

***Hemali Rathnayake, Ph.D.***  
***Associate Professor***  
***Nanoscience Department***  
***Joint School Of Nanoscience & Nanoengineering***  
***University of North Carolina - Greenboro***

***July 2016***

**EDUCATION**

- Ph.D. in Chemistry [2002-2007]
  - University of Massachusetts, Department of Chemistry, Amherst, MA.
  - Dissertation title: Organic Luminophores in Molecular and Polymeric Materials
  - Advisor: Paul M Lahti
- B.Sc. in Chemistry [1996-2000]
  - University of Peradeniya, Peradeniya, Sri Lanka.

**PROFESSIONAL EXPERIENCE**

- Associate Professor [2014 – Current]
  - Western Kentucky University, Department of Chemistry. Bowling Green, KY.
- Assistant Professor [2009-2014]
  - Western Kentucky University, Department of Chemistry. Bowling Green, KY.
- Postdoctoral Research Associate [2006-2009]
  - University of Massachusetts, Department of Polymer Science and Engineering, Amherst, MA.

**EXPERTISE AREAS**

- Organic materials (OLEDs, OPVs, and OTEGs).
- Nanomaterials and Polymer Chemistry.

**RESEARCH PROJECTS**

- Macromolecules, polymers, and nanostructures for energy harvesting (organic solar cells and organic thermoelectric devices).
- Fluorescent colloids and their assembly.

**PROFESSIONAL SOCIETIES**

- American Chemical Society
- Kentucky Academy of Sciences

## RESEARCH

### Peer-Reviewed Publications:

1. Hemali P. Rathnayake, Todd Emrick, “Grafting-from nanoparticles using Aldol-Group Transfer Polymerization”, *Macromolecules* **2008**, 41(09), 2969-2971.
2. Hemali P. Rathnayake, Ali Cirpan, Michael Y. Odoi, Nathan I. Hammer, Michael D. Barnes, Frank E. Karasz, Paul M. Lahti, “Luminescence of Molecular and Block Copolymeric 2,7- Bis(phenylethenyl)-fluorenones: Identifying Green Band Emitter Sites in a Fluorenes Based Luminophore”, *Chem. Mater.* **2007**, 19(13), 3265-3270.
3. Ali Cirpan, Hemali P. Rathnayake, Frank E. Karasz and Paul M. Lahti “Luminance studies and device performance of molecular 2,7-fluorene vinylene pyrene and 2,7-fluorene phenylene vinylene pyrene derivatives”, *J. Mater. Chem.* **2007**, 17(29), 3030-3036.
4. Michael Y. Odoi, Nathan I. Hammer, Hemali P. Rathnayake, Paul M. Lahti and Michael D. Barnes, “Single Molecular Studies of a Model Fluorenone”, *ChemPhysChem.* **2007**, 8(10), 1481-1486.
5. Hemali P. Rathnayake, Ali Cirpan, Zeynep Delen, Paul M. Lahti and Frank E. Karasz, “Optimizing OLED Efficacy of 2,7- Diconjugated 9,9-Dialkylfluorenes by Variation of Periphery Substitution and Conjugation Length”, *Adv.Func. Mater.* **2007**, 17(1), 115-122.
6. Hemali P. Rathnayake, Ali Cirpan, Paul M. Lahti and Frank E. Karasz, “Optimizing LED Luminescent Properties in 2,7-Bis(Phenylethenyl)fluorenes”, *Chem. Mater.* **2006**, 18, 560-566.
7. Ali Cirpan, Hemali P. Rathnayake, Gorkem Gunbas, Frank E. Karasz and Paul M. Lahti “New conjugated materials containing cyano substituents for light-emitting diodes”, *Synthetic Metals.* **2006**, 156, 282-286.
8. Hemali Rathnayake, Jenna Binion, Aaron McKee, Debra Jo Scardino, and Nathan Hammer, “Perylenediimide functionalized bridged-siloxane nanoparticles for bulk heterojunction organic photovoltaics”, *Nanoscale* **2012**, 4(15), 4631-4640; (*Impact Factor 6.0*)
9. Hemali Rathnayake, Nicholas Wright, Amar Patel, Jenna Binion, Louis E McNamara, Debra Jo Scardino, and Nathan Hammer, “Synthesis and characterization of poly(3-hexylthiophene)-functionalized siloxane nanoparticles”, *Nanoscale* **2013**, 5, 3212-3215; (*Impact Factor 6.0*)
10. Lan Xu, Manda Venkata Ramana, John Ferguson, Louise McNamara, Muhammad Jahan, Hemali Rathnayake, and Nathan I Hammer, “Covalent synthesis of perylenediimide-bridged silsesquioxane nanoribbons and their electrical properties *RSC Advances* **2014**, 4 (57), 30172-30179 (*Impact Factor 3.70*)
11. Manda Venkata Ramana, Steven Guffery, Jeremiah Sharpsteen, John Ferguson, and Hemali Rathnayake, “Enhancing Device Performance of P3HT/PDIB Donor-Acceptor System using Spray-Coating Fabrication”, *ScienceJet* **2015**, 4, 153 (*Impact Factor 1.9*).
12. Begum Fouzia, John Ferguson, Kelly McKenna, Louise McNamara, Nathan I Hammer, and Hemali Rathnayake, “Preparation of n-Type Semiconducting Polymer Nanoarrays by Covalent Synthesis Followed by Crystallization”, *New Journal of Chemistry* **2015**, 39, 2004-2010 (*Impact Factor 3.0*).

