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

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Las Cruces, NM 88005

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Consulting and Research Areas of Expertise

- spontaneous combustion phenomena
- chemical reaction and explosion events
- water/wastewater treatment
- activated carbon synthesis
- chemical plant design, simulation, and economic evaluation
- reaction kinetics and catalysis
- chemical separations
- heat & mass transfer phenomena
- flash pyrolysis synthesis of metallic nanoparticles

Education

The University of Oklahoma, Norman, Oklahoma — Aug 1986 – Sep 1989
Ph.D., Chemical Engineering; dissertation title: "*Experimental & Theoretical Electrodialysis Investigations;* Research Advisor: Dr. John F. Scamehorn

Purdue University, West Lafayette, Indiana — Aug 1980 – Jun 1986
B.S., Chemical Engineering

Experience

New Mexico State University, Las Cruces, New Mexico

PROFESSOR, CHEMICAL ENGINEERING	Aug 2004 – present
ASSOCIATE PROFESSOR, CHEMICAL ENGINEERING	Jun 1998 – Aug 2004
ASSISTANT PROFESSOR, CHEMICAL ENGINEERING	Aug 1995 – May 1998

Current Research Areas: metallic nanoparticle synthesis; carbon materials

Primary Teaching Subject Areas: chemical kinetics and reaction engineering; equilibrium-staged separations; chemical plant design, simulation (with Aspen Plus®), and economic evaluation; transport phenomena; and numerical techniques in Matlab and Mathcad.

Rockstraw Consulting, Las Cruces, New Mexico

CHEMICAL PROCESS CONSULTANT AND EXPERT WITNESS 1997 – present

- Alston & Bird; Atlanta, GA - expert witness for lawsuit involving theft of trade secret and intellectual property (client: Norit Americas)
- *Analytical Systems International Keco R&D Inc*., Tomball, TX – Assisted with application of Henry's Law to sensor applications.
- Automation Correct, LLC; Syracuse, NY – Performed analysis of computer code written to simulate operation and control of coal stove.
- Christesen & Jensen, Salt Lake City, UT - Expert opinion on litigation of residential fire attributed to spontaneous combustion (private client).
- Clean Can Technology, Bloomfield, NM – Advised company in the development of an adhesive foam for applications in trash can cleaning.
- Cronin & Howe, Phoenix, AZ - Provided expert testimony on residential fire attributed to spontaneous combustion (client: Classic Coatings Corp.).
- Cronin & Howe, Phoenix, AZ –Retained to provide expert testimony on litigation of residential fire purportedly attributed to spontaneous combustion (client: Arizona Paint Works).
- Clausen Miller, New York, NY - Provided expert opinion in litigation involving explosion of a chemical reactor producing sodium dihydrobis (2-methoxyethoxy) aluminate (client: Travelers Property Casualty)
- Environmental Remediation Services, LLC., Seattle WA - Performed material and energy balance calculations in support of the design and construction of a mineral processing pilot plant.
- Fluxtron Holdings, Inc., Houston, TX – Serve as chair of the Technical Advisory Board; performed numerous calculations in support of design and commercial installation of electrocoagulation cell.
- Halkey-Roberts Corporation; St. Petersburg, FL – Performed product research in support of inflation device development.
- Haynes & Boone, LLC; Dallas, TX – expert witness for lawsuit involving theft of trade secret and intellectual property (client: Norit Americas).
- Holland & Knight LLC, Tampa, FL – Provided technical analysis and opinion on several patented chemical reaction technologies.
- Paul M. Hood Law Offices, Dallas, TX - Provided expert opinion on litigation involving injury incident liability from operation of a commercial molding machine (client: Falcon Plastics, Inc.)
- Klecan & Childress, Albuquerque, NM - Expert opinion on litigation involving corrosion of residential construction materials (private client).
- LaSys, Inc., Las Cruces, NM - Consulted on self-assembly phenomena; designed, constructed, operated flash pyrolysis reactor to synthesize nanoparticles for optical applications.

