Kyle N. Plunkett, Ph.D.

Southern Illinois University
Department of Chemistry and Biochemistry
1245 Lincoln Dr.
Carbondale, IL 62901
www.saluki-materials-lab.com

618-453-2758
kplunkett@chem.siu.edu

APPOINTMENTS

Southern Illinois University, Carbondale, IL — Aug. 2021-Present
Professor
Department of Chemistry and Biochemistry

National Renewable Energy Laboratory, Golden, CO — Aug. 2022-Jun 2023
Sabbatical, Visiting Professor

Southern Illinois University, Carbondale, IL — Aug. 2015-July 2021
Associate Professor
Department of Chemistry and Biochemistry

Southern Illinois University, Carbondale, IL — Sept. 2010-Jun. 2015
Assistant Professor
Department of Chemistry and Biochemistry

EDUCATION

University of Illinois, Urbana-Champaign, IL — Oct. 2005
Ph.D. Chemistry, Advisor: Jeffrey S. Moore
Thesis Title: "Hydrogels for Biomacromolecule Immobilization and Sensing"

Texas A&M University, College Station, TX — May 2000
B.S. Chemistry, Advisor: David Bergbreiter

RESEARCH EXPERIENCE

Columbia University, New York, NY — 2006 - 2010
Postdoctoral Associate, Advisor: Colin Nuckolls

Max Planck Institute for Polymer Research, Mainz, Germany — 2005 - 2006
Alexander von Humboldt Postdoctoral Fellow, Advisor: Klaus Müllen

TEACHING EXPERIENCE

Professor, Southern Illinois University — 2010-Present
Chem 340 – Organic Chemistry I
Chem 541 – Organic Structure and Reactivity
Chem 341 – Organic Chemistry Laboratory I
Chem 443 – Organic Chemistry Laboratory II

PUBLICATIONS *=corresponding author

49) Pandey, K., Orton, L., Venus, G., Hussain, W., Woods, T., Wang, L., Plunkett, K. N., "Supramolecular Assembly of Hypervalent Iodine Macrocycles and Alkali Metals", ChemRxiv, 2024, https://doi.org/10.26434/chemrxiv-2024-1lj6h

48) Pandey, K., Uddin, A., Plunkett, K.N., "Towards Hypervalent Iodine Macrocycles based Supramolecular Cages", ChemRxiv, 2024, https://doi.org/10.26434/chemrxiv-2024-3mw8k

47) Pandey, K., Arafin, S., Venus, G., Jones, E., Du, Y., Pandey, M. D., Awais, T., Wang, L., Plunkett, K.N., "Pi-extended Hypervalent Iodine Macrocycles and Their Supramolecular Assembly with Buckminsterfullerene", *J. Mater. Chem. C*, **2025**, 13, 842-848 DOI: 10.1039/D4TC04251D. https://doi.org/10.26434/chemrxiv-2024-13rlh

46) Pandey, K., Arafin, S., Jones, E., Du, Y., Kulkarni, G., Uddin, A., Plunkett, K.N., "Assembly and Disassembly of Supramolecular Hypervalent Iodine Macrocycles via Anion Coordination", *J. Org. Chem.*, **2024**, 89, 7437-7445. https://doi.org/10.26434/chemrxiv-2023-s7386

45) Du, Y., Pandey, K. Plunkett, K.N., "Diels-Alder Additions to 2,2'-Biaceanthrylene", *Helv. Chim. Acta*., **2023**, 106, e202200126. https://doi.org/10.26434/chemrxiv.14479698.v1

44) Uddin, A., Pandey, K., Plunkett, K.N., ""Indacenodipyrene Containing Small Molecules and Ladder Polymers", Tetrahedron Chem., 2022, 2, 100019. https://doi.org/10.26434/chemrxiv-2021-pw9fj

43) Hussain, W.A., Plunkett, K.N. "Benzodithiophene Fused Cyclopentannulated Aromatics via a Palladium-Catalyzed Cyclopentannulation and Scholl Cyclodehydrogenation Strategy", *J. Org. Chem.* **2021**, 86, 12569-12576. https://doi.org/10.26434/chemrxiv.14485224.v1

42) Sekulovski, N., MacLean II, J.A., Bheemireddy, S.R., Yu, Z., Okuda, H., Plunkett, K.N., Matzuk, M., and Hayashi, K. "Niclosamide's Potential Direct Targets in Ovarian Cancer", *Biol. Reprod.* **2021**, doi: 10.1093/biolre/ioab071.

