Department of Mechanical and Materials Engineering
Florida International University, Miami, FL 33174

August 2018 – Present

Associate Dean

College of Mathematics, Natural Sciences and Technology
Delaware State University, Dover, DE

January 2018 – July 2018

Associate Professor with Tenure

Department of Chemistry, Delaware State University, Dover, DE

August 2017 – July 2018

Affiliated Professor

Department of Materials Science and Engineering, University of Delaware
Newark, DE

October 2015 – July 2020

Assistant Professor, Tenure-Track

Department of Chemistry, Delaware State University, Dover, DE

January 2013 – July 2017

Senior Research Scientist

DuPont CR&D, Experimental Station, Wilmington, DE

August 2010 – December 2012

Research Scientist

DuPont Central Research and Development, Experimental Station
Wilmington, DE

October 2007 – July 2010

Postdoctoral Research Fellow

The Scripps Research Institute, La Jolla, CA

January 2005 – September 2007

Research Scientist

National Institute for Research and Development of Isotopic
and Molecular Technologies Cluj-Napoca

January 1995-July 2000

WORK IN PROGRESS

- Advanced materials for optoelectronics applications: lasing nanomaterials, 2D materials and nanostructures, magnetic nanomaterials
 - Quantum materials
 - Nanostructured materials for solution-processed solar photovoltaics
 - Sensor design: detecting heavy metals, nitrates, and phosphates in water; biomedical markers
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AWARDS AND HONORS

2014 Junior Faculty Research Excellence Award, Delaware State University, College of Mathematics, Natural Sciences and Technology
2014 PRIDE Innovation Award, Delaware State University
2016 Junior Faculty Teaching Excellence Award, Delaware State University, College of Mathematics, Natural Sciences and Technology
2018 Faculty Research Excellence Award, Delaware State University
2018 FIU Diversity Mentor Professor
2020 FIU Top Scholar, Florida International University
2021 Departmental Faculty Research Award, Department of Mechanical and Materials Engineering FIU
2022 Florida International University Faculty Research Award
2023 Florida International University College of Engineering and Computing Faculty Mentor Award

SELECTED PUBLICATIONS

1. “Novel Gas Sensing Approach: ReS₂/Ti₃C₂T_x Heterostructures for NH₃ Detection in Humid Environments,” Sahil Gasso, Jake Carrier, Daniela Radu, Cheng-Yu Lai. *ACS Sens.* 2024, ASAP. <https://doi.org/10.1021/acssensors.4c01216>.
2. “Enhancing Efficiency in Dye-Sensitized Solar Cells: Incorporation of Cu₃VSe₄ Nanocrystals into TiO₂ Photoanodes” Navdeep Kaur, Linisha Biswal, Alexander Prieto, Cheng-Yu Lai, Daniela R Radu. *ACS Appl. Energy Mater.* 2024, 7, 11, 5038–5049.
3. “Nanoscale Cu₂ZnSnS_xSe_(4-x) (CZTS/Se) for Sustainable Solutions in Renewable Energy, Sensing, and Nanomedicine” Sayedmahdi Mohammadi, Navdeep Kaur, Daniela R Radu, *Crystals* 2024, 14(5), 479.
4. “Lignin-Based Platform as a Potential Low-Cost Sorbent for the Direct Air Capture of CO₂” Jake Carrier, Cheng-Yu Lai, Daniela Radu, *ACS Environ. Au* 2024, 4, 4, 196–203.
5. “Size-Controlled Cu₃VSe₄ Nanocrystals as Cathode Material in Platinum-Free Dye-Sensitized Solar Cells” Chen-Yu Chang, Navdeep Kaur, Roberto Prado-Rivera, Cheng-Yu Lai, Daniela Radu, *ACS Appl. Mater. Interfaces* 2024, 16, 11, 13719–13728.
6. “Lignin-Based Nanospheres as Environmental Remediation Platforms for Anionic Dye Contaminants” Fei Zhang, Ha Na, Jake Carrier, Chen-Yu Chang, Daniela Radu, Cheng-Yu Lai, *ACS Omega* 2024, 9, 10, 12006–12014.
7. “Enhancing light harvesting in dye-sensitized solar cells through mesoporous silica nanoparticle-mediated diffuse scattering back reflectors” Jeffrie Fina, Navdeep Kaur, Chen-Yu Chang, Cheng-Yu Lai, Daniela R Radu, *Electron. Mater.* **2023**, 4(3), 124-135.
8. “From reflection to absorption: Improving light harvesting of dye sensitized solar cells with Cu nanowires as reflectors” Navdeep Kaur, Samuel A Oyon, Cheng-Yu Lai, Daniela R Radu, *Optical Materials* 2023 142, 114074
9. “Ag Reflectors: An Effective Approach to Improve Light Harvesting in Dye Sensitized Solar Cells” Kaur