13. Paige Huzyak, John Ferguson, Jeremiah Sharpsteen, Lan Xu, Soundaram Ananthkrishnan, and Hemali Rathnayake, "Fused Arenes-Functionalized Polyhedral Oligomeric Silsesquioxanes as Thermoelectric Materials", *RSC Advances* **2015**, 5, 37859-37868 (*Impact Factor* 3.70).
14. Dhamesh Patel, David Brown, Thulitha Abeywickrama, and Hemali Rathnayake, "Preparation of Semiconducting Polymer Nanorods by Base-Catalyzed Covalent Synthesis", *Science Advances Today*, **2015**, **1**, 25221.
15. Ananthkrishnan Soundaram, Jacob Strain, Abu Mitul, Louis McNamara, Nathan Hammer, Qiquan Qiao, and Hemali Rathnayake, "P3HT-*block*-Poly(anthracene-9,10-diyl) Donor-Donor polymer Dyad for Organic Photovoltaics", *J.Poly.Sci.A*, **2016**, DOI: 10.1002/pola.28189.
16. Thulitha Abeywickrama, Swapnil Share, and Hemali Rathnayake, "Aqueous Phase Synthesis and Electrical Characterization of Copper-Perylenediimide Silsesquioxane Nanocomposites", *RSC Advances* **2016** (under review).
17. Neerudu Niharika Sreenamulu and Hemali Rathnayake, "Green Synthesis of Multifluorescent Silsesquioxane Microparticles", *New Journal of Chemistry* **2016** (under review).

### Book Chapters

- Hemali Rathnayake and John Ferguson, Book Chapter on "Donor-Acceptor Functionalized Silsesquioxane Nanostructures for Organic-Based Photovoltaic devices", CRC Press, Taylor & Francis Group, Cat/ISBN: K22630 / 9781482229837

### Patents

1. Hemali Rathnayake, "Electronically active functionalized siloxane nanoparticles", USA, Patent serial # 13/275,771.
2. Hemali Rathnayake, "Process for Making Electronically Active Functionalized Silsesquioxane Nanostructures of Controlled Morphology Through Covalent Synthesis", USA, Patent serial # 14/032,650