41) Hussain, W.A., Plunkett, K.N., "Synthesis of Anthradithiophene Containing Conjugated Polymers via a Cross-coupling Strategy", RSC Adv., **2021**, 11, 996-1000.
ChemRxiv, **2020**, https://doi.org/10.26434/chemrxiv.12702485.v1

40) Du, Y., Lovell, H. B., Lirette, F., Morin, J.-F., Plunkett, K.N., "Electron Acceptors Based on Cyclopentannulated Anthanthrenes", J. Org. Chem., **2021**, 86, 1456-1464.
ChemRxiv, **2020**, https://doi.org/10.26434/chemrxiv.12252224.v1

39) Uddin, A., Plunkett, K.N., "Donor Acceptor Copolymers from Cyclopentannulation Polymerizations with Dicyclopenta[cd,jk]pyrene and Dicyclopenta[cd,lm]perylene Acceptors", *J. Polym. Sci.*, **2020**, 58, 3165-3169. ChemRxiv, **2020**, https://doi.org/10.26434/chemrxiv.12344258.v1

38) Du, Y., Wang, L., Plunkett, K.N., "1,1'-Biaceanthrylene and 2,2'-Biaceanthrylene: Models for Linking Larger Polycyclic Aromatic Hydrocarbons via Five-Membered Rings", J. Org. Chem, **2020**, 85, 79-84.
Invited J. Org. Chem Issue on "Functional Organic Materials"
ChemRxiv version. https://doi.org/10.26434/chemrxiv.9209546.v1

37) Uddin, A., Sang, W., Gao, Y., Plunkett, K.N., "Functional Poly(p-Xylylene)s via Chemical Reduction of Poly(p-Phenylene Vinylene)s", Macromolecules, **2019**, 52, 9799-9803.
ChemRxiv version https://doi.org/10.26434/chemrxiv.9868196.v1

36) Plunkett, K.N., "A Simple and Practical Method for Incorporating Augmented Reality into the Classroom and Laboratory", *J. Chem. Educ.*, **2019**, 96, 2628-2631.

ChemRxiv version. https://doi.org/10.26434/chemrxiv.7137827.v1

35) Bheemireddy, S.R., Hussain, W.A., Uddin, A., Du, Y., Hautzinger, M.P., Kevorkian, P.V., Petrie, F.A., Plunkett, K.N., "Cyclopentannulation and Cyclodehydrogenation of Isomerically Pure 5,11-Dibromo-Anthradithiophenes Leading to Contorted Aromatics", *ChemComm*, **2018**, 54, 14140-14143.
ChemRxiv version. https://doi.org/10.26434/chemrxiv.7066622.v1

34) Kulkarni, G.C., Morales-Cruz, J.L., Hussain, W.A., Garvey, I.J., Plunkett, K.N., "Electron Acceptors Based on Cyclopentannulated Tetracenes", *Syn. Lett.*, **2018**, 29, 2572-2576.
Invited Synlett Cluster Issue on the "Synthesis of Materials"

33) Claywell, J. E., Matschke, L.M., Plunkett, K.N., Fisher, D.J., "Inhibition of the Protein Phosphatase CppA Alters Development of Chlamydia trachomatis", *J. Bacteriol.*, **2018**, 200, e00419-18.

32) Bheemireddy, S., Hautzinger, M.P., Li, T., Lee, B., Plunkett, K.N.*, "Conjugated Ladder Polymers by a Cyclopentannulation Polymerization", *J. Am. Chem. Soc.*, **2017**, 139, 5801-5807.

31) Shao, B., Zhu, X., Plunkett, K.N.*, Vanden Bout, D.A.*, "Controlling the Folding of Conjugated Polymers at the Single Molecule Level via Hydrogen Bonding", *Polym. Chem.* **2017**, 8, 1188-1195.

30)Yuan, B., Zhuang, J., Kirmess, K.M., Bridgmohan, C.N., Whalley, A.C., Wang, L., Plunkett, K.N.*, "Pentaleno[1,2-a:4,5']diacenaphthylenes: Uniquely Stabilized Pentalene Derivatives", *J. Org. Chem.*, **2016**, 81, 8312-8318.

29) Zhu, X., Shao, B., Vanden Bout, D.A.*, Plunkett, K.N.*, "Directing the Conformation of Oligo(Phenylene Vinylene) Polychromophores with Rigid, Non-Conjugatable Morphons", *Macromolecules*, **2016**, 49, 3838-3844.

28)Bheemireddy, S. R., Ubaldo, P.C., Finke, A.D., Wang, L., Plunkett, K.N.*, "Contorted Aromatics via a Palladium-Catalyzed Cyclopentannulation Strategy", *J. Mater. Chem. C.*, **2016**, 4, 3963-3969. *2016 Emerging Investigators Themed Issue: Novel design strategies for new functional materials.*

27)Bheemireddy, S.R., Plunkett, K.N.*, "Dicyclopenta[cd,jk]pyrene Based Acceptors in Conjugated Polymers", *Polym. Chem.* **2016**, 7, 292-296.