- N.; Syed F. M.; Fina J.; Lai C.-Y.; Radu D. R. *IEEE Journal of Photovoltaics*, **2023**, *13* (2), 250- 253, DOI: 10.1109/JPHOTOV.2023.3238796.
10. "Photocatalytic Deposition of Nanostructured CsPbBr₃ Perovskite Quantum Dot Films on Mesoporous TiO₂ and Their Enhanced Visible-Light Photodegradation Properties" Gonzalez-Moya, J. R.; Chang, C.-Y.; Radu, D. R.; Lai, C.-Y. *ACS Omega* **2022**, *7* (30), 26738-26748. DOI: 10.1021/acsomega.2c03089.
11. "Colloidal Synthesis and Photocatalytic Properties of Cu₃NbS₄ and Cu₃NbSe₄ Sulvanite Nanocrystals" Chang, C.-Y.; Prado-Rivera, R.; Liu, M.; Lai, C.-Y.; Radu, D. R. *ACS Nanoscience Au* **2022**, *2* (5), 440-447. **(Cover article)**
12. "Green Synthesis of Ge_{1-x}Sn_x Alloy Nanoparticles for Optoelectronic Applications" Attar, G.S.; Liu, M.; Lai, C.-Y.; Radu, D.R. *Crystals* **2021**, *11*, 1216. <https://doi.org/10.3390/cryst11101216>
13. "Versatile Silver Nanoparticles-Based SERS Substrate with High Sensitivity and Stability" Liu, M.; Bhandari, A.; Haqqani Mohammed, M. A.; Radu, D. R.; Lai, C.-Y. *Applied Nano* **2021**, *2* (3)
14. "Stand-Alone CuFeSe₂ (Eskebornite) Nanosheets for Photothermal Cancer Therapy" Liu, M.; Radu, D. R.; Selopal, G. S.; Bachu, S.; Lai, C.-Y. *Nanomaterials* **2021**, *11* (8), 1-11 **(Editors' Choice)**
15. "Sulvanites: The Promise at the Nanoscale" Prado-Rivera, R.; Chang, C.-Y.; Liu, M.; Lai, C.-Y.; Radu, D.R. *Nanomaterials* **2021**, *11*, 823. <https://doi.org/10.3390/nano11030823>
16. "Solution-Based Synthesis of Sulvanite Cu₃TaS₄ and Cu₃TaSe₄ Nanocrystals" Liu, M.; Lai, C.-Y.; Chang, C.-Y.; Radu, D. R., *Crystals* **2021**, *11* (1) "Cascade synthesis and optoelectronic applications of intermediate bandgap Cu₃VSe₄ nanosheets" Liu, M.; Lai, C.-Y.; Zhang, M.; Radu, D. R., *Scientific Reports* **2020**, *10* (1), 21679.
17. "Synthesis and optoelectronic properties of Cu₃VSe₄ nanocrystals" Liu, M.; Lai, C.-Y.; Selopal, G. S.; Radu, D. R. *PLOS one* **2020**, *15*, e0232184.
18. "Synthesis of Highly Efficient Cu₂ZnSnS_xSe_{4-x} (CZTSSe) Nanosheet Electrocatalyst for Dye-Sensitized Solar Cells" Mahyar Mohammadnezhad; Mimi Liu; Gurpreet Singh Selopal; Fabiola Navarro Pardo; Zhiming M. Wang; Barry Stansfield; Haiguang Zhao; Cheng-Yu Lai; Federico Rosei; Daniela R. Radu, *Electrochimica Acta*, **2020**, *340*, 135954