Rockstraw Consulting *(continued)*

- Los Alamos National Laboratory, Los Alamos, NM – Provided expert opinion on transport phenomena calculations in support of the design of Plutonium-238 aqueous scrap processing units.
- McClaugherty & Silver PC, Santa Fe, NM – provide expert statement on the risk potential of using polybutylene pipe in radiant heating systems.
- McDonald (Bruce S.) Law Offices, Albuquerque, NM - Provided expert opinion on litigation involving a residential fire purportedly attributed to spontaneous combustion (private client)
- Miller Stratvert PA, Albuquerque, NM – Provided expert opinion on litigation involving a potentially contaminated feedstock of a food processing company.
- Modular Process Technology Corporation, San Jose, CA –Design and economic evaluation of a 10^4 mtpy silicon production facility. Presentation of the design in Wuhai City and Hohhot in the Chinese province of Inner Mongolia, Chengdu in the Sichuan province, and in Taipei, Taiwan.
- Mound, Cotton, & Wollan, New York, NY - Provided expert testimony in arbitration involving a thermal explosion at a commercial chemical facility in Grants, NM involving a scrubbing tower that removes traces of hydrofluoric acid from propane (client: Travelers Property Casualty)
- Northern Biodiesel, Ontario, NY – Performed distillation column design and rating calculations for biodiesel process.
- OZONELite™, Boca Raton, FL – Performed literature review and testimonial in support of a residential light bulb that employs a photocatalytic surface to disinfect the air. Served as technical interviewee in infomercial aimed at marketing of the product. Designed, constructed and operated a photocatalysis reactor to quantify the reaction kinetics of the Ozonelite™ bulb with acetaldehyde and used the results to perform performance calculations and design of new units.
- Paul, Hastings, Janofsky, & Walker, San Francisco, CA – Provided expert opinion on legal case involving acetic acid production.
- Peduzzi & Company; Houston, TX – Provided technical advice synthesis of tetraethyl lead and bismuth derivatives.
- Potter Industries Inc., Potsdam, NY – Assisted to analyze feasibility of using a non-ideal feedstock to a glass recycling facility
- ProTech Systems, Albany, NY – Developed heat transfer models of a wall mounted vent kit for boilers and water heaters.
- Rio Grande Environmental Products, Albuquerque, NM - Provided technical expertise to the conceptual design of a commercial activated carbon processing facility based on lignocellulosic raw materials.
- Seaton & Husk, L.P., Vienna, VA – Provided expert opinion on the operability of a gas processing unit.

Rockstraw Consulting *(continued)*

- Sets Systems, Inc.; Miami, FL – Provided review of heat transfer calculations for hot water furnace system.
- SolAqua, LLC, Las Cruces, NM - Operated solar distillation prototype with spiked feed of organic contaminants.
- Sound Earth, LLC, Fishkill, NY – Assisted with processing of a homemade cleaning product to eliminate phase separation of the product.
- T-P Domestic Bio-Fuels, Rincon, NM – Designed biodiesel and bioethanol production facility.
- Travelers' Insurance Boiler & Machinery Claim Service, Naperville, IL – provided consultation and expert opinion on the mechanisms that led to the explosion of a graphite refining furnace.
- Tri-State Biodiesel, New York, NY – Provided expertise in the design of an ultrasonic transesterification reactor system for biodiesel conversion.
- Winslow Life Rafts, Lake Suzy, FL - Designed prototype chemical-based, commercial life raft inflation system.
- Winston & Strawn LLP; Washington, DC– Performed technical analysis of potassium permanganate processes (Client: Carus Chemical Co., Peru, IL).

Los Alamos National Laboratory, *Los Alamos, New Mexico* *(summers)*

VISITING SCIENTIST- NUCLEAR MATERIALS TECHNOLOGY DIVISION 1997 - 2000

- Measurement and prediction of stability constants in complex systems.
- Fundamental studies of crystal habit and specific cake resistance for hydroxide neutralization precipitates from actinide process.