26)Zhu, X., Bheemireddy, S.R., Sambasivarao, S.V., Rose, P.W., Guzman, R.T., Waltner, A.G., DuBay, K.H.*, Plunkett, K.N.*, "Construction of Donor-Acceptor Polymers via Cyclopentannulation of Poly(arylene ethynylene)s", *Macromolecules*, **2016**, 49, 127-133.

25)Bheemireddy, S.R., Ubaldo, P.C., Rose, P.W., Finke, A.D., Zhuang, J., Wang, L., Plunkett, K.N.*, "Stabilizing Pentacene via Cyclopentannulation", *Angew. Chem. Int. Ed.*, **2015**, 54, 15762-15766.

24)Zhu, X., Yuan, B., Plunkett, K.N.*, "Tunable Electron Acceptors Based on Cyclopenta[hi]aceanthrylenes", *Tetrahedron Lett.* **2015**, 56, 7105-7107

23)Truong, M.L., Shi F., He, P., Yuan, B., Plunkett, K.N., Coffey, A.M., Shchepin, R.V., Barskiy, D.A., Kovtunov, K.V., Koptyug, I.V., Waddell, K.W., Goodson, B.M., Chekmenev, E.Y., "Irreversible Catalyst Activation Enables Hyperpolarization and Water Solubility for NMR Signal Amplification by Reversible Exchange", *J. Phys. Chem. B.*, **2014**, 118, 13882-13889.

22)Zhu, X., Plunkett, K.N.*, "Controlled Regioregularity in Oligo(2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylenevinylenes", *J. Org. Chem*, **2014**, 79, 7093-7102.

21)Howe, S.E., Lickteig, D.J., Plunkett, K.N., Ryerse, J.S., Konjufca, V.H., "The uptake of soluble and particulate antigens by epithelial cells in the mouse small intestine", *PLOS ONE*, **2014**, 9, e86656.

20)Traub, M.C., DuBay, K.H., Ingle, S.E., Zhu, X., Plunkett, K.N., Reichman, D.R., Vanden Bout, D.A., "Chromophore Controlled Self-Assembly of Highly-Ordered Polymer Nanostructures", *J. Phys. Chem. Lett.*, **2013**, 4, 2520-2524.

19)Plunkett, K.N.* "What About the Five-Membered Ring? Cyclopenta-fused Polycyclic Aromatic Hydrocarbons as a Building Block for Functional Materials", *Syn. Lett.* (Invited SYNPACTS article), **2013**, 24, 898-902.

18)Lee, C.-H., Plunkett, K.N.*, "Orthogonal Functionalization of Cyclopenta[hi]aceanthrylenes", *Org. Lett.*, **2013**, 15, 1202-1205.

17)Jellison, J.L., Lee, C.-H., Zhu, X., Wood, J.D., Plunkett, K.N.*, "Electron Acceptors Based on an All-Carbon Donor-Acceptor Copolymer", *Angew. Chem. Int. Ed*., **2012**, 51, 12321-12324.

16)Wood, J.D., Jellison, J.L., Finke, A.D., Wang, L., Plunkett, K.N.*, "Electron Acceptors Based on Functionalizable Cyclopenta[hi]aceanthrylenes and Dicyclopenta[de,mn]tetracenes, *J. Am. Chem. Soc.*, **2012**, 134, 15783-15789.

15)Zhu, X., Traub, M.C., Vanden Bout, D.A., Plunkett, K.N.*, "Well-Defined Alternating Copolymers of Oligo(phenylenevinylene)s and Flexible Chains", *Macromolecules*, **2012**, 45, 5051-5057.

Prior to SIU

14)Schiros, T., Kladnik, G., Prezzi, D., Ferretti, A., Olivieri, G., Cossaro, A., Floreano, L., Verdini, A., Schenck, C., Cox, M., Plunkett, K.N., Delongchamp, D., Nuckolls, C., Morgante, A., Cvetko, D., Kymissis, I., "Donor-acceptor Shape Matching Drives Performance in Photovoltaics", *Adv. Energy Mater.*, **2013**, 3, 894-902.

13)Traub, M.C., Vogelsang, J., Plunkett, K.N., Nuckolls, C., Barbara, P.F., Vanden Bout, D.A., "Unmasking Bulk Exciton Traps and Interchain Electronic Interactions with Single Conjugated Polymer Aggregates", *ACS Nano*, **2012**, 6, 523-529.

12)Bounos, G., Ghosh, S., Lee, A.K., Plunkett, K.N., DuBay, K.H., Bolinger, J.C., Zhang, R., Friesner, R.A., Nuckolls, C., Reichman, D.R., Barbara, P.F., "Controlling Chain Conformation in Conjugated Polymers Using Defect Inclusion Strategies", *J. Am. Chem. Soc.*, **2011**, *133*, 10155-10160.

