Kevin N. West

Professor & Chair
Department of Chemical Engineering
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Academic Appointments

Tennessee Technological University, Cookeville, TN

2025 – Present Professor & Chair, Chemical Engineering

University of South Alabama, Mobile, AL

2017 – 2024 Professor of Chemical & Biomolecular Engineering

2014 – 2017 Associate Professor of Chemical & Biomolecular Engineering

2008 – 2014 Assistant Professor of Chemical & Biomolecular Engineering

University of St. Thomas, St. Paul, MN

2004 – 2008 Adjunct Professor of Chemistry

Education

2001 – 2003 University of Minnesota, Minneapolis, MN

- Post-doctoral Research Associate
- Noble metal catalyzed hydrogen and α-olefin production from alkanes in millisecond reactors
  Advisor: Dr. Lanny D. Schmidt

1996 – 2001 Georgia Institute of Technology, Atlanta, GA

- Ph.D. Chemical Engineering, 2001
- Dissertation: "*CO_2-Expanded Liquids as Environmentally Benign Process Solvents*"
  Advisors: Dr. Charles A. Eckert and Dr. Charles L. Liotta
- Minor: Organic Chemistry

1992 – 1996 University of Virginia, Charlottesville, VA

- B.S. Chemical Engineering with High Distinction, 1996
- Thesis: "*Spatiotemporal Variations on an Iron Ring Electrode"*
  Advisor: Dr. John L. Hudson

Professional Memberships

- American Institute of Chemical Engineers 1994 – Present
- American Chemical Society 1999 – Present

Honors, Awards & Highlights

- Phi Kappa Phi Scholar of the Year – University of South Alabama – **2023**
- University of South Alabama Top 10 Funded Researchers of the Past 5 Years – **2023**
- Highlighted Inventor – USA Technology Showcase, **2022**
- CO_2 Capture Technology patent suite licensed by Norton Engineering Consultants, Inc., **2021**
- Tau Beta Pi – Alabama Epsilon Chapter "Professor of the Year", **2012**, **2020**
- Russ & Robin Lea Faculty Innovation Award, USA National Alumni Association, **2017**
- Mortar Board Senior Honor Society – selected as "Top Prof" by Senior USA Chemical Engineering Students:
    - Natalie Hadad, **2024**
    - Keira Ross, **2021**
    - Corey Nguyen, **2016**
    - Mack Bozman, **2016**
    - William C. Spikes, **2015**
    - Katlyn A. Bramblett, **2014**
    - Joshua T. Richardson, **2012**
    - Misbahhuddin Syed, **2012**
    - K. Aaron Lepre, **2011**
- USA College of Engineering Excellence in Research Award, **2012**

Publications

Journal Articles

1. Qu, T., West, K.N., Rupar, P.A. Protecting-group-free synthesis of functional Poly (ester amide)s by the polyaddition of Bis (aziridine)s. *European Polymer Journal*, **2024**, 207, 112808.

2. Jon Hastings, J., Lassiter, T., Clearman, J.C., Soltani, M., Coym, J.W., Reichert, W.M., West, K.N., Davis Jr., J.H., Glover, T.G., Thermal stability and Vapor-Liquid equilibrium of aqueous solutions of choline and tetramethylammonium taurate. *Journal of Molecular Liquids*, **2024**, 397, 124022.

3. O'Brien, R.A., Hillesheim, P.C., Soltani, M., Badilla-Nunez, K.J., Siu, B., Musozoda, M., West, K.N., Davis, J.H., Mirjafari, A. Cyclopropane as an Unsaturation "Effect Isostere": Lowering the Melting Points in Lipid-like Ionic Liquids. *The Journal of Physical Chemistry B*, **2023**, 127 (6), 1429-1442.

4. Soltani, M., Siu, B., Vo, M., West, K.N., Adu, C., Mirjafari, A., Davis, J.H. Ionic Liquids with Benzenesulfonate Anions: Nonfluorinated, Thermally Stable Anion Options. *ACS Applied Engineering Materials*, **2023**, 1 (1), 690-695.

5. Qu, T., West, K.N., Rupar, P.A. Rapid synthesis of functional poly (ester amide) s through thiol–ene chemistry. *RSC Advances*, **2023**, 13(22), 22928-22935.

6. Giri, C., Sisk, S.E., Reisman, L, Kammakakm, I., Bara, J.E., West, K.N., Rabideau, B.D., Rupar, P.A. Anionic Ring-Opening Polymerizations of N-Sulfonylaziridines in Ionic Liquids. *Macromolecules*, **2022**, 55 (2), 623-629.

7. Bandlamudi, S.R.P, McGehee, J.L., Mando, A.D., Soltani, M., Turner, C.H., Davis, J.D., West, K.N, Rabideau, B.D. Understanding liquid–liquid equilibria in binary mixtures of hydrocarbons with a thermally robust perarylphosphonium-based ionic liquid. *RSC Advances*, **2021**, 11, 31328-31338.

8. Rabideau, B.D., Soltani, M., Parker, R.A., Siu, B., Salter, E.A., Wierzbicki, A., West, K.N., Davis, J.H. Tuning the Melting Point of Selected Ionic Liquids Through Adjustment of the Cation's Dipole Moment. *Physical Chemistry Chemical Physics*, **2020**, 22(21), 12301-12311

9. Walters, M.G., Mando, A.D., Reichert, W.M., West, C.W., West, K.N., Rabideau, B.D. The Role of Urea in the Solubility of Cellulose in Aqueous Quaternary Ammonium Hydroxide. *RSC Advances*, **2020**, 10(10), 5919-5929.

10. Brown, A.S., Bozman, M.E., Hickman, T.J., Hossian, M.I., Glover, T.G., West, K.N., Wheeler West, C. Superhydrophobic Functionalization of Cotton Fabric via Reactive Dye Chemistry and a Thiol-ene Click Reaction. *Industrial & Engineering Chemistry Research*, **2019**, 58 (50), 22534-22540.

