Christy Wheeler West

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Education

University of Minnesota, Minneapolis

- Post-doctoral research associate, 2001-2003
- Department of Chemical Engineering and Materials Science
- Advisor: Lanny D. Schmidt

Georgia Institute of Technology, Atlanta

- Ph.D. Chemical Engineering, 2001
- Dissertation: "Phase-Transfer Catalysis in Supercritical Fluid Solvents"
- Advisors: Charles A. Eckert and Charles L. Liotta
- Minor: Organic Chemistry

University of Alabama, Tuscaloosa

- B.S. Chemical Engineering, *summa cum laude,* 1996

Appointments

2018 - present	**University of South Alabama, Mobile, Alabama** Director, Office of Undergraduate Research
2017- present	**University of South Alabama, Mobile, Alabama** Associate professor, Department of Chemical and Biomolecular Engineering
2011-2017	**University of South Alabama, Mobile, Alabama** Assistant professor, Department of Chemical and Biomolecular Engineering
2009-2011	**University of South Alabama, Mobile, Alabama** Adjunct professor, Department of Chemical and Biomolecular Engineering Adjunct professor, Department of Chemistry
2004-2008	**College of St. Catherine, St. Paul, Minnesota** Instructor, Department of Chemistry
2003-2004	**University of St. Thomas, St. Paul, Minnesota** Adjunct professor, Department of Chemistry Adjunct professor, Department of Mathematics

Honors and awards

- Poster Award, ASEE Chemical Engineering Summer School, 2017
- College of Engineering Excellence in Teaching Award, 2014
- Gulf Coast Advance Spotlight Scientist, March 2014
- Mortar Board Honor Society "Top Prof", 2013, 2014, 2016
- Georgia Tech School of Chemical Engineering Teamwork Award, 2000
- Georgia Institute of Technology President's Fellow, 1996-2000
- Tau Beta Pi, The Engineering Honor Society, 1994
- Omega Chi Epsilon Chemical Engineering Honor Society, 1994
- Alpha Chi Epsilon Chemistry Honor Society, 1994
- Pi Mu Epsilon Mathematics Honor Society, 1994

Active professional memberships and service

- Tau Beta Pi Engineering Honor Society
  - Faculty advisor (2012-present)
- Omega Chi Epsilon Chemical Engineering Honor Society
  - Faculty advisor (2013-present)
- American Institute of Chemical Engineers
  - Education Division 2nd Vice-Chair
  - Faculty advisor (2011-2017)
- American Chemical Society
- Council on Undergraduate Research
- American Society of Engineering Education

Current research topics

Supercritical fluid deposition of noble metals
Fundamental study of the mechanism of deposition of organometallic metal precursors from supercritical CO_2 on metal oxide substrates, including the effects of subsequent reduction and calcination conditions on nanoparticle size and morphology

Photocatalytic hydrogen production from biofuels
Photoreforming of bioderived alcohols and sugars using metal-decorated titania produced by supercritical fluid deposition

Thermally stable phase-transfer catalysts and ionic liquid reaction solvents
Kinetics of aromatic nucleophilic substitution reactions using novel rate-promoting agents

Journal Publications

Superhydrophobic Functionalization of Cotton Fabric via Reactive Dye Chemistry and a Thiol-ene Click Reaction, A. Brown, M. Bozman, T. Hickman, M.I. Hossain, T. G. Glover, K.N. West, C.W. West, *Ind. Eng. Chem. Res.*, 2019, 58, 50, 22534-22540.

How We Teach: Thermodynamics. M.A. Vigeant, J. Cole, K.D. Dahm, L.P. Ford, L.J. Landherr, D.L. Silverstein, C.W. West. *Proceedings of the 2019 ASEE Conference and Exposition*. 2019.

Impacts of calcination on surface-clean supported nanoparticle catalysts. K. Bryant, C.W. West, and S.R. Saunders. *Applied Catalysis A: General*, 2019. 579, pp.58-64.