11)Whalley, A.C., Plunkett, K.N., Gorodetsky, A.A., Schenk, C.L., Chiu, C.-Y., Steigerwald, M.L., Nuckolls, C., "Bending Contorted Hexabenzocoronene into a Bowl", *Chem. Sci.*, **2011**, 2, 132-135.

10)Plunkett, K.N., Godula, K., Nuckolls, C., Tremblay, N., Whalley, A.C., Xiao, S., "Expeditious Synthesis of Contorted Hexabenzocoronenes", *Org. Lett.* **2009**, 11, 2225-2228.

9)Plunkett, K.N., Zhu, X., Moore, J.S., Leckband, D.E., "PNIPAM Chain Collapse Depends on the Molecular Weight and Grafting Density", *Langmuir* **2006**, 22, 4259-4266.

8)Weissman, H., Plunkett, K.N., Moore, J.S., "A Highly-Active, Heterogeneous Catalyst for Alkyne Metathesis", *Angew. Chem. Int. Ed.* **2006**, 45, 585-588.

7)Plunkett, K.N., "Hydrogels for Biomacromolecule Immobilization and Sensing", Ph.D. Thesis, University of Illinois- Urbana-Champaign, IL, **2005**.

6)Plunkett, K.N., Mohraz, A., Haasch, R.T., Lewis, J.A., Moore, J.S., "Light-Regulated Electrostatic Interactions in Colloidal Suspensions", *J. Am. Chem. Soc.* **2005**, 127, 14574-14575.

5)Plunkett, K.N., Berkowski, K.L., Moore, J.S., "A Chymotrypsin Responsive Hydrogel – Application of a Chemoselective Conjugation Protocol for the Preparation of Methacrylamide Containing Peptides", *Biomacromolecules* **2005**, 6, 632-637.

4)Berkowski, K.L, Plunkett, K.N., Yu, Q., Moore, J.S., "Introduction to Photolithography – Preparation of Microscale Polymer Silhouettes", *J. Chem. Ed.* **2005**, 82, 1365-1369.

3)Plunkett, K.N., Moore, J.S., "Patterned Dual pH-Responsive Core-Shell Hydrogels with Controllable Swelling Kinetics and Volumes", *Langmuir* **2004**, 20, 6535-6537.

2)Plunkett, K.N., Chatterjee, A. N., Aluru, N. R., Moore, J. S. "Surface-Modified Hydrogels for Chemoselective Bioconjugation", *Macromolecules* **2003**, 36, 8846-8852.

1)Plunkett, K.N., Kraft, M. L., Yu, Q., Moore, J. S. "Swelling Kinetics of Disulfide Cross-Linked Microgels", *Macromolecules* **2003**, *36*, 3960-3966.

PATENTS

Kirmess, K., Kinsel, G.R., Plunkett, K.N. "Alpha-cyano-4-hydroxy-3-iodocinnamic acid as a Matrix in MALDI Mass Spectrometry" **2019,** US 2019/0161438, US 10,464,886

Weissman, H., Plunkett, K.N., Cho, H.-M., Moore, J.S. "Alkyne Metathesis using Molybdenum Carbyne Complexes on Metal Oxide Supports", **2006**, WO/2006/135631.

AWARDED RESEARCH FUNDING

Meyers Institute for Organic Chemistry
"Rational Design and Synthesis of Organic Small Molecules for Coherent Fluorescence Sensors"
$11,965 (co-PI, PI – Lichang Wang) 09/01/2024 – 08/31/2025 Status: Current

National Science Foundation
"Hypervalent Iodine Based Materials"
$450,000 (PI) 07/01/20 – 06/30/23 Status: Completed

National Science Foundation
"MRI: Acquisition of analytical Atomic Force Microscope for Research and Education at SIUC"
$171,388 (Co-PI, PI – Punit Kohli) 09/01/19 – 08/31/21 Status: Completed

National Science Foundation
"REU Site in Interdisciplinary Materials Research"
$384,244 (Senior Investigator, PI- Boyd Goodson) 01/17/18 – 03/31/21 Status: Completed

National Institutes of Health – USDHHS/NIH/NIAID
"Unraveling the role of protein phosphorylation in the regulation of development in Chlamydia trachomatis"
$442,500 (Senior Investigator, PI- Derek Fisher – Microbio.) 06/01/18 – 05/31/21 Status: Completed

National Science Foundation – CHE-MSN
"CAREER: Electron Acceptor Materials Based on Cyclopenta-fused Polycyclic Aromatic Hydrocarbons"
$650,000 (PI) 02/01/14 – 08/30/20 Status: Completed

National Science Foundation
"REU Site in Interdisciplinary Materials Research"
$330,000 (Senior Investigator, PI- Boyd Goodson) 04/01/15 – 03/31/19 Status: Completed