### Conference Proceedings, 2009-2014

1. K. Woods, F. Ashrafzadeh, H. Rathnayake, "Organic solar cell energy harvesting, control, optimization, and commercialization – challenges & opportunities," *Proc. of IEEE/PEDG (Power Electronics for Distributed Generation Systems)*, July **2013**.
2. Aaron McKee, Jenna Binion, and Hemali Rathnayake, "Donor-Acceptor functionalized bridged siloxane nanoparticles: Synthesis, Particle morphology and Photovoltaic performance", *PMSE* **2012**, 108, 13.
3. Nicholas Wright, Amar Patel, Jenna Binion, and Hemali Rathnayake, "Poly(3-hexylthiophene) functionalized siloxane nanoparticles for organic-based solar cells", *PMSE* **2012**, 106, 12.
4. Christopher J. Simouth, Joseph A. Edge, Jenna Binion, and Hemali Rathnayake, "Fluorescein/FITC derivative functionalized silsesquioxane/bridge

silsesquioxane nanoparticles: Synthesis, Characterization and Particle Morphology”, *PMSE* **2010**.

### **Selected Conference Presentations, 2009-2015**

1. Ananthkrishnan Soundaram, Dharmesh Patel Rachana Neesu, and Hemali Rathnayake, “Fused arenes-based molecular systems as additives for organic photovoltaics,” Renewable Energy Workshop, March **2015**, Louisville, KY
2. Niharika Neerudu Sreeramulu and Hemali Rathnayake, “Multi-fluorescent core-shell silsesquioxane nanoparticles for Energy Harvesting”, Renewable Energy Workshop, March **2015**, Louisville, KY
3. Aubrey Penn, Anna Braun, Kelly McKenna, and Hemali Rathnayake, “Donor-Acceptor Functionalized Core-Shell nanoparticles for Organic Photovoltaics”, Renewable Energy Workshop, March **2015**, Louisville, KY
4. Dharmesh Patel Rachana Neesu, and Hemali Rathnayake, “Fused arenes-based molecular systems as additives for organic photovoltaics,” American Chemical Society Spring **2015**, Denver, CO, USA.
5. Kelly McKenna, John Ferguson, Paige Huzyak, Lan Xu, and Hemali Rathnayake, “Donor-Acceptor Functionalized Core-Shell nanoparticles for Organic Photovoltaics”, PMSE Division, American Chemical Society, Spring **2015**, Denver, CO, USA.
6. Anna Braun, John Ferguson, and Hemali Rathnayake, “Water Soluble Charged Nanoparticles Featuring Core-Shell Morphology for Energy Harvesting”, ENFL Division, American Chemical Society Spring **2015**, Denver, CO, USA.
7. Danielle Chavis, Jacob Strain, and Hemali Rathnayake, “Small Molecular Donor-Acceptor Dyads as additives for Organic photovoltaics”, ORGN Division, American Chemical Society Spring **2015**, Denver, CO, USA.
8. Rachana Neesu, Dharmesh Patel, and Hemali Rathnayake, “Fused arenes-based molecular systems as additives for organic photovoltaics,” Kentucky Academy of Sciences, November **2014**, Lexington, KY, USA.
9. Jeremiah Sharpsteen, Paige Huzyak, and Hemali Rathnayake, “Carbon based polysiloxane nanoarrays for the capture and conversion of human body waste heat into electricity”, American Chemical Society Spring **2014**, Dallas, TX, USA.
10. Venkata Ramana Manda, Hemali Rathnayake, “Enhancing Photovoltaic Performance of P3HT:PDIB-Silsesquioxanes Donor-Acceptor Using Spray Coating Fabrication Technique”, Energy Session, ACS Spring **2014**, Dallas, TX, USA. (Invited Talk)
11. Dharmesh Patel, David Brown, and Hemali Rathnayake, “Poly(3-hexylthiophene) Nanorods as a Donor for Organic Photovoltaics,” American Chemical Society Spring **2014**, Dallas, TX, USA.
12. Paige Huzyak, Jeremiah Sharpsteen, and Hemali Rathnayake, “Anthracene Functionalized Polyhedral Oligomeric Silsesquioxanes Synthesis, Characterization and Particle Morphology,” Kentucky Nanoparticle Symposium, August **2013**, Louisville, USA.
13. Paige Huzyak, Jeremiah Sharpsteen, and Hemali Rathnayake, “Anthracene Functionalized Polyhedral Oligomeric Silsesquioxanes Synthesis, Characterization and Particle Morphology,” 246<sup>th</sup> American Chemical Society Fall **2013**, Indianapolis, USA.