11. Bunge, M.A., Davis, A. B., West, K. N., West, C. W., Glover, T.G. Synthesis and Characterization of UiO-66-NH_2 Metal–Organic Framework Cotton Composite Textiles. *Industrial & Engineering Chemistry Research*, **2018**, 57(28), 9151-9161.

12. Rabideau, B. D., West, K. N., Davis, J. H. Making Good on a Promise: Ionic Liquids with Genuinely High Degrees of Thermal Stability. *Chemical Communications*, **2018**, 54(1), 5019-5031. (**Cover Article**)

13. Soltani, M., Siu, B., Salter, E. A., Wierzbicki, A., West, K. N., Davis, J. H. Synthesis, thermal stability, and computed bond dissociation energies of tetraarylphosphonium-based mesothermal ionic liquids bearing a quinoline ring system. *Tetrahedron Letters*, **2017**, 58(49), 4628-4631.

14. Cassity, C. A., Siu, B., Soltani, M., McGeeHee, J. L., Strickland, K. J., Vo, M., Salter, E. A., Stenson, A. C., Wierzbicki, A., West, K. N., Rabideau, B. D., Davis, J. H. The effect of structural modifications on the thermal stability, melting points and ion interactions for a series of tetraaryl-phosphonium-based mesothermal ionic liquids. *Physical Chemistry Chemical Physics*, **2017**, 19(47), 31560-31571.

15. Soltani, M., Siu, B., Salter, E. A., Wierzbicki, A., West, K. N., Davis, J. H. Synthesis, thermal stability, and computed bond dissociation energies of tetraarylphosphonium-based mesothermal ionic liquids bearing a quinoline ring system. *Tetrahedron Letters,* **2017**, 58(49), 4628-4631.

16. Benchea, A., Siu, B., McCants, J., Soltani, M., Salter, E. A., Wierzbicki, A., West, K. N., Davis, J. H. An evaluation of anion suitability for use in ionic liquids with long-term, high-temperature thermal stability. *New Journal of Chemistry*, **2017**, 41, 7844-7848.

17. Siu, B., Cassity, C. G., Benchea, A., Strickland, K. J., Wierzbicki, A., Sykora, R. E., Salter, E. A., O'Brien, R. A., West, K. N., Davis, J. H. Thermally Robust: Triarylsulfonium ionic liquids stable in air for 90 days at 300C. *RSC Advances*, **2017**, 7, 7623–7630.

18. Thigpen, A. S., Nestor, S. T., O'Brien, R. A., S. M., Y. S., Davis, J. H., West, K. N., Mirjafari, A. Thioether−Functionalized Picolinium Ionic Liquids: Click Synthesis and Thermophysical Characterizations for use as Lubricants. *New Journal of Chemistry*, **2017**,41, 1625-1630.

19. Langham, J. V., O'Brien, R. A., Davis, J. H., West, K. N. Solubility of CO_2 and N_2O in an Imidazolium-Based Lipidic Ionic Liquid. *Journal of Physical Chemistry B*, **2016**, 120(40), 10524-10530.

20. West, C. W., Huynh, T. L.Y., Poiroux, K., O'Brien, R. A., West, K. N., Davis, J. H. Fusion and Thermal Degradation Behavior of Symmetric Sulfur-Containing Quaternary Ammonium Bromides. *Journal of Physical Chemistry B*, **2016**, 120(7), 1330–1335.

21. Green, B. D., Badini, A. J., O'Brien, R. A., Davis, J. H., West, K. N. Liquid-Liquid Equilibria of Binary Mixtures of a Lipidic Ionic Liquid with Hydrocarbons. *Physical Chemistry Chemical Physics,* **2016**, *18*, 2459-2467.

22. Thomas, M. J., Bramblett, K. A., Green, B. D., West, K. N. Thermophysical and absorption properties of brominated vegetable oil. *Journal of Molecular Liquids,* **2015**, *211*, 647–655.

23. Stenson, A. C., West, K. N., Reichert, W. M., Klomkaew, P., Cassity, C. G., Dobyns, B. M., Siu, B., Davis, J. H. Multi-ion ionic liquids and a direct, reproducible, diversity-oriented way to make them. *Chemical Communications,* **2015**, *51*(88), 15914-6.

24. Ruckart, K. N., O'Brien, R. A., Woodard, S. M., West, K. N., Glover, T. G. Porous Solids Impregnated with Task-Specific Ionic Liquids as Composite Sorbents. *The Journal of Physical Chemistry C,* **2015**, *119*(35), 20681-20697.

25. Green, B. D., O'Brien, R. A., Davis, J. H., West, K. N. Ethane and Ethylene Solubility in Imidazolium-based Lipidic Ionic Liquid. *Industrial & Engineering Chemistry Research,* **2015**, *54*(18), 5165–5171.

26. Bunge, M. A., Ruckart, K. N., Leavesley, S. J., Peterson, G. W., Nguyen, N., West, K. N., Glover, T. G. Modification of Fibers with Nanostructures Using Reactive Dye Chemistry. *Industrial & Engineering Chemistry Research,* **2015**, *54*(15), 3821–3827.

27. Mirjafari, A., O'Brien, R. A., West, K. N., Davis, J. H. Synthesis of Novel Lipid-Inspired Ionic Liquids via Thiol-ene Chemistry: Profound Solvent Effect on Reaction Pathway. *Chemistry: A European Journal,* **2014**, *20*(25), 7576-7580.

28. O'Brien, R. A., Mirjafari, A., Mattson, K., Murray, S. M., Mobarrez, N., Salter, E. A., Wierzbicki, A., Davis, J. H., West, K. N. The Effect of Sulfur Position on the Melting Points of Lipidic 1-Methyl-3-Thiaalkylimidazolium Ionic Liquids. *Journal of Physical Chemistry B,* **2014**, *118*(34), 10232-10239.

