

**New Mexico State University Alamogordo
Vice President for Academic Affairs (On-Site Interview) Agenda**

**Candidate Name: Dr. Mark Cal
March 6, 2017**

8:00 – 9:00 am
Tour of Campus

9:00 to 9:45 pm
VPAA Committee Interview – Classroom Building, Room 201

10:00 – 11:00 am
Open Forum – Rohovec Fine Arts Center; Community and Students

11:00 – 12:00 pm
Meeting with Faculty – Rohovec Fine Arts Center

12:00 – 1:30 pm
Lunch with Administrative Council

1:30 – 2:30 pm
Meeting with Business Office and Human Resources

2:30 - 3 :15 pm
Meeting with Staff– Rohovec Fine Arts Center

3:30 – 4:30 pm
Meeting with President, Ken Van Winkle

5:30
Dinner with VPAA Search Committee

Mark P. Cal, Ph.D., P.E., BCEE
Interim Vice President for Academic Affairs

ADDRESS

[REDACTED ADDRESS]

EDUCATION

[REDACTED]	Ph.D.	Civil & Environmental Engineering	University of Illinois at Urbana-Champaign
[REDACTED]	M.S.	Civil & Environmental Engineering	University of Illinois at Urbana-Champaign
[REDACTED]	B.S.	Chemical Engineering	University of Illinois at Urbana-Champaign

PROFESSIONAL REGISTRATIONS AND CERTIFICATIONS

- Registered Professional Engineer (P.E.), State of New Mexico, No. 16651
- Board Certified Environmental Engineer (BCEE), Air Pollution Engineering Specialty, American Academy of Environmental Engineers and Scientists (AAEES)
- ABET (EAC) Program Evaluator for Civil and Environmental Engineering (14 program evaluations)
- Department of Defense (DOD), Security Clearance, Secret-Level, 2007-2010 [for work at the Energetic Materials Research and Testing Center (EMRTC)]

PROFESSIONAL EXPERIENCE

- 2015-present **Interim Vice President for Academic Affairs, Professor of Engineering (tenured),**
New Mexico State University, Alamogordo, NM
- Provide leadership and oversight for all academic programs and budgets, library, online education, adult education, the tutoring center, placement testing, space utilization, curriculum, HSI-STEM grant.
 - Provide leadership to all academic areas: business, education, engineering, fine arts, health, humanities, life sciences, physical sciences, social sciences and technology.
 - Provide leadership for the revision and maintenance of all academic operating procedures.
 - Review all tenure and promotion applications and provide recommendations to Provost and President.
 - Decide student academic appeals.
 - Manage Higher Learning Commission (HLC) accreditation.
 - Liaison to the New Mexico Higher Education Department (NMHED)
 - Chair of Academic Council and Faculty Assembly
 - Approve all course and program revisions, new degrees and certificates.
 - Manage dual credit and other academic matters between NMSU-A and Otero county K-12 schools.
 - Coordinate statewide academic partnerships and memorandums of understanding.
 - Senior officer in charge (SOIC), when president is away from campus.

2013-2015 **Division Head for Math, Engineering, Science and Health, Professor of Engineering (tenured)**, New Mexico State University, Alamogordo, NM

- Managed undergraduate programs in math, engineering, science and health.
- Managed an annual budget of about \$2 million.
- Managed 80 full and part-time faculty and staff.
- Hired all faculty and staff in the Division.
- Managed course scheduling.
- Managed annual institutional assessment for division programs, courses, and HLC accreditation.
- Developed new and revised certificates, programs and courses. Obtain approvals from the NMSU System, NMHED, and HLC.
- Supervised the HSI-STEM grant and participated in the Title V grant awarded through the US Department of Education.
- Certified in the use of *Quality Matters* for on-line course instruction. Ensured that all on-line courses offered through the Division met *Quality Matters* standards.
- Developed and maintained relationships with local employers, who provide internships in science and engineering.

2002-2013 **Department Chair**, Department of Civil & Environmental Engineering, New Mexico Tech, Socorro, NM.