SIU Competitive Collaborative Seed Grant
"Surface functionalization of titanium dioxide for electrochemical sensing and release"

$47,452 (PI) 06/01/14 – 09/01/15 Status: Completed

National Science Foundation
"REU Site for Interdisciplinary Materials Research"
$315,000 (Senior Investigator, PI – Boyd Goodson) 05/01/2012 – 04/30/16 Status: Completed

Illinois Clean Coal Institute
"Coal Based Solar Cells"
$44,900 (PI) 12/01/13 – 11/30/14 Status: Completed

SIU Competitive Seed Program
"N-type Semiconductors for Organic Photovoltaic Devices"
$16,725 (PI) 07/01/11 – 06/30/12 Status: Completed

AWARDS AND PROFESSIONAL ACTIVITIES

J. Mater. Chem. Emerging Investigator themed issue	2016
NSF CAREER Award	2014
University-Level Early Career Faculty Excellence Award	2014
Thieme Chemistry Journal Award	2014
Alexander von Humboldt Postdoctoral Fellowship	2006
Dow Chemical Scholarship in connection with summer internship	1999
Monsanto Chemistry Scholarship	1998

INVITED DEPARTMENTAL SEMINARS

Old Dominiun University, September 2023
Murray State University, February 2019
University of Denver, January 2019
Boston University, April 2018
Tufts University, April 2018
Southern Illinois University, Edwardsville, Feb 2018
Millersville University, Nov 2017
Tianjin University, Oct 2017
Wuhan University of Technology, Oct 2017
Zhengzhou University, Oct 2017
University of Georgia, Oct 2017
University of Illinois-Chicago, Sept 2017
University of Vermont, Sept 2016
Tianjin University, Jul 2016
Zhengzhou University, Jul 2016
University of Houston, Apr 2016
University of Texas at Dallas, Apr 2016
Purdue University, Feb 2016
Miami University, Nov 2015
University of Kentucky, May 2015
University of Oregon, Apr 2015
University of Texas at Austin, Mar 2015
Texas A&M University, Mar 2015
Southeast Missouri State University, Oct 2014
Shanghai Jiao Tong University, May 2014
Peking University, May 2014
University of Missouri-Columbia, Mar 2014
St. Louis University, Dec 2013
University of Louisville, Oct 2013

UPCOMING DEPARTMENTAL PRESENTATIONS

NA

INVITED CONFERENCE PRESENTATIONS

"Epilogue of our Cyclopenta-fused Polycyclic Aromatic Hydrocarbon Journey", American Chemical Society, Chicago, IL 2022

"Conjugated Polymers via Cyclopentannulation Strategies", Midwest Regional ACS Meeting, Midwest Award Winner Symposium, Ames, IA, Oct. 2018

"Conjugated Polymers via Cyclopentannulation Strategies", Fusion Conference – From Carbon-Rich Molecules to Carbon-Based Materials 2, Nassau, Bahamas, Jun 2018

"Utilizing Palladium-Catalyzed Cyclopentannulations to Access Contorted Aromatics", 2nd International Symposium on the Synthesis and Application of Curved Organic pi-Molecules and Materials (CURO-pi), Eugene, OR Sept. 2016.

"Low Band Gap Materials From Cyclopenta-Fused Polycyclic Aromatic Hydrocarbons", Materials Research Symposium, Fundamentals of Organic Semiconductors: Synthesis, Morphology, Devices, and Theory" Boston, MA Dec 2014

"Low Band Gap Materials From Cyclopenta-Fused Polycyclic Aromatic Hydrocarbons", Fusion Conference – From Carbon-Rich Molecules to Carbon-Based Materials, El Jadida, Morocco, Sept 2014

"Synthesis and Characterization of Cyclopent-fused Polycyclic Aromatic Hydrocarbon-Based Electron Accepting Materials", International Symposium on Advances in Computational Materials for Catalysis and Photovoltaics, Tianjin University, Tianjin, China May 2014

"Conjugated Polymer Copolymerized with Flexible Chains: A Platform to Create Highly Ordered Polymer Nanostructures", ACS 2013, Indianapolis Sept 2013.

"Organic Polymers - A Necessity for Today's Technology", Think Science, Saluki Research Ambassadors, Carbondale, IL Mar 2013.

"Low Band Gap Polymers Based on Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", ACS 2012, Philadelphia, PA Aug 2012.

CONTRIBUTED PRESENTATIONS

"Supramolecular Chemistry of Hypervalent Iodine Based Macrocycles, American Chemical Society, Denver, CO, Aug 2024.