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

RESEARCH ENGINEER - CORPORATE PROCESS DEVELOPMENT Aug 1990 Jul 1995

- Managed research program for pilot plant production of Suva® HFC-134a.
- Commercialized methyl 3-hydroxy-2-thiophenecarboxylate process.
- Designed and piloted process for the continuous depolymerization of Terethane®. Supervised construction & start-up of the commercial facility.
- Designed, constructed, operated pilot systems simulating modifications to the commercial Tyvek® operation and a Lycra® depolymerization facility.
- Safety & Occupational Health Excellence Team Leader
- Sulfonyl Urea Process Engineering Creativity Team
- Hydrodechlorination Technology Committee

Ethyl Corporation, *Orangeburg, South Carolina*

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

- Developed, patented, commercialized novel Na/K catalyst and catalytic process for production of an Ibuprofen® pharmaceutical intermediate.

Kraft, Inc., *Glenview, Illinois*

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

- Performed material and energy balances on commercial fuel grade ethanol process. Unit operations included ultrafiltration, reverse osmosis, fermentation, and azeotropic distillation.
- As co-op student, provided tech support of operations at research center; extrusion, ultrafiltration, evaporation, emulsification, and spray drying.

Peer-Reviewed Publications (appearing in print and in preparation)

24. 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.
23. 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).
22. 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 Technology*, **187** (2008) 19–26.
21. Effect of Ammonium Nitrate on Nanoparticle Size Reduction, K. C. Pingali, S. Deng, D. A. Rockstraw; *Research Letters in Nanotechnology*, Volume 2008, Article ID 756843, doi:10.1155/2008/756843.
20. 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).
19. 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.
18. Physicochemical properties of carbons prepared from pecan shell by phosphoric acid activation, Y. Guo and D. A. Rockstraw, *Bioresource Technology*; 98(8), 1513-1521. (May 2007).
17. 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).
16. Activated carbons prepared from rice hull by one-step phosphoric acid activation, Y. Guo and D. A. Rockstraw, *Microporous & Mesoporous Materials*, **100**(1-3); 12-19, March 23, 2007.
15. 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.
14. Physical and chemical properties of carbons synthesized from xylan, cellulose, and Kraft lignin by H_3PO_4 activation, Y. Guo, D. A. Rockstraw, *Carbon*, **44**(8); 1464-1475 (July 2006).

13. 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.
12. ASPEN Plus® in the Chemical Engineering Curriculum: Suitable Course Content and Teaching Methodology, D. Rockstraw, *Chemical Engineering Education*, **39**(1), Winter 2004.
11. 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 (April 2004).
10. Rapid oxidation of sulfide mine tailings by reaction with potassium ferrate, M. Murshed, D.A. Rockstraw, A.T. Hanson, M.D. Johnson, *Environmental Pollution*, **125**(2), 245-253 (Sep 2003).
9. A model for the adsorption of multiple metal ion solutes in aqueous solution onto activated carbon produced from pecan shells, S. A. Dastgheib, D.A. Rockstraw, *Carbon*, **40**(11), 1853-1861 (2002).
8. A model for the adsorption of single metal ion solutes in aqueous solution onto activated carbon produced from pecan shells, S. A. Dastgheib, D.A. Rockstraw, *Carbon*, **40**(11), 1843-1851 (2002).
7. Copper and strontium adsorption by a novel carbon material manufactured from pecan shells, Shawabkeh R.A., Rockstraw D.A., Bhada R.K., *Carbon,* **40**(5), 781-786 (2002).
6. 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.
5. Pecan shell activated carbon: synthesis, characterization, and application for the removal of copper from aqueous solution, S. A. Dastgheib, D.A. Rockstraw, *Carbon*, **39**(12), 1849-1855 (2001).
4. Modeling Substrate Particle Degradation by Bacillus Coagulans Biofilm, S. Rajagopalan, D. Rockstraw, S. M. McGee, *Bioresource Tech.*, **61**, (1997).
3. 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.
2. Use of Electrodialysis to Remove Acid, Salt, & Heavy Metal Mixtures from Aqueous Solutions, D.A. Rockstraw, J.F. Scamehorn, *Separation Science. & Technology*, **32**(11), (1997).
1. 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.