14. Paige Huzyak, Jeremiah Sharpsteen, and Hemali Rathnayake “Anthracene Functionalized Polyhedral Oligomeric Silsesquioxanes Synthesis, Characterization and Particle Morphology,” Experimental Program to Stimulate Competitive Research by National Science Foundation, November **2013**, Nashville, USA.
15. Dharmesh Patel, David Brown, and Hemali Rathnayake, “Poly(3-hexylthiophene) Nanorods as a Donor for Organic Photovoltaics,” Kentucky Academy of Sciences, November **2013**, Morehead, KY, USA.
16. Lan Xu, Venkata Ramana Manda, Jeremiah Sharpsteen, and Hemali Rathnayake, “Perylenediimide functionalized silsesquioxane nanoribbons for organic based solar cells”, PMSE division, ACS Spring **2013**.
17. Fouzia Begum, Venkata Ramana Manda, John Ferguson, and Hemali Rathnayake, “Perylenediimide functionalized silsesquioxane nanoflakes: Synthesis and Applications”, PMSE division, ACS Spring **2013**.
18. Harista Irrugulapati and Hemali Rathnayake, “ Novel  $\pi$ -conjugated organic macromolecules for field effect transistors”, Organic Division, ACS Spring **2013**.
19. Aaron McKee, Jenna Binion, and Hemali Rathnayake, “Donor-Acceptor functionalized bridged siloxane nanoparticles: Synthesis, Particle morphology and Photovoltaic performance”, PMSE division, ACS Spring **2012**.
20. Nicholas Wright, Amar Patel, Jenna Binion, and Hemali Rathnayake, “Poly(3-hexylthiophene) functionalized siloxane nanoparticles for organic-based solar cells”, PMSE division, ACS Spring **2012**.
21. John Ferguson, Leslie Wilson and Hemali Rathnayake, “Reactive group-functionalized fluorescent silsesquioxane nanoparticles for *E-coli* treatment in water: Synthesis, characterization and particle morphology”, Organic division, ACS Spring **2012**.
22. Malcolm R Davidson, Jenna Binion, and Hemali Rathnayake, “Derivatives of Polyfuran Copolymers for Organic-based Solar Cells”, Organic division, ACS Spring **2012**.
23. Harista Irugulapati, David Brown, Fouzia Begum, and Hemali Rathnayake, “Novel  $\Pi$ -Conjugated Organic Macromolecules for Organic Field Effect Transistors”, Nanotechnology Symposium, **2012**.
24. Aaron McKee, Jenna Binion, and Hemali Rathnayake, “Donor-Acceptor functionalized bridged siloxane nanoparticles: Synthesis, Particle morphology and Photovoltaic performance”, Nanotechnology Symposium, **2012**.
25. Nicholas Wright, Amar Patel, Jenna Binion, and Hemali Rathnayake, “Poly(3-hexylthiophene) functionalized siloxane nanoparticles for organic-based solar cells”, Nanotechnology Symposium, **2012**.
26. Leslie Wilson and Hemali Rathnayake, “Reactive group functionalized silsesquioxane nanoparticles for drug delivery applications: Synthesis, characterization and particle morphology”, KAS **2011**
27. Nicholas Wright, Byrechetti Kiranmai, Aaron McKee, and Hemali Rathnayake, "Electronically Active Bridged –Polysiloxane Nanoparticles: Synthesis, Characterization and Particle Morphology", Organic division, ACS Spring **2011**.
28. Joseph Edge, Christopher Simouth and Hemali Rathnayake, "Fluorescein isothiocyanate functionalized bridged-polysiloxane nanoparticles for imaging applications", Chemical Engineering division, ACS Spring **2011**.