29. Chen, L., Mullen, G. E., Le Roch, M., Cassidy, C. G., Gouault, N., Fadamiro, H. Y., Barletta, R. E., O'Brien, R. A., Sykora, R. E., Stenson, A. C., West, K. N., Horne, H., Davis, J. H. On the Formation of a Protic Ionic Liquid in Nature. *Angewandte Chemie International Edition,* **2014***, 53*(44), 11762-11765.

30. O'Brien, R. A., West, C. W., Hollingsworth, B. E., Stenson, A. C., Henderson, C. B., Mirjafari, A., Mobarrez, N., West, K. N., Mattson, K. M., Salter, E. A., Wierzbicki, A., Davis, J. H. A Simple and Rapid Route to Novel Tetra(4-thiaalkyl)ammonium Bromides. *RSC Advances,* **2013***, 3*, 24612-24617.

31. Mirjafari, A., Pham, L. N., McCabe, J. R., Mobarrez, N., Salter, E. A., Wierzbicki, A., West, K. N., Sykora, R. E., Davis, J. H. Building a bridge between aprotic and protic ionic liquids. *RSC Advances,* **2013***, 3*, 337-340.

32. Murray, S. M., Zimlich, T. K., Mirjafari, A., O'Brien, R. A., Davis, J. H., West, K. N. Thermophysical Properties of Imidazolium-based Lipidic Ionic Liquids. *Journal of Chemical and Engineering Data,* **2013***, 58*(6), 1516-1522.

33. Kwana, M. L., Pham, L. N., McCabe, J. R., O'Brien, R. A., Essi, D. F., Baum, L., West, K. N., Davis, J. H. Synthesis and Thermophysical Properties of Ionic Liquids: Cyclopropyl Moieties versus Olefins as Tm-Reducing Elements in Lipid-inspired Ionic Liquids. *Tetrahedron Letters,* **2013***, 54*(1), 12-14.

34. Mirjafari, A., Murray, S. M., O'Brien, R. A., Stenson, A. C., West, K. N., Davis, J. H. Structure-based tuning of Tm in lipid-like ionic liquids. Insights from Tf2N-salts of gene transfection agents. *Chemical Communications,* **2012***, 48*, 7522-7524.

35. Leavesley, S. J., West, K. N. A Graduate Laboratory Course on Biodiesel Production - Emphasizing Professional, Teamwork and Research Skills. *Chemical Engineering Education,* **2011***, 45*(4), 248-256.

36. O'Brien, R. A., Mirjafari, A., Jajam, V., Capley, E. N., Stenson, A. C., West, K. N., Davis, J. H. Functionalized Ionic Liquids with Highly Polar Polyhydroxylated Appendages and their Rapid Synthesis via Thiol-ene Click Chemistry. *Tetrahedron Letters,* **2011***, 52*(40), 5173-5175.

37. Alagharu, V., Palanki, S., West, K. N. Analysis of Ammonia Decomposition Reactor to Generate Hydrogen for Fuel Cell Applications. *Journal of Power Sources,* **2010,** 829-833.

38. Murray, S. M., O'Brien, R. A., Mattson, K. M., Ceccarelli, C., Sykora, R. E., West, K. N., Davis, J. H. The Fluid-Mosaic Model, Homeoviscous Adaptation, and Ionic Liquids: Dramatic Lowering of the Melting Point by Side-Chain Unsaturation. *Angewandte Chemie International Edition,* **2010***, 49*(15), 2755-2758.

39. West, K. N., Hallett, J. P., Jones, R. S., Bush, D. M., Liotta, C. L., Eckert, C. A. CO_2-Induced Miscibility of Fluorous and Organic Solvents for Recycling Homogeneous Catalysts. *Industrial and Engineering Chemistry Research,* **2004,** 43(16), 4827-4832.

40. Krummenacher, J. J., West, K. N., Schmidt, L. D. Catalytic Partial Oxidation of Higher Hydrocarbons at Millisecond Contact Times: Decane, Hexadecane, and Diesel Fuel. *Journal of Catalysis,* **2003***, 215*, 332-343.

41. Schmidt, L. D., Klein, E. J., Leclerc, C. A., Krummenacher, J. J., West, K. N. Syngas in Millisecond Reactors: Higher Alkanes and Fast Lightoff. *Chemical Engineering Science,* **2003***, 58*, 1037-1041.

42. Ablan, C. D., Hallett, J. P., West, K. N., Jones, R. S., Liotta, C. L., Eckert, C. A. Use and Recovery of a Homogeneous Catalyst with Carbon Dioxide as a Solubility Switch. *Chemical Communications,* **2003**, 2972-2973.

43. West, K. N., West, C. W., McCarney, J. P., Griffith, K. N., Bush, D. M., Liotta, C. L., Eckert, C. A. In Situ Formation of Alkylcarbonic Acids with CO_2. *Journal of Physical Chemistry A,* **2001***, 105*, 3947-3948.

44. West, C. W., West, K. N., Liotta, C. L., Eckert, C. A. Ionic Liquids as Catalytic Green Solvents for Nucleophilic Displacement Reactions. *Chemical Communications,* **2001***, 10*, 887-888.

Patents (* while at USA)

1. *"Functionalized materials and compounds,"; University of South Alabama; T.G. Glover, Kevin N. West. US Patent 12,006,309 (Issued on **6/11/2024**).

2. *"Functionalized materials and compounds,"; University of South Alabama; T.G. Glover, Kevin N. West. US Patent 11,192,883 (**2021**).