Other Publications and/or Presentations

47. Deposition Of Ru-Ni-S Nanoparticles On Carbon By Spray-Pyrolysis: Effects Of Solvent And Other Processing Parameters, K. C. Pingali, S. Deng and D. A. Rockstraw, American Institute of Chemical Engineers Conference, Salt Lake City, UT, November 4-9, 2007.
46. 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.
45. Water Distillation in a Solar Still, Edgar Sandoval, Anthony De La O, D.A. Rockstraw; American Institute of Chemical Engineers Conference, San Francisco, CA; November 12-17, 2006.
44. 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; American Institute of Chemical Engineers Conference, San Francisco, CA; November 12-17, 2006.
43. 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 14th International Conference on Composites/NANO Engineering Conference, Boulder, CO; July 2-7, 2006.
42. 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.
41. Effect of Ammonium Nitrate on Average Size Reduction of Nanoparticles of Silver and Nickel; K. C. Pingali, S.Deng, D. A. Rockstraw, Nanoscale Science and Engineering Forum, American Institute of Chemical Engineers Conference, Cincinnati, OH; October 30-November 4, 2005.
40. Suitable Course Content and Pedagogy for use of the Aspen Plus® 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.
39. Rapid oxidation of sulfide mine tailings by reaction with potassium ferrate, D.A. Rockstraw, M. Murshed, A.T. Hanson, M.J. Johnson, Int. Symposium on Chemical Reaction Engineering, Chicago, IL, June 6-9, 2004.
38. Synthesis and characterization of titanium oxide 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.
37. Adsorption of 2,4-dinitrophenol and 2,4-dinitrotoluene from aqueous system using surfactant-modified, lignocellulosicbased activated carbon, A. D. Cota-Espericueta, D. A. Rockstraw, 224th ACS National Meeting, Boston, Massachusetts, August 18-22, 2002.

36. 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, November 2001.
35. **2001 AIChE Extra**: "The Expert Witness: An Alternative Career Path for the Chemical Engineer," D. A. Rockstraw, Ph.D., P.E.
34. Adsorption of metal ions onto oxidized, activated carbon produced from pecan shells, in single and multicomponent systems, S.A. Dastgheib, D.A. Rockstraw, 219th American Chemical Society National Meeting, San Francisco, California, March 27, 2000
33. Adsorption of aromatics on pecan-shell-based carbon, D.A. Rockstraw and L.A. Roybal, 219th American Chemical Society National Meeting, San Francisco, California, March 27, 2000
32. Solution to the 1999 AICHE National Student Design Contest, D.A. Rockstraw, S.P. Bellner, 1999 American Institute of Chemical Engineers National Meeting, Dallas, Texas, November 1, 1999.
31. Vitrified Magnesia Dissolution and its Impact on Plutonium Residue Processing, K.W. Fife, J.L. Alwin, D.A. Rockstraw, 129th Minerals, Metals, and Materials Society, Nashville, Tennessee, March 12-16, 2000.
30. Real-Time Densitometer for Implementation in Hanford Tanks, M. Corpening, K. Anderson, D.A. Rockstraw, Waste Management '99 Proceedings; Tucson, Arizona, February 28 - March 4, 1999.
29. Enhanced Pyrite Destruction and Copper Recovery with Fe(VI), A. Al-Matar, J. Alwin, J. Kearns, D.A. Rockstraw, Waste Management '99 Proceedings, Tuscon, Arizona, February 28 - March 4, 1999.
28. A Novel Lignocellulosic-Based Carbon Material for Separation of Ionic Species from Aqueous Solutions, D. A. Rockstraw, R. Shawabkeh, R. K. Bhada, TechnoVentions '98, Orlando, Florida, December 9-12, 1998.
27. Synthesis and Characterization of Phosphate-Based Zirconium/Titanium Mixed Oxide Catalysts, D.K. Kambhampati, D. A. Rockstraw, N. Jackson, S. Thoma, poster presentation at the 2nd World Congress on Environmental Catalysis Conference, Miami, Florida, November 1998.
26. 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, Florida, November 15-19, 1998.
25. Treatment of Copper Mine Tailings Using a Slurry Approach: A Case Study, D.K. Kambhampati, R. Mallapragada, K.G. Ragunathan, R.K. Bhada, D.A. Rockstraw, Environmental Engineering & Management Proceedings, Barcelona, Spain, September 30 - October 2, 1998,