29. Amar Patel and Hemali Rathnayake, "Poly-thiophene Derivatives Functionalized siloxane Nanohybrids: Synthesis, Characterization and Particle morphology", Solar division, KY Renewable Energy & Energy Efficiency Workshop **2011**.

## Grants and Contracts

### External Grants:

#### *Current*

1. Hemali Rathnayake, "Next Generation Energy Harvesting Materials for Green Energy Technology", KSEF-KCF, 1/1/2013-12/31/2015, \$74,722, Funded.
2. Hemali Rathnayake (PI), Rajalingam Dakshinamurthy (co-PI), Rodney King (co-PI), Muhammad Jahan (co-PI), Shivendra Shahi (co-PI), "MRI: Acquisition of an Analytical Transmission Electron Microscope with Cryogenic Imaging Capabilities for Research and Teaching at a PUI", MRI-NSF/CHE, 08/01/2013-07/31/2016, \$425,000, Funded.
3. Muhammad Jahan (PI), Hemali Rathnayake (co-PI), Rajalingam Dakshinamurthy (co-PI), and Sanju Gupta (co-PI), "MRI: Acquisition of an Analytical Scanning Electron Microscope for Engineering and Natural Sciences Research", MRI-NSF/CMMI, 07/01/2014-06/31/21017, \$193,695, Funded.
4. Hemali Rathnayake (Co-PI), Stuart Williams (PI), and Gerald Willings (Co-PI), "Influence of Gravity on Electrokinetic and Electrochemical Colloidal Self-Assembly for Future Materials", NASA EPSCoR, 10/01/2014 – 9/30/2017, \$183,398 (subaward), Funded.

#### *Previous*

5. Hemali Rathnayake (PI), "Carbon-Based Siloxane Nanoarrays for Power Generation from Waste Heat", NSF/EPSCoR/R-REG, 2/1/2013-8/30/2013, \$22,522, Funded.
6. Hemali Rathnayake (PI), "Carbon-Based Siloxane Nanoarrays for Power Generation from Waste Heat", KSEF-RDE, 7/1/2014-6/30/2015, \$30,000, Funded.
7. Hemali Rathnayake (PI), "Small molecular donor-acceptor dyads as additives for organic solar cells", NSF EPSCoR-RSP, 1/1/2015 – 8/30/2015, \$7,500, Funded.
8. Hemali Rathnayake (PI), "Next Generation Flexible Organic Solar cells through Roll-to-Roll Fabrication", NSF EPSCoR-EI, 05/01/2015 – 7/31/2015, \$10,000, Funded.

### Internal Grants:

1. Hemali Rathnayake "Carbon-Based Siloxane Nanoarrays for Power Generation from Waste Heat", RCAP, 1/1/2013-12/31/2013, \$10,000.
2. Hemali Rathnayake. "Next Generation Energy Harvesting Materials for Green Energy Technology", RCAP, 1/1/2012-12/31/2012. \$18,000.
3. Hemali Rathnayake and Matthew Byrne (student), "Power Generation from Heat Utilizing Carbon-based Macromolecules", FUSE – 12-SF114, Spring 2012, \$3000.

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4. Hemali Rathnayake and Alice Byrne (student), “Nanoscale Organic Plastics for Green Energy Technology”, FUSE – 12-SF111, Spring 2012, \$3000.
5. Hemali Rathnayake and John Ferguson (student), “Large-scale synthesis of solution processible plastics for organic-based solar cells”, FUSE – 12-SP196, Spring 2013, \$3000.
6. Hemali Rathnayake and Paige Huzyak (student), “Organic semiconductors-functionalized POSS as promising materials for thermoelectric”, FUSE – 13-FA120, Fall 2013, \$3000.
7. Hemali Rathnayake and Jeremiah Sharpsteen (student), “Carbon-based polysilsesquioxane nanoarrays for thermoelectric”, FUSE – 14-SP117, Spring 2014, \$3000.
8. Hemali Rathnayake and Dharmesh Patel (student), “Poly-3-hexylthiophene Nanorods as donor for organic-based photovoltaics”, FUSE – 14-FA151, Fall 2014, \$3000.
9. Hemali Rathnayake and Aubrey Penn (student), “Organic-Based Donor-Acceptor Core-Shell Nanostructures for More Efficient Photovoltaics”, FUSE – 15-FA205, Fall 2015, \$3000.

