

# David A. Rockstraw, Ph. D., P. E.

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## EDUCATION

**The University of Oklahoma**, Norman, Oklahoma December 1989  
Ph.D., Chemical Engineering  
Dissertation: *Experimental & Theoretical Electrodialysis Investigations*

**Purdue University**, West Lafayette, Indiana June 1986  
B.S., Chemical Engineering

## EXPERIENCE

**David A. Rockstraw, Ph. D., P. E., Inc.**, Mesilla, NM 88046

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CHEMICAL PROCESS DESIGN/REVIEW/FORENSIC ANALYSIS & EXPERT WITNESS INCORPORATED SINCE 1Q 2022

- Provided chemical phenomena/process consultation to over a hundred clients.
  - Process design/analysis engineering consulting support to both private companies and on government contracts (e.g., NSF Small Business Innovative Research grants).
  - Expert witness support of litigations involving patent infringement and/or validity, chemical process incidents/explosions/fire, environmental emissions, safety assessments, and forensic analysis of chemical process DCS data.
  - Supported over eighty litigations and thirty consulting clients.
- Professional Engineering Licensure: NM #14253; TX #135909; CA #7171

**New Mexico State University, Las Cruces, New Mexico**

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ACADEMIC DEPARTMENT HEAD, CHEMICAL & MATERIALS ENGINEERING	JUL 2012 – AUG 2021
ROBERT DAVIS DISTINGUISHED PROFESSOR	SEP 2013 – AUG 2021
NMSU DISTINGUISHED ACHIEVEMENT PROFESSOR	AUG 2012 – AUG 2021
INTERIM ACADEMIC DEPARTMENT HEAD, MECHANICAL & AEROSPACE ENGINEERING	AUG 2018 – AUG 2019
DIRECTOR & CREATOR, NMSBREW BREWERY ENGINEERING PROGRAM	JAN 2016 – APR 2019
PROFESSOR, CHEMICAL & MATERIALS ENGINEERING	AUG 2004 – AUG 2012
ASSOCIATE PROFESSOR, CHEMICAL ENGINEERING	MAY 1998 – AUG 2004
ASSISTANT PROFESSOR, CHEMICAL ENGINEERING	AUG 1995 – MAY 1998

- Numerous awards and recognitions for research, teaching, and service.
- Record of accomplishment is significant and will be detailed as needed or requested.

***Los Alamos National Laboratory, Los Alamos, New Mexico***

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VISITING SCIENTIST- NUCLEAR MATERIALS TECHNOLOGY DIVISION 1997 - 2000

- Fundamental studies of crystal habit and specific cake resistance of hydroxide neutralization precipitates from actinide processing.

***E.I. DuPont de Nemours Co., Inc. / Conoco, Inc., Ponca City, Oklahoma***

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RESEARCH ENGINEER - CORPORATE PROCESS DEVELOPMENT Aug 1990 Jul 1995

- Directed pilot plant research across business units (e.g., fluorochemicals; specialty, commodity, and agricultural chemicals; polymers & fibers) leading to commercialization.

***Ethyl Corporation, Orangeburg, South Carolina***

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SENIOR R&D ENGINEER, RESEARCH & DEVELOPMENT Sep 1989 – Jul 1990

- Developed, patented, and commercialized novel sodium/potassium catalyst and catalytic process for production of isobutylbenzene, a pharmaceutical intermediate.

***Kraft, Inc., Glenview, Illinois***

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ENGINEER I / CO-OP STUDENT- R & D DIVISION Aug 1981 – Aug 1986

- Performed material and energy balances on ethanol process (ultrafiltration, reverse osmosis, fermentation, and azeotropic distillation). Supported R&D processes including extrusion, ultrafiltration, evaporation, emulsification, spray drying, evaporation, et al.

**HONORS & RECOGNITIONS** *(not exhaustive)*

- Frank Bromilow Award for Teaching Excellence, 2016
- American Institute of Chemical Engineers Fellow, 2015
- NMSU Roush Teaching Award, 2014
- NMSU Environmental Health & Safety “Friend of Safety” Award, 2014
- Robert Davis Distinguished Professorship, 2013
- NMSU Distinguished Achievement Professor Award, 2012
- Ed and Harold Foreman Engineering Education Excellence Award, 2012
- NSPE, Prof. Engineers in Higher Ed. Engineering Education Excellence Award, 2009
- E-Council Outstanding Engineering Professor Award, 2008
- AspenTech® Educational Innovation Award, 2004
- Outstanding Chemical Engineering Faculty Member, 2001
- Research Grand Prize, American Academy Environmental Engineers, 1998
- Level II DuPont Safety Sentinel Award, 1995.
- DuPont Partnering Recognition for Suva® HFC development: 1992 and 1991