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

A service learning project on aluminum recycling: developing professional skills in a material and energy balances course. C.W. West. *Chemical Engineering Education*, Winter 2017.

Alumina-supported Pt-CeO_x water-gas shift catalysts prepared by supercritical fluid deposition, J.W. Deal, P.T. Le, C.B. Corey; K. More; C.W. West. *J. Supercritical Fluids,* 2017, 119, 113-121.

Fusion and thermal degradation behavior of symmetric sulfur-containing quaternary ammonium bromides. T.L.Y. Huynh, K. Poiroux, R.A. O'Brien, K.N. West, J.H. Davis, Jr., and C.W. West*, J. Phys. Chem. B*, 2016, 120 (7), 1330–1335.

Guess my birthday: Demonstrating the significance of significant figures. C.W. West. *Chemical Engineering Education*. Fall 2015.

Impact of Sulfur Heteroatoms on the Activity of Quaternary Ammonium Salts as Phase-Transfer Catalysts for Nucleophilic Displacement Reactions. C.W. West, R.A. O'Brien, E.A. Salter, B.E. Hollingsworth, T.L. Huynh, R.E. Sweat, N.J. Griffin, A. Wierzbicki, J.H. Davis, Jr. *J. Molecular Catalysis A: Chemical*, 2015, 282-288.

A simple and rapid route to novel tetra(4-thiaalkyl)ammonium bromides. R.A. O'Brien, C. Wheeler West, B.E. Hollingsworth, A.C. Stenson, C.B. Henderson, A. Mirjafari, N. Mobarrez, K.N. West, K.M. Mattson, E.A. Salter, A. Wierzbicki, J.H. Davis, Jr. *RSC Adv.,* 2013, 3 (46), 24612-24617.

The water gas-shift reaction at short contact times, C. Wheeler, A. Jhalani, E. J. Klein, S. Tummala and L. D. Schmidt, *Journal of Catalysis* 2004, 223, 191-199.

Phase-Transfer-Catalyzed Intramolecular Cycloalkylation of Phenylacetonitrile with α,ω-Dibromoalkanes in Supercritical Ethane, J.P. Jayachandran, C. Wheeler, B.C. Eason, C.L. Liotta, and C.A. Eckert*, J. Supercritical Fluids* 2003, 27, 179-186.

Phase-Transfer-Catalyzed Alkylation of Phenylacetonitrile in Supercritical Ethane, C. Wheeler, D.R. Lamb, J.P. Jayachandran, J.P. Hallett, C.L. Liotta, and C.A. Eckert, *Ind. Eng. Chem. Res.* 2002, 37, 1763-1767.

Ionic liquids as catalytic green solvents for nucleophilic displacement reactions, C. Wheeler, K.N. West, C.L. Liotta, C.A. Eckert, *Chem. Commun.* 2001, 887-888.

In Situ Formation of Alkylcarbonic Acids with CO_2, K.N. West, C. Wheeler, J.P. McCarney, K.N. Griffith, D.M. Bush, C.L. Liotta, C.A. Eckert. *J. Phys. Chem. A* 2001, 105, 3947-3948.

Phase-Transfer Catalysis in Supercritical Carbon Dioxide: Kinetic and Mechanistic Investigations of Cyanide Displacement on Benzyl Chloride, K. Chandler, C.W. Culp (Wheeler), D.R. Lamb, C.L. Liotta, C.A. Eckert, *Ind. Eng. Chem. Res.* 1998, 37, 3252-3259.

Manuscripts under review

The Role of Urea in the Solubility of Cellulose in Aqueous Quaternary Ammonium Hydroxide, M. Walters, A. Mando, W.M. Reichert, C.W. West, K.N. West, B. Rabideau, Submitted to *RSC Advances.*, October 2019.