19. "A rapid molecular precursor solid-state route to crystalline Fe₂GeS₄ nanoparticles" Hwang, P.-Y.; Berg, D. M.; Liu, M.; Lai, C.-Y.; Radu, D. R., *Materials Letters* **2018**, *223*, 128-132.
20. "The promise of solution-processed Fe₂GeS₄ thin films in iron chalcogenide photovoltaics" Liu, M.; Berg, D. M.; Hwang, P.-Y.; Lai, C.-Y.; Stone, K. H.; Babbe, F.; Dobson, K. D.; Radu, D. R., *Journal of Materials Science* **2018**, *53*, 7725-7734.
21. "Sulvanite" (Cu₃VS₄) Nanocrystals for Printable Thin Film Photovoltaics" Chen, C.-C.; Stone, K. H.; Lai, C.-Y.; Dobson, K. D.; Radu, D. R. *Materials Letters* **2018**, *211*, 17.
22. "Stellate MSN-based dual-enzyme nano-biocatalyst for the cascade conversion of non-food feedstocks to food products" Chi, H. H., Radu, D. R., Dezayas, G., Penney, M., Lai, C. Y. *J. Thermodyn. Catal*, **2017** *8*(2), 185.
23. "Absorption and scattering cross-section extinction values of silver nanoparticles", Hlaing, M.; Gebear-Eigzabher, B.; Roa, A.; Marciano, A.; Radu, D.R.; Lai, C.-Y. *Optical Materials* **2016**, *58*, 439- 444.
24. "Functionalized stellate macroporous silica nanospheres for CO₂ mitigation", Radu, D. R.; Pizzi, N. A.; Lai, C.-Y. *Journal of Materials Science* **2016**, *51*, 10632–10640.
25. "Chalcogenide Nanoparticles Precursor in Thin-Film Photovoltaics—Processing Limitations", D. R. Radu, D. Berg, M. Liu, K. Dobson, P. -Y. Hwang and C. -Y. Lai, **2016 IEEE 43rd Photovoltaic Specialists Conference (PVSC)**, 0387-0389, doi: 10.1109/PVSC.2016.7749617.
26. "Nanostructures Viewed through Low Voltage Electron Microscopy" Radu, D., Lai, C. *Microscopy and Microanalysis*, **2015**, *21*(S3), 683-684. doi:10.1017/S1431927615004213
27. "Enzyme Immobilization on Mesoporous Silica Supports", Lai, Cheng-Yu; Radu, Daniela R.; Heterogeneous Catalysts for Today's Challenges, Royal Society of Chemistry **(2015)**
28. "Heterogeneous Catalysts for Biodiesel Production", Radu, Daniela R., George A. Kraus, *Heterogeneous Catalysts for Today's Challenges*, Royal Society of Chemistry **(2015)**
29. "Novel Solution Process for Fabricating Ultra-Thin-Film Absorber Layers in Fe₂SiS₄ and Fe₂GeS₄ Photovoltaics" Orefuwa, S. A.; Lai, C.-Y.; Dobson, K.; Ni, C.; Radu, D. *MRS Online Proceedings Library*