"Linking Cyclopenta-Polycyclic Aromatic Hydrocarbons via Five-to-Five Connections, American Chemical Society, San Diego, Aug 2019

"Conjugated Polymers via Cyclopentannulation Strategies", American Chemical Society, New Orleans, Mar 2018

"Conjugated Polymers via Cyclopentannulation Strategies", ISNA 2017, Stony Brook, NY, July 2017

"Conjugated Polymers via Cyclopentannulation Strategies", Polymers Gordon Research Conference, Mount Holyoke College, South Hadley, MA, June 2017

"Self-Assembly of Hypervalent Iodine Based Materials & New Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", Alexander Von Humboldt Colloquim, Washington D.C., USA, Mar 2017

"Self-Assembly of Hypervalent Iodine Based Materials", ISCSM 2016, Seoul, Korea July 2016

"Contorted Aromatics and Polymers from Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", Pacifichem 2015, Honolulu, HI, Dec 2015

"Engineering Polymer Self-Assembly by Sidechain Modification in Phenylene Vinylene Polychromophores", Pacifichem 2015, Honolulu, HI, Dec 2015

"Contorted Aromatics from Cyclopentafused Polycyclic Aromatic Hydrocarbons", Fpi-12, Seattle, WA, July 2015.

"Contorted Aromatics and Polymers from Cyclopentafused Polycyclic Aromatic Hydrocarbons", ISNA-16, Madrid, Spain July 2015. (Poster)

"Engineering Polymer Self-Assembly via Sidechain Modification in Phenylene Vinylenes", ACS 2014, San Francisco Aug 2014.

"Functionalization Strategies of a Few Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", ACS 2014, Dallas, TX Mar 2014.

"Functionalization Strategies of a Few Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", Physical Organic Gordon Research Conference, Holderness, NH Jun 2013. (Poster)

"Tunable Electron Acceptors based on Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", ACS, 2012, Philadelphia, PA Aug 2012.

"Low Band Gap Polymers Based on Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", ICSM 2012, Atlanta, GA July 2012.

"Low Band Gap Polymers Based on Cyclopenta-fused Polycyclic Aromatic Hydrocarbons", IUPAC MACRO 2012, Blacksburg, VA June 2012.

"Acetetrylenes: Nonalternant Cyclopentafused Aromatic Hydrocarbons", ISNA-14, Eugene, OR July 2011.

"Preparation and Application of Borylated Hexabenzocoronenes in Organic Devices", ACS, Boston, MA Aug 2007.

"Hydrogels with Cleavable Crosslinker as Sacrificial Structures and Sensors for Microfluidic Systems", MicroTas, Nara, Japan Nov 2002.

"Hydrogels for Surface Localized Chemoselective Conjugation", Allerton Conference, Monticello, IL Oct 2002.

"Fluorescently-labeled, Diblock Copolymers Useful for Probing Macromolecular Assemblies", Texas A&M University Undergraduate Poster Symposium, College Station, TX Apr 2000.

PROFESSIONAL ACTIVITIES

Southern Illinois Local ACS Section, *Chair*	2015
Cal Meyers Memorial Organic Chemistry Symposium, *Co-organizer*	2012,14,16
NSF Proposals, *Panelist* and *Reviewer*	2012 - present
DOE Science Graduate Fellowship Program, *Reviewer*	2011
Alberta Ingenuity Fund, *Reviewer*	2011
Postdoctoral Mentoring Workshop, Columbia University, *Panelist*	2010
Nanohour Seminar Series, *Organizer and Host*	2003 - 2005
American Chemical Society, *Member*	1999 - present

Angew. Chem. Int. Ed., J. Am. Chem. Soc., Chem. Sci, Org. Lett., Langmuir, Macromolecules,

J. Org. Chem., J. Mater. Chem., J. Polym Sci. Part A, etc. *Reviewer* 2003 - present

ACTIVITIES AND COMMUNITY SERVICE

IJAS State Exposition, *Science Judge* 2012- present
Heartland GK-12 Science Symposium, *Judge* 2012- present
SIU Undergraduate Research and Creative Activities Forum, *Judge* 2012- present
Illinois Junior Science and Humanities Symposium Poster, *Judge* 2011- present
Faculty University Associate (FUA) – Neely Hall 2011- 2016
Beckman Open House, University of Illinois, *Volunteer* 2001 - 2002
Educating Tomorrow's Chemists (ETC), Urbana Middle School, *Volunteer* 2001 - 2005
Science Fair, Dr. Howard Elementary School, *Judge* 2001 - 2003
Science Olympiad, Illinois Regional and State Competitions, *Organizer* 2001 - 2003

UNIVERSITY SERVICE

Department:

Vice Chair August 1, 2016 - present
Director of Graduate Studies August 1, 2016- August 1, 2022
Graduate Student Advisement Committee August 1, 2010 - present
Graduate Curriculum Committee August 1, 2012 - present
Meyers Memorial Symposium Organizer August 1, 2012 - present
Chemistry Lecturer Search Committee December 1, 2011 - January 1, 2012
Graduate Student Admissions Committee August 1, 2010 – August 1, 2013