Book Chapters

Catalysis Using Supercritical or Subcritical Inert Gases under Split-Phase Conditions, P.G. Jessop, C.A. Eckert, C.L. Liotta, J. Bonilla, J.S. Brown, R. Brown, C. Thomas, C. Wheeler, and D. Wynne, *Clean Solvents*, ACS Symp. Ser. 819, L. Moens and M.A. Abraham (Eds.), American Chemical Society, Washington, D.C. 2002.

Phase-transfer and ammonium salt catalyzed reactions, C.A. Eckert, C.L. Liotta, C.W. Culp (Wheeler), D.R. Lamb, *Chemical Synthesis using Supercritical Fluids*, P.G. Jessop and W. Leitner (Eds.), VCH/Wiley, Weinheim, 1999.

Conference Presentations

Laying a Foundation with Outcome Assessment in Material and Energy Balances, .W. West, AIChE Annual Meeting Orlando, 2019.

Integrating VBA-Excel into the Curriculum across Seven Junior-Year Courses, K.N. West, C.W. West, B.D. Rabideau, AIChE Annual Meeting, Orlando, 2019.

Starting Early and Small with Technical Communications: Sophomores, Plots, and Captions. C.W. West, AIChE Annual Meeting, Pittsburgh, 2018.

Functionalization of Cellulose Surfaces using Dye Anchors and Click Chemistry, C.W. West, A. Brown, C. Moran, M. Bozman, T.G. Glover and K.N. West. AIChE Annual Meeting, Pittsburgh, 2018.

Versatile Surface Modifications for Functionalization of Fibers, C.W. West, K.N. West, T.G. Glover, M. Bozman, C. Moran, AIChE Annual Meeting, Minneapolis, 2017.

Improving Student Writing Using Word Clouds, C.W. West, ASEE Chemical Engineering Summer School, Raleigh, 2017.

Developing Professional Skills through a Service Learning Project on Aluminum Recycling, C.W. West, AIChE Annual Meeting, San Francisco, 2016.

Highly Dispersed Metals on Metal Oxide Supports Via Reactive Deposition from Supercritical CO_2, J.W. Deal, K.N. West, C.W. West, AIChE Annual Meeting, Atlanta, 2016.

Integrating Technical Content and Soft Skills Development in an Engineering Course through a Project Promoting Aluminum Recycling, C.W. West, Conference on Teaching and Learning, Mobile, 2016.

Impact of Sulfur Heteroatoms on the Activity of Quaternary Ammonium Salts as Phase Transfer Catalysts, C.W. West, R.A. O'Brien, E.A. Salter, T. Huynh, A. Wierzbicki, and J.H. Davis, Jr., AIChE Annual Meeting, Salt Lake City, 2015.

Water-Gas Shift Reaction on Catalysts Prepared using Supercritical Fluid Deposition, C.W. West, J.W. Deal, C.B. Corey, and P. Le, AIChE Annual Meeting, Atlanta, 2014.

Catalyst Preparation by Addition of Metal Ions During the Synthesis of Silica Aerogels, J. Youngpeter and C.W. West, AIChE Annual Meeting, Atlanta, 2014.

Dispersed Pt/Ceria Catalysts for Water-Gas Shift Prepared Using Supercritical Fluid Deposition, J.W. Deal, P.T. Le, C.B. Corey, and C.W. West, AIChE Annual Meeting, Atlanta, 2014.

Separations Using Supercritical CO_2 Deposited Adsorbents, S. Woodard, K.N. West, J.W. Deal, C.W. West, and, AIChE Annual Meeting, Atlanta, 2014.

Supercritical Fluid Deposition of Dispersed Platinum on Supported Ceria, C.W. West, J. W. Deal, C.B. Corey, AIChE Annual Meeting, San Francisco, 2013.

Novel Quaternary Ammonium Salts as Phase-Transfer Catalysts, B.E. Hollingsworth, C.W. West, ACS Spring Meeting, New Orleans, 2013.