### Entrepreneurships

- Founder of *Serendib Solar Plastics, LLC*, which received Phase Zero from Kentucky Science & Engineering Foundation and Entrepreneurship internship grant from NSF EPSCoR EI program.

### TEACHING

Fall 2009- 2016:

<u>Course Taught</u>	<u>Course Name</u>	<u>Semesters</u>
• CHEM 340	Organic Chemistry I	6
• CHEM 341	Organic Chemistry I Lab	8
• CHEM 342	Organic Chemistry II	8
• CHEM 343	Organic Chemistry II Lab	6
• CHEM 120	College Chemistry I	1
• CHEM 541	Advanced Organic Chemistry	4
• CHEM 580	Lab Chemical	1
Total course sections taught		34

### SERVICE

#### Regional/State level

- Proposal Reviewer for KY NASA EPSCoR- RIDG Program, 2015.

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- KY State wide Renewable Energy & Energy Efficiency Workshop - Solar Division committee and co-chair, 2011-Current.
- KY NanoNet Symposium, Co-Chair for Energy division, 2013.
- KY NanoNet Symposium, Technical Committee, 2013.

### National level

- American Chemical Society National Meeting, Indianapolis, Organic Division, Session Chair, 2013 Fall meeting.
- Reviewer for journal publishers; American Chemical Society, Royal Society of Chemistry, Springer, and IEEE.

### Editorial Board

- Associate Editor, Journal of Nanoscience Letters ([www.cognizure.com/pubs](http://www.cognizure.com/pubs)) - From 07/01/2014 - Current.

## SYNERGISTIC ACTIVITIES

- Currently supervising two undergraduate students, one BS/MS student, two Masters' graduate students, a Joint Ph.D. student from UofL Dept. of Chemistry, and a postdoctoral research associate.
- Mentored an undergraduate chemistry major student, Nicholas Wright who received an NSF Graduate Fellowship in Chemistry 2012. This was the first time a WKU student received this fellowship.
- Mentored a Gatton Academy student, David Brown to receive 2013 Barry Goldwater Scholarship.
- Member of the Technical Committee in the International Conference on Advanced Materials Research (ICAMR-12).
- Member of the organizational committee of Conn Center Renewable Energy & Energy Efficiency Workshop.
- Member of the Technical committee of KY NanoNet Symposium.

## AWARDS AND RECOGNITION

1. Nominated for the Ogden College Faculty Award for Research and Creativity, January **2015**, Western Kentucky University.
2. First Time Awardee Recognition for the fiscal year 2013 from the Office of Research, December **2013**, Western Kentucky University
3. Most Prolific Proposer by College Award for the fiscal year 2013 from the Office of Research, December **2013**, Western Kentucky University.
4. Junior Investigator Award for the fiscal year 2013 from the Office of Research, December **2013**, Western Kentucky University.

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5. In Recognition of Significant Progress Towards Commercialization from the Office of Research, November **2012**, Western Kentucky University.
6. Nominated for the Ogden College Faculty Award for Research and Creativity, January **2012**, Western Kentucky University.
7. Nominated for the Ogden College Faculty Award for student advisement, January **2010**, Western Kentucky University.
8. Bucks for Bright Ideas Award from Small Business Accelerator and the Center Region Innovation and Commercialization, **2010**, Bowling Green, Ky.
9. Outstanding Research Achievement Award in the 15<sup>th</sup> Annual Research Symposium **2005**, Department of Chemistry, University of Massachusetts Amherst.
10. Outstanding Research Achievement Award in the 14<sup>th</sup> Annual Research Symposium **2004**, Department of Chemistry, University of Massachusetts Amherst.