College and University:

SIU Graduate Council 2019-2023
SIU Faculty Senate 2016-2019
SIU Honorary Degree and Distinguished Service Awards Committee 2015- 2018
SIU Early Career Faculty Excellence Award Committee 2015 - 2018
Faculty & University Associate (FUA) 2011 - 2014
Master's Fellowship Review Panel January 22, 2013 - present
MTC Director Search Committee January 1, 2011 - August 1, 2012
Saluki Move-in August 2012

STUDENTS CURRENTLY ADVISING

Krishna Pandey (G), Samsul Arafin (G), Mina Pandey Dumre (G), Tahir Awais (G), Eli Jones (UG)

FORMER STUDENTS

Christopher Hill (G), Yachu Du (G), Ain Uddin (G), Waseem Hussain (G), Emily Oakes (UG), Paul Kevorkian (UG), Bridgett Ludwig (UG), Yue-Huan (Kevin) Lyu (UG), Amanda Waltner (UG), Gajanan Kulkarni (G), Peter Rose (G), Sambasivareddy Bheemireddy (G), Ian Brown (G), Jessica Jellison (G), Ryan Chun (UG), Nicholas Klauba (UG), Che-Hsiung Lee (G)Cassandra Meadows (HS), Jameelah Muhammad (UG, REU), Harrison Oakley (UG), Jack Pertile (UG), Joshua Rathod (UG, REU), Cecilia Smith (UG, REU), Marlee Trandel (UG), Jordan Wood (UG), Bingxin Yuan (G), Xinju Zhu (G)

ADVANCED DEGREES AWARDED

Krishna Pandey, Ph.D., 2024, "Hypervalent Iodine Based Macrocycles and Their Supramolecular Interactions with Guests"

Christopher Hill, M.S., 2022, "Hypervalent Iodine-Based Supramolecular Materials"

Waseem A. Hussain, Ph.D., 2021, "Routes to Anthradithiophene Polymers, Benzodithiophene Fused Polyaromatic Hydrocarbons and Sequence Selective Growth of Conducting Polymers"

Yachu Du, Ph.D., 2021, "New Design Strategies for the Preparation and Linking of Cyclopenta-fused Polycyclic Aromatic Hydrocarbons"

Gajanan C. Kulkarni, Ph.D., 2019, "New Design Concepts Towards Molecular Bowls, Hypervalent Iodine Based Materials, and Energy Storage Materials"

Sambasiva Reddy Bheemireddy, Ph.D., 2017, "Synthesis of Conjugated Small Molecules and Polymers by a Palladium Catalyzed Cyclopentannulation Strategy – Towards New Organic Semiconductors"

Bingxin Yuan, Ph.D., 2016, "Acenaphthylene Based CP-PAH Materials for Organic Semiconductors"

Xinju Zhu, Ph.D., 2015, "Synthesis of Highly Ordered Polymer Nanostructures Based on Polyphenylene Vinylenes (PPVs)"

Che-Hsiung Lee, M.S. 2014, "Orthogonal Functionalization of Cyclopenta[hi]aceanthrylenes"

Jessica Jellison, M.S. 2013, "Electron Accepting Materials based on Cyclopenta[h,i]aceanthrylenes and Dicyclopenta[de,mn]tetracenes"

STUDENT PRESENTATIONS (PRESENTING AUTHOR UNDERLINED, *=UNDERGRADUATE)

Pandey, K., Arafin, S., Jones, E., Plunkett, K.N., "Synthesis, crystallographic structure and reversibility of hypervalent iodine based macrocycles" American Chemical Society. New Orleans, LA, 2024.

Arafin, S., Pandey, K., Jones, E., Plunkett, K.N., "Thermal stability, kinetics, and anion binding capabilities of hypervalent iodine-based macrocycle" American Chemical Society. New Orleans, LA, 2024.

Pandey, K., Fisher, D.J., Plunkett, K.N., "5,5'-methylenedisalicylic acid derivatives as Protein Phosphatase CppA inhibitors in Chlamydia trachomatis", ACS Chicago, Aug 2022.

Kulkarni, G., Attanayake, N., Waltner, A., Odom S.A., Plunkett,K.N. "Pyrilium derivatives as anolytes for non-aqueous redox flow batteries" ACS 2019

Sambasiva Reddy Bheemireddy*, Matthew P. Hautzinger**, and Kyle N. Plunkett "Highly Conjugated Ladder-Type Polymers by Palladium Catalyzed Cyclopentannulation and Post Polymer Modification" ACS Philadelphia, Aug 2016.

Sambasiva Reddy Bheemireddy*, Matthew P. Hautzinger**, and Kyle N. Plunkett "Utilizing Palladium-Catalysed Cyclopentannulations to Create Contorted Aromatics And Pentacene-Based CP-PAHs" ACS Division of Organic Chemistry Graduate Research Symposium, Bryn Mawr, PA Aug 2016.