Kinetic Evaluation of Novel Sulfur-Containing Quaternary Ammonium Salts as Phase Transfer Catalysts, C.W. West, R.A. O'Brien, A. Mirjafari, J.H. Davis, Jr., AIChE Annual Meeting, Pittsburgh, 2012.

Catalysts for Water-Gas Shift in Millisecond Reactors, C. Wheeler, E.J. Klein, L.D. Schmidt, AIChE Annual Meeting, Indianapolis 2002.

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

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

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

CO_2-Soluble Phase-Transfer Catalysts for Reactions in Supercritical Fluids, C.W. Culp (Wheeler), K.N. Griffith, C.L. Liotta, C.A. Eckert, 4th Annual Green Chemistry and Engineering Conference, Washington, D.C. 2000.

Phase-Transfer Catalysis in Supercritical Fluid Systems, C.W. Culp (Wheeler), C.L. Liotta, C.A. Eckert, United Engineering Foundation Conference on Supercritical Fluids in Materials Processing and Synthesis, Davos, Switzerland, 1999.

Phase-Transfer-Catalyzed Reactions in Supercritical Fluid Systems, C.W. Culp (Wheeler), K.N. Griffith, C.L. Liotta, C.A. Eckert, ACS Annual Meeting, New Orleans, 1999.

Phase-Transfer Catalysis in Supercritical Fluids, C.W. Culp (Wheeler), D.R. Lamb, K. Chandler, C.L. Liotta, C.A. Eckert, AIChE Annual Meeting, Miami Beach, 1998.

Current Funding

Linking Community College Students to Engineering, C.W. West (PI), E.J. Steward, J.D. Richardson, T.G. Thomas, N.T. Carr, NSF S-STEM, $1,000,000. 2019 – 2024.

Understanding the Molecular-Level Interactions Between Ionic Liquids and Molecular Species to Design and Develop Novel Solvent Systems for Energy Efficient Processes, K.N. West, W.M. Reichert, J.H. Davis, C.W. West (co-PI), B.D. Rabideau, Department of Energy, $2,828,833. 2019 – 2021.

BASF Teens' Lab 2020, C.W. West (PI), A. Stenson, BASF Corporation, $15,000. 2020.

Past Funding

BASF Teens' Lab 2019, C.W. West (PI), J.W. Coym, J.W. Steadman, BASF Corporation, $14,236. 2019.

21st Annual Summer Undergraduate Research Fellowship Program, C.W. West, Alabama Space Grant Consortium (NASA), $20,000. 2019.

BASF Teens' Lab 2018, C.W. West (PI), J.W. Coym, J.W. Steadman, BASF Corporation, $13,259. 2018.

BASF Teens' Lab 2017, C.W. West (PI), J.W. Coym, J.W. Steadman, BASF Corporation, $20,948. 2017.

Solar Water Splitting on Metal-Decorated Titania, C.W. West, University of South Alabama Office of Research and Economic Development, $25,000.00. 2016 – 2017.

BASF Teens' Lab 2020, C.W. West (PI), A. Stenson, BASF Corporation, $15,000. 2020.

Investigation of a Novel Hybrid Absorbent for Oil Spill Remediation, C.W. West (PI), K.N. West, T.G. Glover, Center for Environmental Resiliency, $20,000. 2015 – 2017.

Travel Grant – Catalyst Characterization at Oak Ridge National Laboratory, C.W. West, Gulf Coast NSF - ADVANCE, $4,000. 2015 – 2016.

Nanoscale Modification of Fibers via Reactive Dye Chemistry, K.N. West, T.G. Glover, West, C. W. (Co-PI), Army Research Office, $50,000. 2013 – 2014.

BASF Teens' Lab 2020, C.W. West (PI), A. Stenson, BASF Corporation, $15,000. 2020.

Synthesis and Characterization of Catalytic Noble Metal Decorated Ceria Aerogels, C.W. West, University of South Alabama Faculty Development Council, $5,500. 2012 – 2013.