## COLLABORATORS AND AFFILIATIONS

- Collaborators and Co-Editors:
  - Paul M. Lahti University of Massachusetts Amherst, MA
  - Michael D. Barnes University of Massachusetts Amherst, MA
  - Todd Emrick University of Massachusetts Amherst, MA
  - Frank E. Karasz University of Massachusetts Amherst, MA
  - Nathan I Hammer University of Mississippi Oxford, MS
  - Keith Hollis Mississippi State University MS.
  - Jinjun Liu University of Louisville Louisville, KY
  - S. Thayumanavan University of Massachusetts Amherst, MA
  - Gamini Sumanasekera University of Louisville Louisville, KY
  - Qiao Quang South Dakota State University Brookings, SD
  - Zhengtao Zhu South Dakota School of Mines & Technology Rapid City, SD
  - Shenqiang Ren University of Kansas Lawrence, KS
  - Stuart William University of Louisville Louisville, KY
  - Thad Druffel University of Louisville Louisville, KY
- Graduate Advisor
  - Paul M. Lahti University of Massachusetts Amherst, MA
- Postdoctoral Advisor:
  - Todd Emrick University of Massachusetts Amherst, MA

## OTHER

- National Level Student Awards Received under Direct Supervision
  - David Brown, Barry Goldwater Scholarship, **2013**.
  - Nicholas Wright, NSF Graduate Fellowship in Chemistry, **2012**.
- Undergraduate Research Theses Produced:

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- Nicholas Wright; Thesis title: “*Using two different approaches for the creation of poly(3-hexylthiophene)-functionalized siloxane nanoparticles for organic-based solar cells*”, Spring **2012**.
- Joseph A Edge; Thesis title: “*FITC-functionalized silsesquioxane nanoparticles for the treatment of drinking water*”, Fall **2012**.
- Dharmesh Patel; Thesis title: “*Poly-3-hexylthiophene Nanorods as donor for organic-based photovoltaics*”, Fall **2014**
- John Ferguson; Thesis Title: *Synthesis and Application of PDIB Nanostructures in Solar Cells*”, Spring **2015**
  
- Graduate Research Theses Produced:
  - Harista Irugalapati; Thesis title: “*Fused Arenes-Based Molecular and Polymeric Materials for Field Effect Transistors*”, Spring **2013**.
  - Manda Venkata Ramana; Thesis title: “*Enhancing photovoltaic performance of P3HT/PDIB silsesquioxane using spray-coating technique*”, Spring **2014**.
  - Lan Xu; Thesis title: “*Perylenediimide-functionalized silsesquioxane nanoribbons for solar cell applications*”, Spring **2014**.
  - Rachana Neesu, Thesis title: “*Fused Arene- Based Small Molecular Systems as Additives for Organic Solar Cells*”, Spring **2015**.
  
- Undergraduate and Graduate Research Students Mentored
  - Undergraduate students mentored to-date (30)
  - Graduate students mentored (4)
  
- Current undergraduate students (2):
  - Logan Nofsiger
  - Wendy Loomis
  - Danielle Chavis
  
- Current graduate students (8):
  - Avinash Jami 2<sup>nd</sup> year graduate student (Fall 2015)
  - Neerudu Niharika 2<sup>nd</sup> year graduate student (Spring 2016)
  - Swapnil Sahare 2<sup>nd</sup> year graduate student (Spring 2016)
  - Thulitha Abewickrama 1st year graduate student (Summer 2016)
  - Dharmesh Patel 1st year graduate student (Summer 2016)
  - Jeremiah Sharpsteen 1st year graduate student (Summer 2016)
  - Paige Huzyak BS/MS student (Spring 2016)
  - Aubrey Penn BS/MS student (Fall 2016)
  
- Joint Ph.D graduate student at Chemistry, University of Louisville:
  - Jacob Strain
  
- Postdoctoral Research Associates (1):
  - Dr. Ananthkrishnan Soundaram.