3. *"Process for the Separation of Carbon Dioxide from Flue Gas,"; Chevron Energy Technology Corporation; Daniel Chinn, Russell Cooper, Alice He, James H. Davis, Jr., Kevin N. West, Hye Kyung Timken, Michael S. Driver. U.S. Pat. Appl. Publ. (**2012**), US 20120167766 A1 20120705, WO 2012092176 A2 20120705.

4. *"Aqueous Solution of Amine Functionalized Ionic Compounds for Carbon Capture Processes,"; Chevron Energy Technology Corporation; Russell Cooper, Daniel Chinn, Alice He, James H. Davis, Jr., Kevin N. West, Hye Kyung Timken, Michael S. Driver. U.S. Pat. Appl. Publ. (**2012**), US 20120171094 A1 20120705

5. *"Method for Improving the Total Energy Demand in a Post-Combustion Carbon Capture Process with Ionic Absorbent,"; Chevron Energy Technology Corporation; Russell Cooper, Daniel Chinn, Alice He, Jim Davis, Kevin N. West, Hye Kyung Timken, Michael S. Driver. PCT Int. Appl. (**2012**), WO 2012092204 A2 20120705.

6. "Extraction Process Utilizing Liquefied Carbon Dioxide,"; Cool Clean Technologies, Inc.; Jon R. Turner, Kevin N. West, United States Patent #7,915,379, **2011**.

7. "Catalytic Partial Oxidation of Hydrocarbons,"; Reagents – University of Minnesota; Lanny D. Schmidt, Jakob J. Krummenacher, Kevin N. West; United States Patent # 7,262,334, **2007**.

Book Chapter

Mirjafari, A., O'Brien, R. A., Murray, S. M., Mattson, K. M., Mobarrez, N., West, K. N., Davis, J. H. (*2012*). Lipid-Inspired Ionic Liquids Containing Long-Chain Appendages: Novel Class of Biomaterials with Attractive Properties and Applications. *Ionic Liquids: Science and Applications* (vol. 1117, pp. 199-216). American Chemical Society.

Conference Presentations

Milter, J. (Presenter), Stallings, J., Glover, T.G., Ravine, T., West, K.N., "Development of a Rechargeable Antimicrobial Textile Utilizing Radical Click Chemistry and Reactive Dyeing Techniques" – 2023 AIChE Annual Meeting, Orlando, FL (November 5, 2023)

(Invited) Davis, J.H. (Presenter), West, K.N., "20 Years of CO_2 Capture By Ionic Liquids, Molecular Liquids, and Liquids in-between" – Electrochemical Society Meeting 2023 (Abstracts 242, 2062-2062)

West, K.N. (Presenter), Davis, J.H., Rabideau, B.D, McGehee, J, "Thermophysical and thermodynamic properties of thermally robust ionic liquids and their mixtures." 2021 ACS Spring Meeting – Virtual (April 5, 2021)

Davis, J.H (Presenter), West, K.N., Rabideau, B.D., O'Brien, R.A., Solatani, M., Butt, C. "Like trying to build airplanes with rocks: The challenge of creating ionic liquids with high thermal stability." 2021 ACS Spring Meeting – Virtual (April 5, 2021)

Bandlamudi, S.R.P. (Presenter), McGehee, J., Mando, A.D., Davis, J.H., West, K.N., Rabideau, B.D. Albaraa D. Mando, James H. Davis Jr., Kevin N. West and Brooks Rabideau, "Thermally Stable Ionic Liquid As Media for Separating Aliphatic and Aromatic Compounds." 2020 AIChE Virtual Annual Meeting (November 2020).

West, K.N. (Presenter) Mando, Z., Swanson, R., Glover, T.G., Davis, J.H., Reichert, W.M. "Aqueous Ionic Amines for CO_2 Capture in Air Revitalization." 2020 AIChE Virtual Annual Meeting (November 2020).

Rabideau, B. D. (Presenter), Soltani, M., Salter, E. A., Wierzbicki, A., West, K. N., Davis, J. H. "The Effect of Cation Polarity on the Melting Points of Ionic Liquids: An Experimental and Computational Study." 2019 AIChE Annual Meeting, Orlando, FL (November 2019).

West, K. N. (Presenter), Siu, B., Badini, A., Rabideau, B.D., Davis, J. H., Badilla, K., Soltani, M. "Thermodynamics & Thermophysical Properties of Thermally Robust Ionic Liquids and Their Mixtures." 2018 AIChE Annual Meeting, Pittsburgh, PA (November 2018).

West, K. N. (Presenter), Rabideau, B.D., Salter, E. A., Wierzbicki, A., Davis, J. H. "Pushing the Thermal Limits of Ionic Liquids." Gordon Research Conference on Ionic Liquids, Newry, ME. (August 2018).

Glover, T. G. (Presenter), West, K.N., Chemical and Biological Defense Science & Technology Conference 2017, "A Platform to Modify Textiles for Defense Applications," Long Beach, CA. (November 2017).

West, K. N. (Presenter), Siu, B., Davis, J. H., O'Brien, R. A, Cassity, C. G., Badini, A., Soltani, M., 2017 AIChE Annual Meeting, "Thermally Robust Molten Salts & Ionic Liquids: Thermodynamics Properties and Phase Behavior", American Institute of Chemical Engineers, Minneapolis, Minnesota. (October 31, 2017).

Poster - West, C. W. (Presenter), West, K. N., Glover, T. G., Bozman, M., Moran, C., AIChE Annual Meeting, "Versatile Surface Modification for Functionalization of Fibers," Minneapolis. (November 1, 2017).

Glover, T. G. (Presenter), West, K. N., ECBC/DTRA Surface Science Review, "Functionalization of Fibers with UiO MOFs and Zr(OH)4," Raleigh, NC. (September 2017).

Glover, T. G. (Presenter), West, K. N., DoD US Army MOF/Fiber Working Group, "Functionalization of Cotton with UiO-66-NH2," Natick, MA. (June 2017).