Courses taught

ChE 203 – Elementary Principles of Chemical Processes

ChE 342 – Chemical Engineering Communications

ChE 372 – Chemical Reactor Design

ChE 501 – Chemical Engineering Research Seminar

ChE 525 – Chemical Reactor Analysis

EG 101 – Introduction to Engineering and Design

EG 270 – Engineering Thermodynamics

EG390H – Energy and Sustainability

EG 501 – Research Integrity Seminar

HON 301 – Introduction to Senior Honors Project

Student Research Direction

Thesis committee chair

Doctoral students	1
Master's degree students	3
University honors students	7
Departmental honors students	9

Thesis committee member

Master's degree students	8
University honors students	9

Service

Professional Service

AIChE Education Division

- Division 2nd Vice Chair — 2019-present
- Awards Committee — 2020-present
- Survey/Curriculum committee — 2018-present
- Annual Meeting session chair — 2017, 2018, 2019
- AIChE Annual Meeting student poster competition judge — 2014, 2015, 2017, 2018
- AIChE Annual Meeting student paper competition judge — 2013

Proposal review activities

- NSF – DUE IUSE and S-STEM — 2019
- NSF – GRFP, Chemical Engineering — 2016
- NSF – CBET Catalysis and Biocatalysis — 2012-2016
- DoE EPSCoR — 2014

Journal reviews

Applied Catalysis B: Environmental, *New Journal of Chemistry, Journal of Molecular Liquids, Industrial and Engineering Chemistry Research, Chemical Engineering Education, Computer Applications in Engineering Education, Fuel, Composite Interfaces, Korean Journal of Chemical Engineering*

University Service

- Code of Ethics Committee — 2019
- CISSTEM Director search committee — 2019
- University Committee on Undergraduate Research, Chair — 2018-present
- Student Success Summit panelist — 2017, 2018
- Honors College Council — 2017-present
- Process Improvement Committee — 2017-present
- Facilities Needs Committee — 2017-2018
- Academic Misconduct Policy Review Ad Hoc Committee — 2015-2017
- University Scholarship and Financial Aid Committee — 2015-present
- University Committee on Electronic Learning — 2015-present
- Learning Communities Coordinating Committee — 2015

College Service

- College-level committees
  - Undergraduate Affairs committee 2017-present
  - Promotion and Tenure committee 2017-2018
  - Excellence in Teaching Award committee 2015-2019
  - Academic Standards committee, Chair 2014-2018
  - USA-LINK Scholarship committee 2014-present
  - Scholarship committee 2012-present
- Search committees
  - Dean search committee 2019
  - College of Engineering instructor/assistant professor 2016
  - Chemical Engineering department chair 2016
  - Chemical Engineering visiting assistant professor 2016
  - Chemical Engineering assistant professor 2011, 2016
  - Systems Engineering program chair 2015
  - College of Engineering laboratory instructor 2015
  - Systems Engineering assistant/associate professor 2013, 2014
  - Electrical and Computer Engineering assistant/associate professors 2015, 2018

Departmental Service

- Undergraduate Program Chair 2016-present
- Acting Department Chair (summers) 2015, 2016
- Summer advising – first years and transfers 2013-2016
- AIChE student chapter faculty adviser 2011-2017
- Omega Chi Epsilon faculty adviser 2014-present

Community Service and Outreach

- BASF Teens' Lab 2017, 2018, 2019, 2020
- Scouts BSA Merit Badge Jubilee coordinating committee 2019
- Alabama Academy of Sciences Gorgas Scholarship reader/judge 2016, 2019, 2020
- Mobile County Elementary School Student Leadership Conference presenter 2019
- Girls Enjoying Math and Science (GEMS) planning committee 2015-2017
- GEMS workshop presenter 2014, 2015, 2016
- Mobile County Public School System Science Fair judge 2014, 2015, 2017, 2018
- USA Wesley Foundation Board (Vice-Chair) 2012-2015