24. Synthesis & Characterization of Carbon from Pecan Shells, D. Rockstraw, Center for Applied Energy Research, University of Kentucky, Lexington, Kentucky, April 23, 1998 (invited).
23. Use of Pecan Shells in the Chemical Industry, D.A. Rockstraw, R. Shawabkeh, R. K. Bhada, D. Binkley, XXXII Annual Western Pecan Conference, Las Cruces, New Mexico, March 9-11, 1998 (invited).
22. Groundwater Remediation with Pecan Shell-Based Activated Carbon and Montmorillonite Clay, J. Alwin, D. Rockstraw, Waste Management '98 Proceedings, Tucson, Arizona, February 28 - March 4, 1998.
21. Interaction of Surfactant Micelles with Ion-Exchange Membranes, M. Nelson, D.A. Rockstraw, M. Montoya, J.F. Scamehorn, American Institute of Chemical Engineers, Los Angeles, California, November 16-21, 1997.
20. 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 21st Century, Pittsburgh, Pennsylvania, September 15-17, 1997.
19. Reduction of BOD in Pecan Process Water using Foam Flotation, D.A. Rockstraw, National Pecan Sheller's Association Annual Meeting, Charleston, South Carolina, September 12, 1997 (invited).
18. Removal of Reactive Dyes from Water, D.A. Rockstraw, El Paso Water Users Consortium Meeting, El Paso, Texas, July 16, 1997 (invited).
17. Synthesis and Characterization of Phosphate-Based Solid Acid Catalysts, N. Jackson, D.A. Rockstraw, D.K. Kambhampati, S. Thoma, North Amer. Catalysis Society Proceedings, Chicago, May 19-23, 1997.
16. An Activated Carbon Manufactured by Novel Techniques, R. Shawabkeh, D. A. Rockstraw, R. K. Bhada, NMSU Graduate Student Symposium, Las Cruces, New Mexico, May 2, 1997 (First Place).
15. Activated Carbon Manufactured by Novel Techniques, D.A. Rockstraw, R.K. Bhada, R.A. Shawabkeh, Waste-management Education & Research Consortium/Hazardous Substances Research Consortium Joint Conference on the Environment, Albuquerque, NM, April 22-24, 1997.
14. 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.
13. A Course in Chemical Process Design, D.A. Rockstraw, J.A. Eakman, S. Bellner, N. Nabours, American Society of Engineering Education/Gulf Southwest Section Proceedings, Houston, Texas, March 23-25, 1997.
12. An Activated Carbon Manufactured by Novel Techniques, D.A. Rockstraw, R.K. Bhada, R. Shawabkeh, American Institute of Chemical Engineers Spring Meeting, Houston, TX, March 9-13, 1997.