## CONTINUING EDUCATION

- Ethics Roundtable Session C, New Mexico Board of Licensure for Professional Engineers and Professional Surveyors, 2 PDH, Dec. 6, 2024.
- Ethics and AI (PDHonline.org #R232) 3 PDH, Apr. 8, 2024.
- Ethics: Case Studies in Stealing Trade Secrets (PDHonline #R215) 1 PDH, Apr. 8, 2024.
- Ethics: Case Studies in Espionage (PDHonline.org #R213) 1 PDH, Apr. 8, 2024.
- Expert Witness Testimony- Dos and Don'ts (PDHonline #G530) 1 PDH, Apr. 8, 2024.
- Ethics and Standards of Professional Conduct (PDH Pro ET-02-001) 2 PDH, Dec. 24, 2022.
- Granular Activated Carbon Systems (PDH Pro CH-02-905), 12 PDH, Dec. 24, 2022.
- Biomass Oil Analysis (PDH Pro CH-02-600), 9 PDH, Dec. 24, 2022.
- Fuel Cells (PDH Pro CH-02-180), 3 PDH, Dec. 24, 2022.
- Introduction to Valves (PDH Pro CH-02-210), 4 PDH, Dec. 24, 2022.
- Ethics: Emerging Technology Issues (TSPE Virtual Ethics Pres.), 1 PDH, Dec. 15, 2022.
- Ethics for Licensed Professionals (PDHonline.org #G100) 2 PDH, Oct. 21, 2022.
- Applied Ethics Roundtable Session C, New Mexico Board of Licensure for Professional Engineers and Professional Surveyors, 2 PDH, Dec. 4, 2020.
- Professional Ethics for New Mexico Engineers & Land Surveyors (PDHonline #R602) 2 PDH, Nov. 21, 2019.
- Ethics for U.S. Engineers (SunCam #224) 1 PDH, Dec. 23, 2015.
- Numerous courses towards completion of degree in Accounting, 2010-2012.
- Aspen Plus Training Center courses (1999-2012):
  - EEE102 Aspen Process Economic Analyzer
  - EAP250 Distillation Modeling
  - EAP150 Rigorous Design & Rating of Distillation Columns
  - EAP201 Physical Properties for Process Engineers
  - EAP2980 Modeling of Processes with Aqueous Ionic Solutions – Electrolytes & Salts

## PATENTS

- 6,225,256, May 1, 2001, Activated carbon feedstock.
- 5,157,186, Oct 20, 1992, Catalytic Coupling of an Alkene with an Aromatic.
- 5,104,843, Apr 14, 1992, Catalyst Composition for Coupling Process.

## **PROFESSIONAL SERVICE** (NOT EXHAUSTIVE)

### **American Institute of Chemical Engineers (AIChE)**

- Fellow, 2015 – present
  - Fellow's Council (2016 – 2019)
- Faculty Advisor to NMSU Student AIChE Chapter, 2007-2020
  - Outstanding Chapter recognition; 2008, 2009, 2010, 2011, 2016, 2018, 2019

### **National Society of Professional Engineers**

- Board of Directors, 2013 - 2015
- House of Delegates, 2012 - 2014
- Licensure and Qualifications to Practice Committee, 2013 – 2015
- Legislative & Government Affairs Committee, 2014 - 2015
- Chair, Professional Engineers in Higher Education (PEHE) Interest Group, 2010-11
- SW Region Vice Chair, Professional Engineers in Higher Education (PEHE), 2008-09

## **PROFESSIONAL PUBLICATIONS AND PRESENTATIONS**

1. *Things You Should Know to be an Effective Expert Witness in an Intellectual Property (IP) Matter in the Chemical Processing Industry*. D. A. Rockstraw, 2024 American Institute of Chemical Engineers annual meeting, San Diego, CA, Oct. 28, 2024.
2. *With a Grain of Salt: Crystallization and Dissolution in Salt Attack*. E. Liefeld, D. A. Rockstraw, P. Taylor, G. Figeroua, D. Ellis, Earth USA 2019 Conference, Santa Fe, NM Oct. 25-27, 2019.
3. *Brewing Education & Training* (Topical Conference: Food Innovation & Engineering). Chairs: C. E. Brewer, D. A. Rockstraw, 2018 American Institute of Chemical Engineers annual meeting, Pittsburgh, PA, Oct. 29-31, 2018.
4. *Designing a Brewery Engineering Minor within Chemical Engineering to Meet MBAA Specifications*; David Rockstraw, Catherine E. Brewer, and Stephen Taylor, American Institute of Chemical Engineers National Meeting, Pittsburgh, PA, October 29-31, 2018.
5. *Development of the New Mexico State University Brewery Engineering program of study in Chemical Engineering*, David A. Rockstraw, Oklahoma University Department of Chemical & Biological Engineering Graduate Seminar, Norman, OK, October 16, 2018 (invited).
6. *Teaching Safety in Research through a Rigorous Experimental Safety Program*, J. Miller and D.A. Rockstraw, 2018 American Society of Engineering Education, Salt Lake City, UT, June 24-27, 2018.
7. *Industrial Safety Curriculum for Chemical Engineering Education*, J. Miller & D.A. Rockstraw, Am. Institute of Chemical Engineers Natl Meeting, Oct. 30, 2017, Minneapolis, MN.
8. *Experimental Safety Plan (ESP) for Safety Management in Chemical Engineering Research*, Juanita Miller, David Rockstraw, Martha Mitchell, and Derrik Wootton, Institute of Chemical Engineers National Meeting, October 30, 2017, Minneapolis, MN.