2014, 1670, M3 - 10.1557/opl.2014.507.

30. "Effect of the selenization process on structural and device properties of nanoparticle-derived CZTSSe thin films" Choudhury, K. R.; Cao, Y.; Caspar, J. V.; Guo, Q.; Johnson, L. K.; Malajovich, I.; Radu, D.; Rosenfeld, H. D.; Silverman, L.; Wu, W. 2013 IEEE 39th Photovoltaic Specialists Conference, **2013**, 0043-0046
31. "A simple solution-based route to high-efficiency CZTSSe thin-film solar cells" Guo, Q.; Cao, Y.; Caspar, J. V.; Farneth, W. E.; Ionkin, A. S.; Johnson, L. K.; Lu, M.; Malajovich, I.; Radu, D.; Choudhury, K. R.; Rosenfeld, H. D.; Wu, W., **2012** 38th IEEE Photovoltaic Specialists Conference, 002993-002996.
32. "High-Efficiency Solution-Processed Cu₂ZnSn(S,Se)₄ Thin-Film Solar Cells Prepared from Binary and Ternary Nanoparticles" Cao, Y.; Denny, M. S.; Caspar, J. V.; Farneth, W. E.; Guo, Q.; Ionkin, S.; Johnson, L. K.; Lu, M.; Malajovich, I.; Radu, D.; Rosenfeld, H. D.; Choudhury, K. R.; Wu, W. (authors listed alphabetically) *Journal of the American Chemical Society* **2012**, 134 (38), 15644- 15647. <http://pubs.acs.org/doi/full/10.1021/ja3057985>
34. "Reversible binding and fluorescence energy transfer between surface-derivatized CdS nanoparticles and multi-functionalized fluorescent mesoporous silica nanospheres" Lai, C.-Y.; Wu, C.-W.; Radu, D. R.; Trewyn, B. G.; Lin, V. S.-Y. *Studies in surface science and catalysis* **2007**, 170, 1827-1835 <http://www.sciencedirect.com/science/article/pii/S0167299107810664>
36. "Fine-tuning the degree of organic functionalization of mesoporous silica nanosphere materials via an interfacially designed co-condensation method" Radu, D. R.; Lai C-Y; Huang J.; Shu X.; Lin, V. S.-Y. *Chemical Communications* **2005**, (10) 1264-1266. <http://dx.doi.org/10.1039/B412618A>
37. "Real-Time Imaging of Tunable Adenosine 5-Triphosphate Release from an MCM-41-Type Mesoporous Silica Nanosphere-Based Delivery System" Gruenhagen, J. A.; Lai, C.-Y.; Radu, D. R.; Lin, V. S. Y.; Yeung, E. S. *Appl. Spectrosc.* **2005**, 59 (4), 424-431. <http://as.osa.org/abstract.cfm?URI=as-59-4-424>
38. "A Polyamidoamine Dendrimer-Capped Mesoporous Silica Nanosphere-Based Gene Transfection Reagent" Radu, D. R.; Lai, C.-Y.; Jeftinija, K.; Rowe, E. W.; Jeftinija, S.; Lin, V. S.-Y. *Journal of the American Chemical Society* **2004**, 126 (41), 13216-13217. <http://dx.doi.org/10.1021/ja046275m>
39. "Gatekeeping Layer Effect: A Poly(lactic acid)-coated Mesoporous Silica Nanosphere-Based Fluorescence Probe for Detection of Amino-Containing Neurotransmitters" Radu, D. R.; Lai C-Y; Wiench J.W.; Pruski M.; Lin, V. S.-Y. *Journal of the American Chemical Society* **2004**, 126(6), 1640-1641. <http://dx.doi.org/10.1021/ja038222v>
40. "Organosulfonic acid-functionalized mesoporous silicas for the esterification of fatty acids" Mbaraka, I. K.; Radu, D. R.; Lin, V. S. Y.; Shanks, B. H., *Journal of Catalysis* **2003**, 219 (2), 329-336. <http://www.sciencedirect.com/science/article/pii/S0021951703001933>
41. "Oxidative Polymerization of 1,4-Diethynylbenzene into Highly Conjugated Poly(phenylene butadiynylene) within the Channels of Surface-Functionalized Mesoporous Silica and Alumina Materials" Lin, V. S.-Y.; Radu, D. R.; Han, M.-K.; Deng, W.; Kuroki, S.; Shanks, B. H.; Pruski, M. *Journal of the American Chemical Society* **2002**, 124 (31), 9040-9041. <http://pubs.acs.org/doi/abs/10.1021/ja025925o>