- Responsible for management of the ABET (EAC) accredited civil and environmental engineering programs.
- Department management included: faculty, staff and students, development of the undergraduate and graduate curricula, course scheduling, budgeting and fiscal management, purchasing, student advising, enrollment management, program assessment, faculty workload analysis, management of equipment and computer resources, program marketing, and employer relations.
- Founding Chair of the Civil Engineering program in 2002. The program grew from 0 to 120 students.
- Managed 7-times growth in department enrollment (civil and environmental engr.).
- Maintained a close working relationship with all department chairs, deans and vice presidents.
- As a participant in an HSI-STEM grant, instituted a new freshman advising system for the Civil and Environmental Engineering programs designed to improve student retention.
- Civil and Environmental Engineering lead for New Mexico Tech's Department of Education Hispanic-serving Institution (HSI) grants for undergraduate, graduate and STEM education.
- Secured a new laboratory building and equipment for the civil engineering program.
- Secured donations to the department from alumni, national labs and industry.
- Experience with distance delivery of courses, and the hiring of adjunct and visiting faculty.
- ABET-EAC assessment coordinator for all New Mexico Tech engineering programs (2009-2013).
- Sole author of four ABET-EAC self-studies for civil and environmental engineering.
- Hired many faculty, and negotiated their start-up packages.
- Served on or chaired more than 20 faculty and staff search committees. Faculty searches were in the areas of civil, environmental, chemical, mechanical, mineral and petroleum engineering. Served on various staff search committees, including library directors, visiting instructors, laboratory technicians, and administrative assistants.

- Chaired or served on 10 tenure and promotion committees.
- 2013-2014 **Director, New Mexico Environmental Finance Center (US EPA Region 6)**, Energetic Materials Research and Testing Center (EMRTC), New Mexico Tech, Socorro, NM.
- Managed \$4.2 million in grants and contracts in the areas of tribal drinking water and small public water systems and all project personnel.
 - Maintained relationships with 9 other Environmental Finance Center network partners and the U.S. Environmental Protection Agency.
 - Managed the planned closure of the New Mexico Environmental Finance Center from January 2013 to June 2014.
- 2013-present **Adjunct Faculty**, Civil and Environmental Engineering Program, New Mexico Tech, Socorro, NM.
- 2008-2013 **Professor of Civil & Environmental Engineering (Tenured)**, Department of Civil & Environmental Engineering, New Mexico Tech, Socorro, NM.
- 1999-2013 **Adjunct Faculty**, Chemical Engineering Program, New Mexico Tech, Socorro, NM.
- 2003-2008 **Associate Professor of Civil & Environmental Engineering (Tenured)**, Department of Civil & Environmental Engineering, New Mexico Tech, Socorro, NM.
- 1998-2003 **Assistant Professor of Environmental Engineering**, Department of Environmental Engineering, New Mexico Tech, Socorro, NM.
- 1996-1998 **Adjunct & Visiting Assistant Professor of Civil & Environmental Engineering (non-tenure track)**, Department of Civil & Environmental Engineering, University of Illinois at Urbana-Champaign (UIUC).
- Taught undergraduate and graduate courses in air quality engineering and science.
 - Advised graduate students.
- 1996-1998 **Research Chemical Engineer**, Illinois State Geological Survey, Minerals Engineering Section, Champaign, IL.
- Managed projects in the areas of coal gasification, catalyst preparation and SO_x and NO_x control from flue gases.
- 1995-1996 **Post-Doctoral Research Associate**, University of Nevada-Desert Research Institute, Energy and Environmental Engineering Center, Reno, NV.
- Worked on projects in the areas of ambient air quality in U.S. National parks and urban environments.
 - Managed atmospheric carbon analysis laboratory.
 - Developed and managed database of air quality conditions at US National parks.
- 1991-1994 **Graduate Research Assistant**, Department of Civil & Environmental Engineering, UIUC.
- 1992 and 1994 **Graduate Teaching Assistant**, Air Resources Engineering (CE 349), Department of Civil & Environmental Engineering, UIUC.
- 1987-1991 **Research Assistant**, Illinois State Geological Survey, Applied Research Laboratory, Champaign, IL.
- Worked on projects in the areas of SO₂ control using calcium and magnesium-based sorbents, coal preparation and analysis, and coal desulfurization prior to combustion.

AREAS OF SPECIALIZATION

Air resources engineering, heat and mass transfer, multimedia chemical fate and transport (air, water and soil), water resources engineering, pavement engineering

COURSES TAUGHT

Air pollution control, atmospheric dispersion modeling, applied principles of environmental engineering, environmental law, fluid mechanics, heat and mass transfer, thermodynamics, open channel hydraulics, pavement materials and design, senior design

ABET PROGRAM EVALUATOR SERVICE

ABET Engineering Accreditation Commission (EAC) program evaluator for 14 civil and environmental engineering programs.