9. *A Field Kit and Methodology for Detecting and Measuring Salts in Adobe*, Eric Liefeld and David Rockstraw, Earth USA 2017; Santa Fe, NM, Sept. 29 – Oct. 1, 2017
10. *Salt Migration Rates in Adobe Walls Constructed of Mesilla Valley Soils*, David Rockstraw, Pat Taylor, Eric Liefeld, Earth USA 2017; Santa Fe, NM, Sept. 29 – Oct. 1, 2017
11. *Additive Manufacturing of Mechanoluminescent Materials* (LA-UR- 17-26157), M. Martinez, D. Rockstraw, 2<sup>nd</sup> Annual Ultrascale Systems Res. Ctr., Los Alamos Nat'l Lab., Aug. 3, 2017.
12. *Alliance of Faculty and EHS towards Safety Goals*, D. Wootton and D.A. Rockstraw, Campus Safety, Health, & Environmental Management Assoc. (CSHEMA), July 15, 2017, Tucson, AZ.
13. *Electrochemical Conversion of CO<sub>2</sub> to Formic Acid Using Rotating Lead Electrode*, David Rockstraw, Reyad Shawabkeh, Aban Sakheta, American Institute of Chemical Engineers Meeting, November 16, 2016, San Francisco, CA.
14. Panel: What You Need to Know about Being an Expert Witness (invited panelist), Chemical Engineering & the Law Forum, American Institute of Chemical Engineers Meeting, November 14, 2016, San Francisco, CA.
15. Panel: Ethics and Expert Witnessing for Scientists & Engineers (invited panelist), Daniel B. Jett Chapter of the American Society of Civil Engineers, November 4, 2016, Las Cruces, NM.
16. *Generating Perchlorate and N-Nitrosodimethylamine Isotherms Using Pecan Shell Activated Carbons*; J. Freeh, J. Rodriguez, D. A. Rockstraw, C. E. Brewer, American Institute of Chemical Engineers National Meeting, Salt Lake City, UT, November, 11, 2015.
17. *Generating Perchlorate and N-Nitrosodimethylamine Isotherms Using Pecan Shell Activated Carbons*; J. Freeh, D. Amidei, D. A. Rockstraw, C. E. Brewer, 13<sup>th</sup> Annual Int'l Workshop on Environment and Alternative Energy, European Space Agency, Madrid, Spain, Nov. 11, 2015.
18. *Remediating Salt Attack in Adobe and Earthen Structures*; E. Liefeld, D. A. Rockstraw, G. Henry, Earth USA 2015 Conference, Santa Fe, NM Oct. 2-4, 2015.
19. *Understanding, Detecting, Measuring, and Remediating Salt Attack (Salt Weathering) in Adobe and Earthen Structures*; D. A. Rockstraw, S. Cooper, E. Liefeld, G. Henry, Earth USA 2013 Conference, Santa Fe, NM, Oct. 4-5, 2013.
20. Teach Your Students the Power of Aspen Plus® and Aspen HYSYS® with University Teaching Modules; D. A. Rockstraw, C. Yip, and B. Gochenour, AspenTech Webinar series, Oct 2 2013.
21. Corrected rate law for sulfite oxidation mechanism with ethanol-inhibition, D. A. Rockstraw, *Industrial & Engineering Chemistry Research*, **51**(35), p. 11587 (2012).
22. Old Dead Guy Trading Cards, D. A. Rockstraw, *Chem. Eng. Educ.*, **46**(1), Winter 2012.
23. Incorporating Process Simulation Across the Chemical Engineering Curriculum to Improve Student Performance On the Capstone Design Project, American Institute of Chemical Engineers Conference, Pittsburgh, PA Oct. 28 - Nov 2, 2012.
24. White Paper: The Fundamentals of Engineering Exam as an Assessment Tool of Engineering and Engineering Technology Programs: A Plan for the Future. David A. Rockstraw and other members of the NSPE Professional Engineers in Higher Education Executive Board, The National Society of Professional Engineers (2012).