PROCEEDINGS

1. "Chalcogenide Nanoparticles Precursor in Thin-Film Photovoltaics—Processing Limitations", Daniela R. Radu, Dominik Berg, Mimi Liu, Kevin Dobson, Po-Yu Hwang and Cheng-Yu Lai, 43rd IEEE Photovoltaics Specialists Conference Proceedings, 2016
2. "Chalcogenide Nanomaterials in Thin-Film Photovoltaics", Daniela Radu, Cheng-Yu Lai, Mimi Liu, Po-Yu Hwang, Dominik Berg, Ching-Chin Chen, Kevin Dobson, Conference Abstracts of Papers of The American Chemical Society, Volume 254, 2017
3. "TEPA-Loaded Stellate Mesoporous Silica Nanoparticles (Stellate MSN) for CO₂ Capture", Daniela Radu, Nicholas Pizzi, Cheng-Yu Lai, Abstracts of Papers of The American Chemical Society, Volume 252, 2016
4. "Dual-enzyme nano-biocatalyst for the cascade conversion of cellulose-derived oligomers to fructose via

- a glucose pathway” Haoshin Chi, Daniela Radu, Gulnihal Ozbay, Cheng-Yu Lai Abstracts of Papers of The American Chemical Society, Volume 252, 2016
5. “Colloidal precursors to ultra-thin-film photovoltaics”, Daniela Radu, Kevin Dobson, Po-Yu Hwang, Cheng-Yu Lai, Abstracts of Papers of the American Chemical Society, Volume 251, 2016
 6. “Photothermal lens characterization of Ag nanoparticle colloids and films”, Belsabel Gebear-Eigzabher, Daniela Radu, Cheng-Yu Lai, Aristides Marcano, Abstracts of Papers of the American Chemical Society, Volume 251, 2016
 7. “Infusion of sustainable chemistry concepts in the undergraduate curricula through multiple interventions”, Cheng-Yu Lai, Daniela Radu, Abstracts of Papers of the American Chemical Society, Volume 250, 2015
 8. “Nanostructures Viewed through Low Voltage Electron Microscopy”, Daniela R. Radu and Cheng-Yu Lai, Microsc. Microanal. 21 (Suppl 3), Microscopy Society of America, 2015
 9. “Nanosheet-like silica nanoparticles for CO₂ capture”, Cheng-Yu Lai, Nicholas Pizzi, Daniela Radu, Abstracts of Papers of the American Chemical Society, Volume 250, 2015
 10. “Iron chalcogenide nanocolloids for spray-printed solar cells”, Daniela Radu, Abstracts of Papers of the American Chemical Society, Volume 250, 2015
 11. “Chalcogenide nanostructured precursors in fabrication of polycrystalline absorber layers in thin-film photovoltaics”, Daniela Radu, Abstracts of Papers of the American Chemical Society, Volume 249, 2015
 12. “Effect of the selenization process on structural and device properties of nanoparticle-derived CZTSSe thin films”, Kaushik Roy Choudhury, Yanyan Cao, Jonathan V Caspar, Qijie Guo, Lynda K Johnson, Irina Malajovich, Daniela Radu, H David Rosenfeld, Lee Silverman, Wei Wu, 2013 IEEE 39th Photovoltaic Specialists Conference (PVSC), 2013
 13. “Characterization and understanding of performance losses in a highly efficient solution-processed CZTSSe thin-film solar cell”, 38th IEEE Photovoltaic Specialists Conference, 2012
 14. “A simple solution-based route to high-efficiency CZTSSe thin-film solar cells”, 38th IEEE Photovoltaic Specialists Conference, 2012
 15. “CZTS absorber layer in thin film pn junction solar devices from quaternary nanoparticle precursors”, Daniela R Radu, Jonathan V Caspar, Meijun Lu, Lynda K Johnson, Yanyan Cao, Alex S Ionkin, Irina Malajovich, H David Rosenfeld, Fangping Sun, Nancy G Tassi, Abstracts of Papers of the American Chemical Society, Volume 241, 2011
 16. “Multifunctional mesoporous silica nanoparticle catalysts for conversions of bio-based feedstocks to biodiesel and other value-added products”, Victor S.-Y. Lin, Daniela R. Radu, Hung-Ting Chen, Abstracts of Papers of the American Chemical Society, Volume 229, 2005
 17. “New mesoporous silica nanosphere-based universal carrier for transmembrane delivery and endocytosis mapping”, C.Y. Lai, G. Hall, D.R. Radu, Abstracts of Papers of the American Chemical Society, Volume 227, 2004
 18. “Mesoporous silica nanocomposites as novel gene carriers for cells transfection in vitro”, Abstracts of Papers of the American Chemical Society, Volume 227, 2004
 19. “Mesoporous silica nanosphere-based stimuli-responsive controlled release delivery system”, Abstracts of Papers of the American Chemical Society, Volume 226, 2003
 20. “Polylactide-and polypeptide-functionalized mesoporous silica nanosphere materials for in vitro fluorescence detection of amino acid-based neurotransmitters.”, Abstracts of Papers of the American Chemical Society, Volume 226, 2003