Glover, T. G. (Presenter), Bunge, M., Ruckart, K. Neil, Leavesley, S. J., Peterson, G., Nguyen, N., West, K. N., MOF 2016, "Attachment of MOFs to Nylon and Cotton Fabrics," Long Beach, CA, (2016).

West, K. N. (Presenter), Davis, J. H., O'Brien, R. A., Siu, B., Cassity, C. G., 2016 AIChE Annual Meeting, "Thermal and Thermodynamic Properties of Ionic Liquids and Molten Salts with High Thermal Stability", American Institute of Chemical Engineers, San Francisco, California. (November 16, 2016).

Siu, B. (Presenter), West, K. N., Cassity, C. G., Davis, J. H., AIChE Southern Regional Conference, "Pure Component & Binary Thermal Behavior of Novel Ionic Compounds with High Thermal Stability", AICHE, Tuscaloosa, AL. (April 2, 2016).

Glover, T. G. (Presenter), West, K. N., PacifiChem, "Modification of Fibers with Nanostructures for Chemical Defense", Honolulu, HI. (December 2015).

West, K. N., Green, B. D., Dobyns, B. M., O'Brien, R. A., Davis, J. H., 2015 AIChE Annual Meeting, "Solubility and Volumetric Behavior of Binary Mixtures of Lipidic Ionic Liquids and Molecular Solutes", American Institute of Chemical Engineers, Salt Lake City, Utah. (November 9, 2015).

Bunge, M. (Presenter), Ruckart, K. N., Leavesley, S. J., Peterson, G. W., Nguyen, N., West, K. N., Glover, T. G., 2015 AIChE Annual Meeting, "The Application of Reactive Dyes to Functionalize Fibers with MOFs, Quantum Dots, and Gold Nanoparticles", AIChE, Salt Lake City, Utah. (November 8, 2015).

West, K. N. (Presenter), Green, B. D., O'Brien, R. A., Davis, J. H., 2014 AIChE Annual Meeting, "Binary Phase Behavior of Lipidic Ionic Liquids", Atlanta, GA. (November 17, 2014).

Woodard, S. M. (Presenter), West, K. N., Deal, J., West, C. W., 2014 AIChE Annual Meeting, "Separations Using Supercritical CO_2 Deposited Adsorbents", Atlanta, GA. (November 17, 2014).

Green, B. D. (Presenter), West, K. N., O'Brien, R. A., Davis, J. H., 2014 AIChE Annual Meeting, "Solvent Properties of Lipidic Ionic Liquids", Atlanta, GA. (November 17, 2014).

Bramblett, K. A. (Presenter), Thomas, M. J., West, K. N., 2014 AIChE Annual Meeting, "Thermal and Thermophysical Properties of Brominated Vegetable Oil", Atlanta, GA. (November 17, 2014).

Davis, J. H. (Presenter), Chen, L., Mullen, G. E., Le Roch, M., Cassity, C. G., Gouault, N., Fadamiro, H. Y., Barletta, R. E., O'Brien, R. A., Sykora, R. E., Stenson, A. C., West, K. N., Horne, H. H., Hendrich, J. M., Rui, K., Ionic Liquids, "On the formation of a protic ionic liquid", Gordon Research Conference, Newry, ME. (August 17, 2014).

Nguyen, N. (Presenter), Glover, T. G., West, K. N., West, C. W., 2013 UCUR Symposium, "Nanoscale Modification of Fibers via Reactive Dye Chemistry", USA UCUR, Mobile, AL. (2013).

West, K. N. (Presenter), Davis, J. H., O'Brien, R. A., Langham, J. V., AIChE Annual Meeting, "VLE of Lipidic Ionic Liquid Systems", AICHE, San Francisco. (2013).

West, K. N. (Presenter), Davis, J. H., O'Brien, R. A., Zimlich, T. K., AL-Hashem, A., Langham, J. V., USA Graduate Research Symposium, "Understanding the Thermophysicial & Solvent Properties of Lipidic Ionic Liquids", USA FDC, Mobile, Alabama. (2013).

West, K. N., Zimlich, T. K. (Presenter), Jung, C. A. (Presenter), 2013 UCUR Symposium, "Liquid/Liquid Equilibria of Binary Systems of Lipidic Ionic Liquids with Molecular Species", USA UCUR, Mobile, Alabama. (October 17, 2013).

West, K. N., Langham, J. V. (Presenter), 2013 UCUR Symposium, "Measurement and Modeling of CO2 and N2O Solubility in Lipidic Ionic Liquids", USA UCUR, Mobile, Alabama. (October 17, 2013).

West, K. N. (Presenter), Murray, S. M., Thigpen, A. S., Zimlich, T. K., Mirjafari, A., O'Brien, R. A., Davis, J. H., ACS Spring Meeting, "Tuning the thermophysical properties of lipidic ionic liquids through structural variation", American Chemical Society, San Diego, CA. (2012).

West, K. N., McCabe, J. R., Thigpen, A. S., AL-Hashem, A., Mirjafari, A., Davis, J. H., AIChE Annual Meeting, "Binary SLE of Lipidic Ionic Liquid Systems", AIChE, Pittsburgh, PA. (2012).

West, K. N. (Presenter), Davis, J. H., AL-Hashem, A., Zimlich, T. K., Mirjafari, A., O'Brien, R. A., AIChE Annual Meeting, "Pure and Mixture Thermophysical Properties and Phase Behavior of Lipidic Ionic Liquid", AIChE, Pittsburgh, PA. (2012).

Reichert, W. M. (Presenter), Williams, N. G., Goodie, T., La, M., Mirjafari, A., Davis, J. H., West, K. N., Murray, S. M., 2012 Materials Research Society Spring Meeting, "Application of Ionic Liquids for the Conversion of Biomass to Feedstock Chemicals", San Francisco, CA. (April 12, 2012).