25. Continuing Our Journey to Bridge the Process Safety Gaps Between Academia and Industry (Paper 232e), Bruce K. Vaughen, Thomas O. Spicer, D. Morrison, James A. Klein, and David A. Rockstraw, Am. Institute of Chemical Engineers, Minneapolis, MN, Oct. 16-21, 2011.
26. Recruiting & Interacting with Students; Erin Reyes (NSPE), David Rockstraw (NMSU), and Terrance Glunt (FDOT), NSPE Leadership Webinar Series, Nov. 11, 2010.
27. Photocatalytic Activity of TiO<sub>2</sub> and TiO<sub>2</sub>-xCxNy Thin Films From Polymer Assisted Deposition, S. Baber, Q. Lin, V. Daram, D. A. Rockstraw, S. Deng, H. Luo, American Institute of Chemical Engineers Conference, Salt Lake City, UT, Nov. 7-12, 2010.
28. Workshop: How to Make Meetings Worthwhile and Entertaining, Michelle Wilson, Alicia Aguirre, David Rockstraw, Jessica Houston, American Institute of Chemical Engineers Conference, Salt Lake City, UT, November 6, 2010.
29. Synthesis of Nanowires by Spray Pyrolysis, K. C. Pingali, S. Deng, and D. A. Rockstraw, *Journal of Sensors*, Article ID 683280, 2009, doi: 10.1155/2009/683280.
30. Synthesis of Ru-Ni Core-Shell Nanoparticles for Potential Sensor Applications, S. Deng, K. C. Pingali, D. A. Rockstraw, *Institute of Electrical and Electronics Engineers Sensors Journal: Nanosensors for Defense and Security*, **8**(5-6), pp. 730-734 (2008).
31. Synthesis and Thermal Stability of Carbon Supported and Carbon Coated Ru-Ni Core-and-Shell Nanoparticles, K. C. Pingali, S. Deng, D. A. Rockstraw; *Powder Tech.*, **187** (2008) 19–26.
32. Effect of Ammonium Nitrate on Nanoparticle Size Reduction, K. C. Pingali, S. Deng, D. A. Rockstraw; *Res. Letters in Nanotech.*, Vol. 2008, Article ID 756843, doi:10.1155/2008/756843.
33. Direct Synthesis of Ru-Ni Core-Shell Nanoparticles by Spray-Pyrolysis: Effects of Temperature and Precursor Constituent Ratio, K. C. Pingali, S. Deng, D. A. Rockstraw; *Powder Technology*, **183**(2), p.282-289 (2008).
34. Deposition of Ru-Ni-S Nanoparticles on Carbon by Spray-Pyrolysis: Effects of Solvent, K. C. Pingali, S. Deng, D. A. Rockstraw; *Current Nanoscience*, 2007, **3**, 215-221.
35. Physicochemical properties of carbons prepared from pecan shell by phosphoric acid activation, Y. Guo and D. A. Rockstraw, *Bioresource Tech.*; 98(8), 1513-1521. (May 2007).
36. Direct synthesis of Ru-Ni nanoparticles with core-and-shell structure, K. C. Pingali, S. Deng, D. A. Rockstraw; *Chemical Engineering Communications*, **194**(6), 780-786 (2007).
37. Activated carbons prepared from rice hull by one-step phosphoric acid activation, Y. Guo and D. A. Rockstraw, *Microporous & Mesoporous Matls*, **100**(1-3); 12-19, March 23, 2007.
38. Deposition Of Ru-Ni-S Nanoparticles On Carbon By Spray-Pyrolysis: Effects Of Solvent And Other Processing Parameters, K. C. Pingali, S. Deng, D. A. Rockstraw, American Institute of Chemical Engineers Conference, Salt Lake City, UT, Nov. 4-9, 2007.
39. Synthesis of Ru-Ni Core-Shell Nanoparticles for Sensor Applications, S. Deng, K. C. Pingali, D. A. Rockstraw, Nanoelectronic Devices for Defense and Security conference, organized by the U. S Army Edgewood Chemical Biological Center (ECBC) & U.S. Army Research Office (ARO) in Washington DC, June 18-21, 2007.
40. Water Distillation in a Solar Still, E. Sandoval, A. De La O, D.A. Rockstraw; American Institute of Chemical Engineers Conference, San Francisco, CA; Nov. 12-17, 2006.