CHAPTERS IN BOOKS

1. Lai, C.-Y.; Radu, D. R.: Chapter 5 Enzyme Immobilization on Mesoporous Silica Supports. In *Heterogeneous Catalysis for Today's Challenges: Synthesis, Characterization and Applications*; The

Royal Society of Chemistry, **2015**; pp 100-116.

2. Radu, D. R.; Kraus, G. A.: Chapter 6 Heterogeneous Catalysts for Biodiesel Production. In *Heterogeneous Catalysis for Today's Challenges: Synthesis, Characterization and Applications*; The Royal Society of Chemistry, 2015; pp 117-130.

GRANTED PATENTS

1. "Dual-Band Arrays and Methods of Fabricating the Same" Elias Alwan, Assif Hassan, Cheng-Yu Lai and Daniela Radu, US Patent 11,862,854 (2024, FIU)
 2. "Additive-Polymer Composite Materials and Methods of Fabricating the Same" Cheng-Yu Lai, Daniela Radu, Melissa Venedicto, Dakota Thomas, Samuel Oyon and Faizan Syed, US Patent Application 18,356,673 (2023, FIU)
 3. "Nanoscale precursors for synthesis of Fe(Si,Ge)(S,Se)crystalline particles and layers" Radu, Daniela Rodica, Cheng-Yu Lai, US 9634161 (**2017**)
 4. "Processes for preparing copper tin sulfide and copper zinc tin sulfide films" Johnson, Lynda Kaye; Lu, Meijun; Catron, John W., Jr.; Radu, Daniela Rodica WO 2010135667 (**2011**)
 5. "Copper tin sulfide and copper zinc tin sulfide ink compositions" Johnson, Lynda Kaye; Catron, John W.; Radu, Daniela Rodica US 9112094 (**2010**)
 6. "Copper zinc tin chalcogenide nanoparticles" Radu, Daniela Rodica; Caspar, Jonathan V.; Johnson, Lynda Kaye; Rosenfeld, H. David; Malajovich, Irina; Lu, Meijun WO 2010135622 (**2010**).
 7. "Aqueous process for producing crystalline copper chalcogenide nanoparticles, the nanoparticles so-produced, and inks and coated substrates incorporating the nanoparticles" Johnson, Lynda Kaye; Radu, Daniela Rodica; Lai, Cheng-Yu; Lu, Meijun; Malajovich, Irina WO 2011066205 (**2011**)
 8. "Copper zinc tin chalcogenide nanoparticles" Radu, Daniela Rodica; Caspar, Jonathan V.; Johnson, Lynda Kaye; Rosenfeld, H. David; Malajovich, Irina; Lu, Meijun WO 2010135622 (**2010**)
 9. "Use of functionalized mesoporous silicates to esterify fatty acids and transesterify oils" Lin, V. S.-Y. and Radu D. R., US 7122688 (**2006**).
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PRESENTATIONS