Liotta, C. L. (Presenter), Brown, J. S., West, K. N., Hallett, J. P., McCarney, J. P., Nolen, S. A., West, C. W., Griffith, K. N., Eckert, C. A., Glaser, R., ACS Joint Southeast-Southwest Regional Meeting, "Environmentally Benign Solvent Systems for Chemical Reactions and Processes", American Chemical Society, New Orleans. (2000).

West, C. W. (Presenter), West, K. N., McCarney, J. P., Griffith, K. N., Liotta, C. L., Eckert, C. A., AIChE Annual Meeting, "CO_2-Alcohol Systems for Novel in situ Acid Generation", AIChE, Los Angeles, CA. (2000).

West, K. N. (Presenter), Hallett, J. P., Brown, J. S., West, C. W., Bush, D. M., Liotta, C. L., Eckert, C. A., AIChE Annual Meeting, "Novel Single-Phase Fluorous-Organic Systems for Environmentally Benign Processing", AIChE, Los Angeles, CA. (2000).

Grant and Contract Awards/Submission

Total external funding as PI or PM (Project Manager)	$ 15,986,271
Total external funding as PI, PM or Co-PI:	$ 18,819,899

Grants

Funded & Current

N/A

Funded & Completed

Rabideau, B.D (Principal), Davis, J. H. (Co-Principal), Reichert, W. M. (Co-Principal), West, K. N. (Co-Principal), “Ionic Amines for Shipboard Capture”, Sponsored by DoD - ONR (Subaward from Triton Systems, Inc.) – Federal, $19,984. (December 5, 2023 – June 4, 2024).

Davis, J. H. (Principal), Reichert, W. M. (Co-Principal), Glover, T. G (Co-Principal), West, K. N. (Co-Principal), “Development of CO_2-Capturing Ionic Liquid Solutions for Spacecraft Air Revitalization Systems”, Sponsored by NASA – EPSCoR CAN (Administered through State ESPCoR program at UAH) – Federal, $1,142,414. (August 15, 2019 – December 31, 2023).

West, K. N. (Principal), Reichert, W. M. (Project Manager), Davis, J. H. (Co-Principal), Wheeler West, C. (Co-Principal), Rabideau, B. D. (Co-Principal), et al., “Understanding the Molecular-level Interactions Between Ionic Liquids and Molecular Species to Design and Develop Novel Solvent

Systems for Environmental and Energy Applications," Sponsored by Department of Energy – EPSCoR Implementation Grant, Federal, $2,710,993. (August 15, 2019 – August 14, 2021).

- Renewal funded at $999,948 (August 15, 2021 – August 14, 2023)

Glover, T. G. (Principal), Rabideau, B. D. (Co-Principal), West, K.N. (Co-Principal), "Technical Evaluation of Methods to Recover Liquids from Gas in Microgravity", Sponsored by NASA – X-Hab – Federal, $30,000. (August 1, 2019 – May 31, 2020).

Glover, T. G. (Principal), (Co-Principal), West, K.N. (Co-Principal), Davis, J. H., "Undergraduate Elective Class Evaluating Ionic Liquids for Closed Air Revitalization", Sponsored by NASA – X-Hab – Federal, $30,000. (July 1, 2018 – June 30, 2019).

Davis, J. H. (Principal), West, K. N. (Co-Principal), "Development of Room-Temperature Ionic Liquids for Reversible Electroplating," Sponsored by Air Force - SBIR - Sub-contract for Faraday Technologies, Federal, $225,000.00. (July 1, 2017 - June 30, 2019).

Glover, T. G. (Principal), West, K. N. (Co-Principal), "Development of Biocidal Fabrics Using the Reactive Dye Method," Sponsored by Army Research Office (ARO), External to the University, $598,332.00. (2016 - 2018).

Glover, T. G. (Principal), West, K. N. (Co-Principal), "Modification of Fibers Using Reactive Dye Chemistry," Sponsored by U. South Alabama, Internal to the University, $25,000.00. (2014 - 2017).

Glover, T. G. (Principal), West, K. N. (Co-Principal), "Application of the Reactive Dye Method to Tailor Fibers with Adsorbent Materials," Sponsored by Army Research Office (ARO), External to the University, $305,772.00. (September 2015 - 2018).

West, K. N. (Co-Principal), Davis, J. H. (Principal), "Development of Room-Temperature Ionic Liquids for Reversible Electroplating," Sponsored by Air Force - SBIR - Sub-contract, Federal, $45,000.00. (July 1, 2016 - March 31, 2017).

Reichert, W. M. (Principal), Glover, T. G. (Co-Principal), West, K. N. (Co-Principal), Wallace, K. (Co-Principal), "Fluorescent Test Strips for the Detection of Heavy Metals in the Mobile Bay Region," Sponsored by University of South Alabama Center for Environmental Resiliency, Internal to the University, $20,000.00. (January 2016 - December 2016).

West, C. W. (Principal), West, K. N. (Co-Principal), Glover, T. G. (Co-Principal), "Investigation of a Novel Hybrid Absorbent for Oil Spill Remediation," Sponsored by Center for Environmental Resiliency, $20,000.00. (December 2015 - November 2016).

West, K. N. (Principal), Davis, J. H. (Co-Principal), Reichert, W. M. (Co-Principal), "MRI: Acquisition of an Intelligent Gravimetric Analyzer to Characterize Gas Absorption Properties of Ionic Liquids for Energy and Environmental Applications," Sponsored by National Science Foundation – MRI-CBET, Federal, $361,923.00. (August 1, 2011 - July 31, 2015).

West, K. N. (Principal), Davis, J. H. (Co-Principal), "Understanding the Thermophysical and Solvent Properties of Lipid-like Ionic Liquids," Sponsored by National Science Foundation – CBET, Federal, $248,522.00. (August 1, 2011 - July 31, 2015).