41. Synthesis of core-shell nanoparticles and mathematical modeling of exponential relation of particle size variation with precursor concentration, K.C. Pingali, S. Deng, D.A. Rockstraw; Am. Institute of Chemical Engineers Conference, San Francisco, CA; November 12-17, 2006.
42. Formation of Ru-Ni core-and-shell nanoparticles by spray pyrolysis and effect of temperature and precursor constituent ratio on particle size; K. C. Pingali, S. Deng, D. A. Rockstraw; The 14<sup>th</sup> International Conference on Composites/NANO Engineering Conference, Boulder, CO; July 2-7, 2006.
43. Synthesis of carbon nanoparticle thin film with spray pyrolysis, K. C. Pingali, S. Deng, D. A. Rockstraw; *New Mexico Journal of Science*, **44**, 149-163, August 2006.
44. Physical and chemical properties of carbons synthesized from xylan, cellulose, and Kraft lignin by H<sub>3</sub>PO<sub>4</sub> activation, Y. Guo, D. A. Rockstraw, *Carbon*, **44**(8); 1464-1475 (July 2006).
45. Silver nanoparticles from ultrasonic spray pyrolysis of aqueous silver nitrate, K. C. Pingali, D. A. Rockstraw, S. Deng; *Aerosol Science & Technology*, **39**:1010–1014, 2005.
46. Synthesis of binary metal nanoparticles of Ru-Ni with core and shell structure; K. C. Pingali, S. Deng, D. A. Rockstraw, Particle Technology Forum, American Institute of Chemical Engineers Conference, Cincinnati, OH; October 30-November 4, 2005.
47. Effect of Ammonium Nitrate on Average Size Reduction of Nanoparticles of Silver and Nickel; K. C. Pingali, S. Deng, D. A. Rockstraw, Nanoscale Sci and Engr Forum, American Institute of Chemical Engineers Conference, Cincinnati, OH; October 30-November 4, 2005.
48. Suitable Course Content and Pedagogy for use of the Aspen Plus<sup>®</sup> Simulator in the Chemical Engineering Curriculum, D.A. Rockstraw, 2004 American Society of Engineering Education National Meeting, Salt Lake City, UT, June 20-23, 2004.
49. Rapid oxidation of sulfide mine tailings by reaction with potassium ferrate, D.A. Rockstraw, M. Murshed, A.T. Hanson, M.J. Johnson, International Symposium on Chemical Reaction Engineering, Chicago, IL, June 6-9, 2004.
50. ASPEN Plus<sup>®</sup> in the Chemical Engineering Curriculum: Suitable Course Content and Teaching Methodology, D. Rockstraw, *Chemical Engineering Education*, **39**(1), Winter 2004.
51. A Generating Equation for Mixing Rules and Two New Mixing Rules for Interatomic Potential Energy Parameters, A. K. Al-Matar, D. A. Rockstraw, *Journal of Computational Chemistry*; **25**(5), p.660-668 (Apr. 2004).
52. Rapid oxidation of sulfide mine tailings by reaction with potassium ferrate, M. Murshed, D.A. Rockstraw, A.T. Hanson, M.D. Johnson, *Environ. Pollution*, **125**(2), 245-253 (Sep 2003).
53. Synthesis and characterization of TiO<sub>2</sub> aerogel photocatalysts for environmental remediation technologies, D.A. Rockstraw, G.K. Newman, M. Dreyer, S. J. Kersey, II Encuentro Científico Internacional de Invierno - ECI2003i, Lima Peru Jan 2-5, 2003.
54. Adsorption of 2,4-dinitrophenol and 2,4-dinitrotoluene from aqueous system using surfactant-modified, lignocellulosic based activated carbon, A. D. Cota-Espericueta, D. Rockstraw, 224<sup>th</sup> ACS National Meeting, Boston, MA, August 18-22, 2002.
55. A model for adsorption of multiple metal ion solutes in aqueous solution onto carbon produced from pecan shells, S.A. Dastgheib, D.A. Rockstraw, *Carbon*, **40**(11), 1853-61 (2002).

56. Copper and strontium adsorption by a novel carbon material manufactured from pecan shells; RA Shawabkeh, DA Rockstraw, RK Bhada, *Carbon*, **40**(5), 781-786 (2002).
57. A Generating equation for Mixing Rules for the Interatomic Potential Parameters and a New Mixing Rule for the Noble Gases, American Institute of Chemical Engineers National Meeting, Poster Session: Applying Molecular Simulations and Computational Chemistry, Ali K Al-Matar, David A Rockstraw, Reno, NV, November 2001.
58. Pecan shell activated carbon: synthesis, characterization, & application for removal of Cu from aqueous solution, S. A. Dastgheib, D.A. Rockstraw, *Carbon*, **39**(12), 1849-55 (2001).
59. Rare Earths and Actinides: Science, Technology and Applications IV, (ISBN: 0-87339-470-4), Bautista and Mishra, editors, "Vitrified Magnesia Dissolution and Its Impact on Plutonium Residue Processing," K.W. Fife, J.L. Alwin and D.A. Rockstraw, pp. 123-135, The Minerals, Metals, & Materials Society (2000).
60. Adsorption of metal ions onto oxidized, activated carbon produced from pecan shells, in single and multicomponent systems, S.A. Dastgheib, D. A. Rockstraw, 219<sup>th</sup> American Chemical Society National Meeting, San Francisco, CA, March 27, 2000
61. Adsorption of aromatics on pecan-shell-based carbon, D.A. Rockstraw and L.A. Roybal, 219<sup>th</sup> American Chemical Society National Meeting, San Francisco, CA, March 27, 2000
62. Solution to the 1999 AIChE National Student Design Contest, D.A. Rockstraw, S.P. Bellner, American Institute of Chemical Engineers National Meeting, Dallas, TX, November 1, 1999.
63. Vitrified Magnesia Dissolution and its Impact on Plutonium Residue Processing, K.W. Fife, J.L. Alwin, D.A. Rockstraw, 129<sup>th</sup> Minerals, Metals, and Materials Society, Nashville, TN, March 12-16, 2000.
64. Real-Time Densitometer for Implementation in Hanford Tanks, M Corpening, K Anderson, DA Rockstraw, Waste Management '99; Tucson, AZ, February 28 - March 4, 1999.
65. Enhanced Pyrite Destruction and Copper Recovery with Fe(VI), A. Al-Matar, J. Alwin, J. Kearns, D. A. Rockstraw, Waste Management '99, Tucson, AZ, Feb. 28 – Mar. 4, 1999.
66. A Novel Lignocellulosic-Based Carbon Material for Separation of Ionic Species from Aqueous Solutions, D. A. Rockstraw, R. Shawabkeh, R. K. Bhada, TechnoVentions '98 Conference, Orlando, FL, December 9-12, 1998.
67. Synthesis & Characterization of Phosphate-Based Zirconium/Titanium Mixed Oxide Catalysts, D. K. Kambhampati, D. A. Rockstraw, N. Jackson, S. Thoma, poster presentation at the 2<sup>nd</sup> World Congress on Environmental Catalysis Conference, Miami, FL, November 1998.
68. One-Step Sol-Gel Synthesis of Sulfated Zirconium/Titanium Phosphate Solid Acid Catalysts, D. K. Kambhampati, D. A. Rockstraw, N. Jackson, S. Thoma, American Institute of Chemical Engineers National Meeting Proceedings, Miami, FL, November 15-19, 1998.
69. Treatment of Copper Mine Tailings by Slurry Approach: A Case Study, D.K. Kambhampati, R. Mallapragada, K.G. Raguathan, R.K. Bhada, D.A. Rockstraw, Environmental Engineering & Management Proceedings, Barcelona, Spain, September 30 – Oct. 2, 1998,
70. Synthesis & Characterization of Carbon from Pecan Shells, D. Rockstraw, Center for Applied Energy Res., Univ of Kentucky, Lexington, KY, April 23, 1998 (invited).