Sambasiva Reddy Bheemireddy*, Matthew P. Hautzinger**, and Kyle N. Plunkett, "Conjugated Ladder-Type Polymers by a Palladium Catalyzed Cyclopentannulation Approach" Midwest Regional ACS Meeting, Manhattan, KS Oct 2016.

Sambasiva Reddy Bheemireddy and Kyle N. Plunkett, "Utilizing Palladium Catalyzed Cyclopentannulations to Create Contorted Aromatics, ACS 2015, Boston, MA Aug 2015.

Sambasiva R. Bheemireddy, Pamela C. Ubaldo, Aaron D. Finke, Lichang Wang, and Kyle N. Plunkett, "Utilizing Palladium Catalyzed Cyclopentannulations to Create Contorted Aromatics and Pentacene-Based CP-PAHs", Scifinder Future Leaders in Chemistry Program, Columbus, OH, Aug 2015.

Sambasiva Reddy Bheemireddy and Kyle N. Plunkett, "Utilizing Palladium Catalyzed Cyclopentannulations to Create Contorted Aromatics, 2nd Cal Meyers Organic Research Symposium, Carbondale, IL, Apr 2015.

Bingxin Yuan and Kyle N. Plunkett, "Cyclopenta-fused Polycyclic Aromatic Hydrocarbon Containing Copolymers Based on Rylene Dyes", ACS 2014, Dallas, TX Mar 2014.

Sambasivareddy Bheemireddy and Kyle N. Plunkett, "Synthesis of Dicyclopenta[cd,jk]pyrene Based Donor-Acceptor Copolymers", ACS 2014, Dallas, TX Mar 2014.

Xinju Zhu, Shauna E. Ingle, David A Vanden Bout, and Kyle N. Plunkett, "Engineering Polymer Self-assembly via Sidechain Modification", ACS 2014, Dallas, TX Mar 2014.

Yue-Huan Lyu*, Che-Hsiung Lee, and Kyle N. Plunkett, "Orthogonal Functionalization of Dicyclopenta[de,mn]tetracenes", SIU Undergraduate Research Forum, Carbondale, IL Apr 2013.

Che-Hsiung Lee and Kyle N. Plunkett, "Orthogonal Functionalization of Cyclopenta[hi]aceanthrylenes", Cal Meyers Memorial Organic Chemistry Symposium, Carbondale, IL Apr 2013.

Cecilia L. Smith* and Kyle N. Plunkett, "Controlling the Chain Conformation of Conjugated Polymers", ACS-Southeast Regional Meeting, Raleigh, NC Nov 2012.

Xinju Zhu and Kyle N. Plunkett, "Well-Defined Alternating Copolymers of Oligo(Phenylene Vinylene)s and Flexible Morphons", ICSM 2012, Atlanta, GA July 2012.

Che-Hsiung Lee and Kyle N. Plunkett, "Thiophene Conjugated Cyclopenta-fused Polycyclic Aromatic Hydrocarbons as Low Band Gap Materials", ICSM 2012, Atlanta, GA July 2012.

Harrison Oakley* and Kyle N. Plunkett, "Synthesis and Characterization of Poly[3,8-bis(2-ethyhexyl)1,6-pyrene)s", SIU Undergraduate Research Forum, Carbondale, IL Apr 2012.

STUDENT AWARDS

Krishna Pandey – Gower Research Fellowship, 2023
Krishna Pandey – Graduate and Professional Student Council Award
Krishna Pandey – SIU Dissertation Research Award, 2022
Ain Uddin – SIU Doctoral Graduate Fellowship, 2020
Yachu Du – SIU Doctoral Graduate Fellowship, 2019
Waseem Hussain – First Place poster award at SIU Student Creative Activities and Research Forum
Waseem Hussain – First Place poster award at the SIU Material Research Society Forum
Sambasivareddy Bheemireddy -- Midwest (ACS) Graduate Research Award Symposium
Sambasivareddy Bheemireddy – Gower Research Fellowship, 2016
Sambasivareddy Bheemireddy – ACS DOC Graduate Research Symposium, 2016
Sambasivareddy Bheemireddy – SIU Doctoral Graduate Fellowship, 2016
Sambasivareddy Bheemireddy – SciFinder Future Leaders in Chemistry Program, 2014
Xinju Zhu – SIU Doctoral Research Fellowship, 2014
Xinju Zhu – Gower Research Fellowship, 2014
Yue-Huan (Kevin) Lyu – Saluki Scholars Research Opportunity, 2014
Yue-Huan (Kevin) Lyu – Saluki Research Rookies, 2013
Harrison Oakley – Saluki Research Rookies, 2012

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