West, K. N. (Principal), "Enhanced Supercritical Fluid Extraction through Solute Partitioning to a Non-Volatile Phase," Sponsored by USA Research Council, Internal to the University, $5,500.00. (March 15, 2013 - March 14, 2015).

West, K. N. (Principal), "Hamilton Syringe Grant – Gas-tight Syringes for Undergraduate and Graduate Education and Research Use," Sponsored by Hamilton Syringe Company, Private, $1,000.00. (August 1, 2013 - July 31, 2014).

West, K. N. (Co-Principal), Davis, J. H. (Principal), "USA/Chevron Ionic Liquids Technology Development," Sponsored by Chevron Energy Technology Corporation, Private, $300,000.00. (July 1, 2010 - June 30, 2014).

West, K. N. (Co-Principal), Glover, T. G. (Principal), West, C. W. (Co-Principal), "Nanoscale Modification of Fibers via Reactive Dye Chemistry," Sponsored by Army Research Office, Federal, $50,000.00. (September 1, 2013 - March 15, 2014).

West, K. N. (Co-Principal), Russ, S. H. (Principal), "A Conductivity-Based in situ Hydrocarbon Sensor," Sponsored by Alabama's Marine Environmental Science Consortium (MESC): Rapid Response Funds – Small Grants for Exploratory Research (SGER), State, $9,338.00. (January 1, 2011 - August 31, 2011).

West, K. N. (Co-Principal), Adams, M. (Principal), "Enhanced Detection of Hydrocarbons Through Optical Scattering," Sponsored by Alabama's Marine Environmental Science Consortium (MESC): Rapid Response Funds – Small Grants for Exploratory Research (SGER), State, $12,788.00. (January 1, 2011 - August 31, 2011).

West, K. N. (Principal), White, K. D. (Co-Principal), "Sustainable Landfill Gas Recovery and Utilization Project," Sponsored by Mobile County Commission/Mobile County Solid Waste Disposal Advisory Board, Local, $67,000.00. (June 1, 2010 - June 1, 2011).

West, K. N. (Principal), "Thermodynamic Characterization of Novel Ionic Liquids and Energetic Biomolecules," Sponsored by USA Research Council, Internal to the University, $5,000.00. (April 1, 2010 - March 31, 2011).

Contracts

Funded & Current

Rabideau, B.D. (Principal), West, K. N. (Co-PI & Project Manager), Reichert, W. M., Davis, J. H., B. D., Rich, T., Stevens, T., Venkiteshwaran, K., Robertson, A., Ni Chadhain, S., Miller, M., Lin, M., Cohen, M. "Phase II – Development of Next Generation CO_2 Capture Processes for Naval Applications," Sponsored by the Office of Naval Research, Department of Defense, $ 6,819,879 (September 21, 2024 – September 20, 2026)

West, K. N. (Principal), Reichert, W. M., Davis, J. H., Wheeler West, C., Rabideau, B. D., Rich, T., Stevens, T., "Development of Next Generation CO_2 Capture Processes for Naval Applications," Sponsored by the Office of Naval Research, Department of Defense, $ 4,766,506 (September 21, 2022 – June 20, 2025)

Funded & Completed

West, K. N. (Principal), "Thermal & Thermophysical Property Measurement of Urethane Precursors," Sponsored by Evonik Corporation, Private, $2,500.00. (August 15, 2016 - October 31, 2016).

West, K. N. (Principal), Glover, T. G. (Co-Principal), "Thermal & Thermophysical Property Measurement of Siloxanes," Sponsored by Evonik Corporation, Private, $2,500.00. (September 1, 2014 - February 13, 2015).

Student Research Mentoring

Graduate Students

Current Students	Graduation (or Expected)
Li Hua Zang	May 2027
Joseph W. Milter	May 2025
Ziyad Mando	December 2024

Former Students

Nathaniel Pudner	May 2024
Kelsey J. Tootle	December 2021
Blane D. Green	Spring 2015
Wei Sin Chai	Summer 2013
Samuel Murray	August 2012
Vijaykumari Jajam	August 2012
A. Shay Thigpen	December 2012
Rajeev Davuluru	May 2011

Undergraduate Research Students

Current Students	Graduation (or Expected)	
Benjamin Hines	May 2025	Departmental Honors
Ridge Matthews	May 2025	University Honors
Claudia Nguyen	May 2025	Departmental Honors
Isabela Flores	May 2026	University Honors
Janiya Hunt	May 2026	Departmental Honors
Lauren Garrone	May 2026	University Honors
Riya Patel	May 2026	University Honors

Former Students

Allan Wilson	May 2024	Departmental Honors
Britney Mack	May 2023	
Marshall Manning	May 2023	University Honors
Jason Stallings	May 2023	
Li Hua Zang	May 2023	
Tianna Lewis	May 2022	Departmental Honors
Joseph Carrier	May 2021	
Alton Stoute	May 2021	
Randi Swanson	May 2021	University Honors
Abdullah Alazmi	May 2020	Departmental Honors
Dustin Arden	May 2020	
Jordan Harbison	May 2020	Departmental Honors
Joseph Milter	May 2020	Departmental Honors
Abdullah Algady	May 2019	Departmental Honors
Mack Bozman	May 2019	Departmental Honors
Kelly Badilla	May 2019	University Honors
Bradley Brimmer	May 2019	
Tanner Hickman	May 2019	Departmental Honors