71. Use of Pecan Shells in the Chemical Industry, DA Rockstraw, R Shawabkeh, RK Bhada, D Binkley, XXXII Annual Western Pecan Conference, Las Cruces, NM, March 9, 1998 (invited).
72. Groundwater Remediation with Pecan Shell-Based Activated Carbon and Montmorillonite Clay, J. Alwin, D. Rockstraw, Waste Management '98, Tucson, AZ, Feb 28 - March 4, 1998.
73. Interaction of Micelles with Ion-Exchange Membranes, M. Nelson, D.A. Rockstraw, M. Montoya, J.F. Scamehorn, Am. Inst. Chem. Engrs, Los Angeles, CA, Nov. 16-21, 1997.
74. An Interdisciplinary Course in Design, D.A. Rockstraw, American Chemical Society, Emerging Technologies in Hazardous Waste Management, Special Session WERC: Bringing Environmental Excellence into the 21<sup>st</sup> Century, Pittsburgh, PA, September 15-17, 1997.
75. Reduction of BOD in Pecan Process Water using Foam Flotation, D.A. Rockstraw, National Pecan Sheller's Association Annual Meeting, Charleston, SC, September 12, 1997 (invited).
76. Removal of Reactive Dyes from Water, D.A. Rockstraw, El Paso Water Users Consortium Meeting, El Paso, TX, July 16, 1997 (invited).
77. Synthesis & Characterization of Phosphate-Based Solid Acid Catalysts, N. Jackson, D.A. Rockstraw, D.K. Kambhampati, S. Thoma, N. A. Catalysis Soc., Chicago, IL, May 19-23, 1997.
78. An Activated Carbon Manufactured by Novel Techniques, R. Shawabkeh, D. A. Rockstraw, R. K. Bhada, NMSU Graduate Student Symposium, Las Cruces, NM, May 2, 1997 (First Place).
79. Activated Carbon Manufactured by Novel Technique, DA Rockstraw, R Shawabkeh, RK Bhada, Waste-management Education & Research Consortium/Hazardous Substances Res. Consortium Joint Conference on the Environment, Albuquerque, NM, April 22-24, 1997.
80. Micellar-Enhanced Electrodialysis for Water Treatment, D.A. Rockstraw, J.F. Scamehorn, Waste-management Education and Research Consortium / Hazardous Substances Research Consortium Joint Conference on the Environment, Albuquerque, NM, April 22-24, 1997.
81. A Course in Chemical Process Design, D.A. Rockstraw, J.A. Eakman, S. Bellner, N. Nabours, Am. Soc. of Engineering Educ./Gulf SW Section Proceedings, Houston, TX, Mar. 23-25, 1997.
82. Activated Carbon Manufactured by Novel Techniques, DA Rockstraw, R Shawabkeh, RK Bhada, American Institute of Chemical Engineers Spring Mtg, Houston, TX, March 9, 1997.
83. Activated Carbon From Pecan Shells for Water Treatment, D.A. Rockstraw, R. Shawabkeh, Poster Presentation, XXXI Annual Western Pecan Conf., Las Cruces, NM, Mar. 9-11, 1997.
84. Modeling Substrate Particle Degradation by Bacillus Coagulans Biofilm, S. Rajagopalan, D. Rockstraw, S. M. McGee, *Bioresource Tech.*, **61**, (1997).
85. An Integrated Course/Project in Chemical Process Design, D.A. Rockstraw, S. Bellner, J.A. Eakman, N. Nabours, *Chemical Engineering Education*, **31**(1), Spring 1997.
86. Use of Electrodialysis to Remove Acid, Salt, & Heavy Metal Mixtures from Aqueous Solutions, D.A. Rockstraw, J.F. Scamehorn, *Separation Science. & Tech.*, **32**(11), (1997).
87. Get Real! That Way by Design, D. Rockstraw, S. Bellner, J. Eakman, N. Nabours, Am. Institute of Chemical Engineers, Free Forum on Engineering Educ., Chicago, IL, Nov. 11-15, 1996.
88. Harvest, Steam Percolation, & Composting Radioactive Flora, M. Pagedar, D. Rockstraw, Waste Management 97, Tucson, AZ, March 2-7, 1996.