1. "Spray-assisted Passivation Strategy for Highly Efficient and Stable Perovskite Solar Cells", Kumar, N., Sahani, R. Munoz, D., Lai, C.-Y.; Radu, D. R. 50th IEEE Photovoltaics Specialists, San Juan, PR **2023**, *Poster-Accepted*
2. "Development of 3D/2D Perovskite Solar Cells using a Spray-Based Sequential Deposition", Sahani, R. Kumar, N., Lai, C.-Y.; Radu, D. R. 50th IEEE Photovoltaics Specialists, San Juan, PR **2023**, *Poster-Accepted*
"Copper Oxide: A Potential Candidate for Hole Transport Material in Perovskite Solar Cells for Space"
3. Munoz, D., Sahani, R. Ferreira, M., Kumar, N., Lai, C.-Y.; Radu, D. R., McMillon-Brown L. 50th IEEE Photovoltaics Specialists, San Juan, PR **2023**, *Poster-Accepted*
4. "Silver Reflector-Driven Light Harvesting Enhancement in Large Area Dye Sensitized Solar Cells" Kaur N.; Syed F. M.; Lai C.-Y.; Radu D. R. 50th IEEE Photovoltaics Specialists, San Juan, PR **2023**, *Poster-Accepted*
5. "Nanostructural Sulvanites: A Nanotechnologist's Dream", STEMS 2023 Conference, University of Central Florida, March 16-17th, **2023**, *Invited Talk*
6. "Mentor the Mentors"—Keynote presentation, NSF PREM PI meeting, Virtual, **2023**
7. "2D Materials for Optoelectronics and Biomedical Applications", AMERI MESH Conference, FIU, March 17-18th, **2022**, *Invited Talk*
8. 2021 NSF-DMR Materials Innovation Forum, Materials Research Society Fall Meeting, Boston, MA, December 1st, **2021**, *Invited Talk*