Michael Weinzirl	May 2019	Departmental Honors
Benjamin Siu	May 2018	University Honors
Amy L.Bosarge	May 2017	Departmental Honors
Cody S. Parker	May 2017	Departmental Honors
Corey D. Nguyen	May 2017	Departmental Honors
Fatima A. Hamade	May 2016	Departmental Honors
Will C. Spikes	May 2016	Departmental Honors
Alexander J. Badini	May 2015	
Katlyn A. Bramblett	May 2015	University Honors
Breanna M. Dobyns	May 2015	Departmental Honors
Seth M. Woodard	May 2015	Departmental Honors
Conner A. Jung	May 2014	Departmental Honors
Jacob V. Langham	May 2014	Departmental Honors
Matthew J. Thomas	May 2014	Departmental Honors
T. Kyle Zimlich	May 2014	
Ali AL-Hashem	May 2013	Departmental Honors
James Bolger	May 2013	
Joshua T. Richardson	May 2013	Departmental Honors
Robert J. Compton	May 2012	
Richard L. Cullum	May 2012	Departmental Honors
Misbahuddin Syed	May 2012	
Trent D. Thomas	May 2012	
Blane D. Green	December 2012	
Zachary D. Hart	May 2011	
Jake G. LeBlanc	May 2011	
K. Aaron Lepre	May 2011	Departmental Honors
John A. Cooey	August 2010	
Donna L. Gaya	May 2010	
James E. Lake	May 2010	
Samuel M. Murray	May 2010	
Johnathon D. Powell	May 2010	

Service & Synergistic Activities

University Service

Faculty Senate:	4/2012 – 4/4018
Past-President	4/2016 – 4/2017
President	4/2015 – 4/2016
Vice-President	4/2014 – 4/2015
Chair – Technology Utilization Committee	4/2013 – 4/2014
(as committee chair, member of Executive Committee)	
Engineering Caucus Leader	4/2012 – 4/2013
	4/2017 – 4/2018

University Committees:

Graduate Council	8/2019 – 12/2024
International Student Services & Success Committee	2016 – 2018
Search Committee: VPFA Human Resources	5/2017 – 10/2017
Search Committee: Dean of Graduate School/VP Academic Affairs	4/2016 – 4/2017
University Retention Committee	2016 – 2017
Sexual Harassment & Sexual Violence Resolution Committee	4/2016 – 5/2016
Committee on Standards in Conduct of Research	7/2015 – 7/2016
Search Committee: Vice President for Finance and Administration	2/2015 – 10/2015
EVisions Research Management Software Implementation Committee	2/2015 – 10/2015
University Academic Standards Committee	8/2014 – 8/2016
USA Faculty Development Committee	8/2014 – 8/2015
University Academic Computing Committee	9/2013 – 8/2014
Electronic Learning Committee	9/2013 – 8/2014
Teleconferencing Committee	8/2013 – 7/2014
University Scholarship & Financial Aid Committee	9/2011 – 8/2015
Grants-in-Focus Working Lunch (USA OSP) – Invited Speaker	12/6/2011
SACS Quality Enhancement Program Committee	12/2010 – 8/2011

First Year Experience (FYE) Development Committee	9/2010 – 11/2010
Freshman Seminar Evaluation Committee (single meeting)	2009

College Service

College Committees:

College of Engineering Tenure & Promotion Committee Chair (2022-2024)	2022 – 2024
College of Engineering Computing Committee Chair (2021-2024)	2021 – 2024
College of Engineering Representative on University Graduate Council	2019 – 2024
College of Engineering Graduate Affairs Committee	2016 – 2024 2011 – 2013
College of Engineering Undergraduate Affairs Committee	2013 – 2016
College of Engineering Safety Committee	2012 – 2016
College of Engineering Scholarship Committee	2008 – 2012
College of Engineering Academic Standards Committee (also serves as the Grade Dispute Committee)	2008 – 2012
College of Engineering EG 101 Committee	2009 – 2011
EYE and Engineer's Week Open House – Organized Demonstrations	2009, 2010
EG 101 – Developed Fermentation Design Lab and 2-Excel Projects Based on Phase Equilibria and Circuit Analysis	2010 – 2011
Fundamentals of Engineering Exam Review	
Chemistry	2008 –2013
Chemical Engineering Thermodynamics	2009 –2013

Departmental Service

Departmental Graduate Program Coordinator	2016 – 2021 2011 – 2013

Departmental Safety Committee, Chair 3/2012 – 3/2016
Implemented chemical and gas cylinder inventory and tracking system

Faculty Search Committees 2011 – 2012
2015 – 2016

Master's Comprehensive Exam – Selected the journal article and formulated questions for exam 2009 – 2021

Professional Service

Journal Reviewer: Langmuir, Fluid Phase Equilibria, ChemPhysChem, Energy & Fuels, Environmental Pollution, Industrial & Engineering Chemistry Research, International Journal of Refrigeration, Journal of Chemical & Engineering Data, Journal of Hydrogen Energy, Journal of Lipid Science & Technology, Journal of Molecular Liquids, Korean Journal of Chemical Engineering, Polymer Chemistry, Journal of CO_2 Utilization, European Journal of Lipid Science.

Grant Reviewer

ACS PRF – Proposal Review, 2024

Department of Energy – Proposal Review, 2020-2021

NSF – CBET – Chemical & Biological Separations/Molecular Thermodynamic – Joint Review Panel, January 2019

Department of Energy – EPSCoR Proposal Review, 2016

NSF – CBET – Chemical & Biological Separations – Review Panel, January 2016

NSF – CREST Center Proposal, 2015

Community Engagement

Mobile Area Council of Boy Scouts of America – Leader 2011 – Present

District Award of Merit – Five Rivers District	2024
Silver Beaver Awardee	2023
District Committee Chair	2022 – 2024
Organizer – Jaguar Merit Badge Jubilee @ USA	2020 – 2023
Assistant Scoutmaster, Advancement Chair	2018 – Present
Assistant Cub Master	2013 – 2018
Den Leader	2011 – 2013

Dauphin Way United Methodist Church 2010 – Present

Lay Leader 2023 – 2024

Church Council Chair	2021 – 2022
Church Council Vice Chair	2019 – 2020