89. Effect of Biofilm Parameters on Growth in Solid State Fermentation Processes, S. Rajagopalan, J. Modak, D. Rockstraw, American Institute of Chemical Engineers, Biochemical Engineering Poster Session, Chicago, IL, November 11-15 1996.
90. Are Constant Biofilm Parameters Models Valid? S. Rajagopalan, D. Rockstraw, American Society for Microbiology, Microbial Biofilms Conference, Salt Lake City, UT, October, 1996.
91. An Industrial Challenge: Case Study in Technology Commercialization, D.A. Rockstraw, Univ. of Okla. Chem. Eng. & Materials Science Seminar, Norman, OK, Mar. 9, 1995 (invited).
92. An Integrated Electrodialysis/Evaporation Process for the Treatment of Aqueous Process Streams Containing Electrolytes, D.A. Rockstraw, J.F. Scamehorn, E.A. O'Rear III, *J. of Membrane Science*, **52** (1990) 43-56.
93. An Integrated Electrodialysis/Evaporation Process for the Treatment of Aqueous Process Streams Containing Electrolytes, D.A. Rockstraw, J.F. Scamehorn, E.A. O'Rear III, American Institute of Chemical Engineers Fall National Meeting; San Francisco; CA; November 1989.
94. Characterization of Electrodialysis for the Removal of Acids, Salts and Heavy Metal Mixtures from Aqueous Solutions, D.A. Rockstraw, J.F. Scamehorn, American Institute of Chemical Engineers Summer National Meeting Proceedings; Philadelphia, PA; September 1989.
95. Removal of Dissolved Metals from Water Using Electrodialysis, D.A. Rockstraw, J.F. Scamehorn, "10th American Electroplaters and Surface Finishers & EPA Conference on Environmental Control for the Metal Finishing Industry," Orlando, FL, January 23-25, 1989.
96. Use of Electrodialysis to Clean Abandoned Zn Mine Water in NE Oklahoma: Characterization of Multi-Component Systems Containing Species of Mixed Valences, D.A. Rockstraw, J.F. Scamehorn, Annual Generic Meeting of the Bureau of Mines; Reno, NV, May 1989.
97. The Use of Electrodialysis to Clean Water from Abandoned Zinc Mines in Northeast Oklahoma: Characterization of Single Component Systems, Annual Bureau of Mines Generic Meeting, Golden, CO, May 1988.