9. “Pathway to Academia and Overview of Daniela Radu’s Research Area”, Florida Gulf Coast University, October 15th **2021**, *Invited Talk*
10. “Challenges in Nanomaterials Characterization”, Daniela R. Radu, AMERI Microdevice and Materials Virtual Conference, March 12th, **2021**, *Talk*
11. “Nanomaterials for Renewable Energy Applications”, Daniela R. Radu, October 5th, **2020**, University of Puerto Rico, Rio Piedras Campus, Rio Piedras, PR, *Invited Lecture*
12. “DoN HBCU/MI Funding Opportunity Announcement (FOA) Panel”, Office of Naval Research, *Invited presentation and panelist*, September 1st, **2020**.
13. “2D Cu₂ZnSnS_xSe_{4-x} Nanosheets for Ultra-Thin Film Photovoltaics”, Cheng-Yu Lai, Mimi Liu, Daniela R. Radu, ACS National Meeting & Expo, Philadelphia, PA, March 22 - 26, **2020**, *Talk*
14. “Teaching the old mesoporous silica nanospheres (MSN) new tricks: Sensing capabilities” Daniela R. Radu, Cheng-Yu Lai, ACS National Meeting & Expo, Philadelphia, PA, March 22 - 26, 2020, *Poster*
15. “Synthetic Pathways to Functional Chalcogenide Nanomaterials”, Daniela R. Radu, October 4th, **2019**, Iowa State University, Ames, IA, *Invited Lecture*
16. “Challenging Natural Order: 2D Non-Layered Chalcogenide Nanomaterials for Renewable Energy Applications” Daniela R. Radu, Invited Lecture, March 8th, **2019**, *Department of Chemistry, FIU*
17. “Functional Chalcogenide Nanomaterials for Sustainable Photovoltaics, DoD Basic Research Forum, Department of Defense, Washington, DC, June 28th, **2018**, *Invited Lecture*
18. “Chalcogenide nanomaterials in thin-film photovoltaics”, Daniela Radu, Cheng-Yu Lai, Mimi Liu, Po-Yu Hwang, Dominik Berg, Ching-Chin Chen, Kevin Dobson, 254th ACS National Meeting & Exposition, Washington, DC, August 20-24, **2017**, *Talk*
19. Chalcogenide Nanoparticles Precursor in Thin-Film Photovoltaics—Processing Limitations” Daniela Radu, Mimi Liu, Kevin Dobson, Po-Yu Hwang, Cheng-Yu Lai, 43rd IEEE Photovoltaics Specialists, Portland OR, **2016**, *Poster*
20. “Infusing Sustainability Concepts in Undergraduate Chemistry Research” Daniela R. Radu, Dominique Powell, Nicholas Pizzi, Lourdjina Cherenfant, Cheng-Yu Lai, HBCU-UP/CREST PI/PD Meeting, Washington, DC on February 24-25, **2016**, *Poster*
21. “Elemental Loss in Thin-Film PV Originated from Nanoparticles Precursors”, Daniela Radu, Dominik Berg, Mimi Liu, Kevin Dobson, Po-Yu Hwang, Cheng-Yu Lai, 252th ACS National Meeting & Exposition, Philadelphia PA, **2016**, *Invited Talk*
22. “Iron chalcogenide nanocolloids for spray-printed solar cells” Daniela Radu, 250th ACS National Meeting 250th ACS National Meeting, Boston, MA, August 16-20, **2015**, *Talk*
23. “Nanosheet-like silica nanoparticles for CO₂ capture”, Cheng-Yu Lai, Nicholas Pizzi, Daniela Radu, 250th ACS National Meeting, Boston, MA, August 16-20, **2015** *Talk*
24. “Chalcogenide nanostructured precursors in fabrication of polycrystalline absorber layers in thin-film photovoltaics” Daniela Radu, 249th National American Chemical Society Meeting, March 22-26, **2015**, Denver, CO, *Invited Talk*
25. “Iron chalcogenide nanoparticle precursors for solution processed photovoltaics and other applications”, Bellsabel Gebear-Eigzabher, Po-Yu Hwang, Cheng-Yu Lai, Daniela Radu 250th ACS National Meeting, Boston, MA, August 16-20, **2015**, *Poster*
26. “Ultra-Thin-Film Fe₂SiS₄ and Fe₂GeS₄-Based Solar Cells Prepared from Solution Precursors”, 29th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2014), September 22-26, **2014**, Amsterdam, The Netherlands, *Poster*

SYNERGISTIC ACTIVITIES

- “Sustainable Chemistry Seminar”—seminar series organizer, Department of Chemistry, DSU, Spring 2013
- Member of the Faculty Senate, Delaware State University, 2014-2018 U.S. EPA Region III (North-

Atlantic) Faculty liaison and Lead of EPA-certified Water Lab Initiative; 2014-2016

- Panel Reviews—Panelist NSF (2015, 2016, 2017, 2018, 2019, 2020); DOE SunShot (2015); DoD NDSEG (2017, 2019)
 - ORAU Minority Serving Institutions (MSI) Research Council, 2020-Present
 - FIU University DASEC Committee Member, 2019–present
 - Founding Chair, Diversity and Inclusion Committee, MME Department, 2019-present
 - Faculty Advisor, FIU Material Research Society Student Chapter, 2019-present
 - Faculty Advisor, FIU Students for the Exploration and Development of Space, 2022-present
 - Annual PI Meeting Coordinator and Speaker-NSF Partnership for Research and Education in Materials (PREM) Program 2022 & 2023
 - FIU Mentor Network Participant: mentored two junior faculty members at FIU
 - Hosted two professional development workshops for engaging FIU faculty with NASA (2020,2021,2022)
-