11. Activated Carbon for Water Treatment Made From Pecan Shells, D.A. Rockstraw, R. Shawabkeh, Poster Presentation, XXXI Annual Western Pecan Conference, Las Cruces, New Mexico, March 9-11, 1997.
10. Get Real! That Way by Design, D. Rockstraw, S. Bellner, J. Eakman, N. Nabours, American Institute of Chemical Engineers Nat'l Meeting, Free Forum on Engineering Educ., Chicago, Illinois, November 11-15, 1996.
9. Harvest, Steam Percolation, & Composting Radioactive Flora, M. Pagedar, D. Rockstraw, Waste Management 97, Tucson, Arizona, March 2-7, 1996.
8. Effect of Biofilm Parameters on Growth in Solid State Fermentation Processes, S. Rajagopolan, J. Modak, D. A. Rockstraw, American Institute of Chemical Engineers National, Biochemical Engineering Poster Session, Chicago, Illinois, November 11-15 1996.
7. Are Constant Biofilm Parameters Models Valid? S. Rajagopalan, D. Rockstraw, American Society for Microbiology, Microbial Biofilms Conference, Salt Lake City, Utah, October, 1996.
6. An Industrial Challenge: Case Study in Technology Commercialization, D.A. Rockstraw, University of Oklahoma School of Chemical Engineering and Materials Science Seminar, Norman, OK, Mar. 9, 1995 (invited).
5. 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; California; November 1989.
4. The 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, Pennsylvania; September 1989.
3. 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" Proceedings, Orlando, Florida, January 23-25, 1989.
2. Use of Electrodialysis to Clean Abandoned Zinc Mines 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.
1. 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, Colorado, May 1988.

Patents

1 6,225,256, May 1, 2001, Activated carbon feedstock.

2 5,157,186, Oct 20, 1992, Catalytic Coupling of an Alkene with an Aromatic.

3 5,104,843, Apr 14, 1992, Catalyst Composition for Coupling Process.

Honors & Awards

- National Society of Professional Engineers, Professional Engineers in Higher Education Engineering Education Excellence Award, 2009
- E-Council Outstanding Professor, 2008
- AspenTech® Educational Innovation Award, 2004
- Outstanding Faculty Member, voted by the 2001 Ch E graduating class
- Research Grand Prize, American Academy Environmental Engineers, 1998
- Level II DuPont Safety Sentinel Award, 1995.
- DuPont Partnering Recognition for Suva® HFC development: 1992, 1991

Professional Activities

- Professional Society Memberships
  - ✓ *National Society of Professional Engineers*
    - ✦ *Chair Elect, Professional Engineers in Higher Education* Interest Group
  - ✓ *New Mexico Society of Professional Engineers*
    - ✦ *Vice President of Educational Practice Division*
  - ✓ American Institute of Chemical Engineers
    - ✦ *Faculty Advisor to the NMSU Student AIChE Chapter*
- Town of Mesilla Commissioner, Planning, Zoning, and Historical Appropriateness
- Technical Reviewer for the following journals or organizations:
  - ✓ *Applied Surface Science*
  - ✓ *Advances in Environmental Research*
  - ✓ *BioResource Technology*
  - ✓ *Biotechnology Research*
  - ✓ *Chemical Engineering Education*
  - ✓ *Chemical Engineering Journal*
  - ✓ *Chemosphere*
  - ✓ *Colloids & Surfaces*
  - ✓ *Environmental Technology*
  - ✓ *Fuel Processing Technology*
  - ✓ *Industrial Crops and Products*

- ✓ *Industrial & Engineering Chemistry Research*
- ✓ *International Journal of Scientific Research*
- ✓ *Journal of Physical Chemistry*
- ✓ *Journal of Membrane Science*
- ✓ *Journal of the Taiwan Institute of Chemical Engineers*
- ✓ *Journal of Environmental Management*
- ✓ *Langmuir*
- ✓ *Separation Science and Technology*

- Proposal Review for the following funding organizations:
  - ✓ *National Science Foundation, Div. of Chemical & Transport Systems*
  - ✓ *American Chemical Society - Petroleum Research Fund Type AC*
  - ✓ *US Civilian Research and Development Foundation*
    - ✦ *Arab Science & Technology Foundation's Iraq R&D Initiative*
    - ✦ *Independent States of the Former Soviet Union*
    - ✦ *Moldovan - U.S. Bilateral Grants Program*
  - ✓ *U.S. Department of Agriculture Phase I and Phase II SBIR*
  - ✓ *Oklahoma Center for Advancement of Science & Technology*
  - ✓ *Canada Foundation for Innovation*