## TESTIMONY SINCE JANUARY 2021 (†DEPOSITION; ‡TRIAL/ARBITRATION)

1. Snell & Wilmer and Kirkland & Ellis LLP, Washington, DC. Expert witness for the **defense** on a patent infringement case involving U.S. RE 46,002, “Plural Component Spray Gun for Fast Setting Materials” and 7,527,172, “Plural Component Mixing and Dispensing Apparatus.” (Graco Inc. & Graco MN, Inc. v. Carlisle Construction Materials, LLC., C.A. No. 21-245 (MN) in the U.S. District Court for the District of Delaware. 2021 - 2024).<sup>†‡</sup>
2. McDermott Will & Emery LLP, Austin, TX. Expert Witness for the **petitioner** on matter involving separation of natural gas recovered by CO<sub>2</sub> EOR (Scout Energy Management, LLC and Chevron U.S.A. Inc., v. Pilot Intellectual Property, LLC, Case IPR2024-00385, U.S. Patent 8,505,332 B1 Natural Gas Liquid Recovery Process, 2024 - ).<sup>†</sup>
3. Clarke Rajchel Engineering LLC, Laramie, WY. Expert witness for **claimant** in a matter of misappropriation of a technology developed by claimant for the production of ammonium thiosulfate (Clark Rajchel Engineering LLC v. Stercorat Hungary Kft and Intech, spol. s.r.o., Slovakia. Vienna International Arbitral Centre, 2021 - 2024).<sup>‡</sup>
4. Shearman & Sterling LLP, New York, NY. Expert witness for the **petitioner** on inter partes review of the validity of U.S. Patent No. 11,248,245 B2 Processes and Systems for Catalytic Manufacture of Wax Ester Derivatives. (Cargill, Inc., et al. v. Vantage Specialty Chemicals, Inc., United States Patent & Trademark Office, 2022 - 2024).<sup>†</sup>
5. Hausfeld, Boston, MA. Expert consultant for **plaintiff** on a matter involving 1,4-dioxane contamination of municipal water supply (Suffolk County Water Authority, v. The Dow Chemical Co., Ferro Corporation, Vulcan Materials Co., Procter & Gamble Company, Shell Oil Co., Individually and Doing Business As Shell Chemical LP., in the United States District Court For The Eastern District Of New York, Case No. 17-cv-6980. 2021 - 2023).<sup>†</sup>
6. Nelson Bumgardner Albritton PC, Orland Park, IL. Expert witness for **plaintiff** on a patent infringement case involving a corrosion prevention of automotive radiators (Electrolysis Prevention Solutions, LLC v. Daimler Trucks North America, LLC, U.S. District Court for the Western District of North Carolina Charlotte Div, Case No. 3:21-cv-171-RJC-DCK, 2023 - ).<sup>†</sup>
7. Duane Morris LLP, Houston, TX. Expert witness for **defendant** of alleged infringement of U.S. Patent No. 9,017,488 Process for Removing Hydrocarbons and Noxious Gases From Reactors and Media-Packed Equipment (Refined Technologies, Inc. v. USA Debusk LLC et al, U.S. District Court For The Southern District Of Texas Galveston Div, Civil Action No. 3:22-cv-00197, 2023 - ).<sup>†</sup>
8. Sterne, Kessler, Goldstein, & Fox, Washington, DC. Plaintiff **plaintiff** expert witness on matter involving infringement of US 8,167,141 B2, “Gravity Flow Filter” (Brita v. multiple defendants, International Trade Commission. 2021 - 2022).<sup>†‡</sup>
9. Robins Kaplan LLP; Minneapolis, MN. Expert witness for the **plaintiff** on wrongful injury and product liability matter involving dust remover product (*Ashen S. Diehl, Plaintiff v. 3M Company, Defendant, Court File No. 69DU-CV-18-2662, in the U.S. District Court State of Minnesota, Sixth Judicial District, County of St. Louis. 2020 - 2022*).<sup>†</sup>

10. Arnold & Itkin LLP; Houston, TX. Expert witness for **plaintiff** on matter involving injury out of negligence at a chemical process facility. (*Jacque Lucas, et al. v. KapStone Paper and Packaging Corp., et al.*, C/A No: 2017-CP-10-838, In the Court of Common Pleas for the Ninth Judicial Circuit, County of Charleston, SC. 2020 - 2022).<sup>†</sup>
11. Allen, Dyer, Doppelt + Gilchrist, PA; Orlando, FL. Expert witness for **plaintiff** of patent infringement and validity of U.S. Patent 6,350,453 B1 entitled, "Tocotrienols and Geranylgeraniol From Bixa Orellana Byproducts." (*American River Nutrition, LLC v. Beijing Gingko Group Biological Technology Co., Ltd et al.*, Case No.: 8:18-cv-02201-JLS- JDE in the United States District Court for the Central District of California. 2019 - 2021).<sup>†</sup>
12. Finnegan, Henderson, Farabow, Garrett & Dunner, LLP; Reston, VA. Expert witness for **plaintiff** on patent infringement matter involving the infringement and validity of U.S. Patent 7,473,685 B2 (January 6, 2009) entitled, "Process for preparation of chemically stable, dry-flow, low compact, dust free, soluble granules of phosphoroamidothioates" (UPL NA v. Tide International (USA), Inc., Zhejiang Tide CropScience, Co., Ltd., and Ningbo Tide Imp. & Exp. Co., Ltd., Civ. No. 8:19-cv-01201 C.D. Cal. 2019 - 2022).<sup>†</sup>
13. Barnes & Thornburg LLP, Dallas, TX. **Plaintiff** expert witness in matter involving trade secret theft of radiant catalytic ionization technology (DBG Group Investments, LLC, et al. v. Allen M. Johnston, Greentech Environmental, LLC, and Ellen Johnston, in arbitration administered by American Arbitration Association, Case No. 01-19-0001-7169. 2020 – 2021).<sup>†‡</sup>
14. Gibson, Dunn, & Crutcher, Washington, DC. Expert witness for **counter defendant** of anti-trust claim on topic of properties of activated carbon materials used in fuel vapor canisters (Ingevity Corporation et al v. BASF Corporation, Case # 1:18-cv-01391. 2021).<sup>†‡</sup>
15. Alston & Bird, LLP; Atlanta, GA. Expert witness for **plaintiff** on trade secret theft of manufacture methods of calcium carbonate resins. (*Heritage Plastics, Inc., Plaintiff v. Gaston Construction, Inc., Glenn Stockdale, Christopher Varnado, Plactical, LLC.*, Case 1:20-cv-00374-CLM. , U. S. District Court for the Northern District of Alabama. 2020 - 2021).<sup>†‡</sup>