THESES SUPERVISED

Supervised 30 graduate and 19 undergraduate theses.

SHORT COURSES TAUGHT

- 2008 "Roadside Safety Design," Presented to the New Mexico Department of Transportation (NMDOT), Santa Fe, NM, July 8-10 (3 days).
- 2005 "Air Pollution Control Engineering," presented at the University of New Mexico to train faculty from Eurasian National University, Kazakhstan, Albuquerque, NM, July 4-8, 2005 (16 hours).
- 2001-05 "Heat Transfer & Thermodynamics," Fundamentals of Engineering (FE) Review Course (2 hours per semester).
- 2000 "Recent Developments in Air Pollution Control," presented as part of a topical conference on air pollution, AIChE Spring National Meeting, Atlanta, GA, March 5, 2000 (8 hours).

INDIVIDUAL HONORS AND AWARDS

- 2016 [Certificate of Appreciation](#) for 10-years of service on the Environmental Engineering P.E. Exam Development Committee, National Council of Examiners for Engineering and Surveying (NCEES).
- 2011 [Certificate of Appreciation](#) for 5-years of service on the Environmental Engineering P.E. Exam Development Committee, National Council of Examiners for Engineering and Surveying (NCEES).
- 2009 [Outstanding Service Award](#), New Mexico Society of Professional Engineers (NMSPE). Recognition for outstanding service to practicing engineers and students within the State of New Mexico.
- 2002 [Distinguished Teaching Award](#), New Mexico Tech. Awarded to one faculty member per year.
- 2001 [Young Civil Engineer Achievement Award](#), Civil and Environmental Engineering (CEE) Alumni Association, University of Illinois at Urbana-Champaign. Not more than 0.1% of UIUC CEE Alumni receive this award.
- 1997 [R.A. Glenn Best Paper Award](#), American Chemical Society, Fuel Chemistry Division. Paper entitled "Cleanup of Hot Coal Gas with Carbon-based Sorbents."
- 1997 [Outstanding Staff Member Award](#), Illinois State Geological Survey, "In recognition of your distinguished achievements in the field of environmental engineering through research on clean coal technology, improvement of laboratory facilities, and mentoring of colleagues for the benefit of the Survey and the people of Illinois during the first three years of your employment."

- 1992 [First place award, student paper competition](#), Lake Michigan States Chapter of the Air and Waste Management Association (AWMA). Paper entitled “Theoretical and Experimental Results Describing the Adsorption of VOCs onto Activated Carbon Fibers.”
- 1992 [First place award, student poster competition](#), 85th Annual Meeting and Exhibition of AWMA, Kansas City, Missouri, June. Poster entitled “Theoretical and Experimental Results Describing the Adsorption of VOCs onto Activated Carbon Fibers.”
- 1992 [Graduate student scholarship](#) awarded by the Central Illinois Chapter of AWMA.

GROUP AWARDS

- 2011 [AAEE University Research Honor Award](#), “Electrothermal Swing Adsorption work for VaPRRS and Steady-State Tracking,” awarded to [Mark J. Rood](#), University of Illinois at Urbana-Champaign, with research by [Mark P. Cal](#), James Hay, Byung Kim, Pat Sullivan, Mehrdad Lordgooei, David Ramirez, Hamidreza Emamipour, Zaher Hashisho, Amit Kaldate, Deborah Thurston, and Hyun-Keun Son, American Academy of Environmental Engineers (AAEE).
- 1992 [Incomplete List of Excellent Teachers](#), Air Resources Engineering, CE 349

STUDENT ADVISEE AWARDS

- 2002 First place award, student poster competition, Annual Meeting of the Air and Waste Management Association (AWMA). Poster entitled “Destruction of 1,1,1,-Trichloroethane using Non-Thermal Plasmas” by Sandeep Agnihotri, M.S. research, (advisor: M.P. Cal), June
- 2002 First place award, student paper competition given by Lake Michigan States Section of the Air and Waste Management Association (AWMA). Paper entitled “Destruction of 1,1,1,-Trichloroethane using Non-Thermal Plasmas” by Sandeep Agnihotri, M.S. research, (advisor: M.P. Cal), April

PROJECT MANAGEMENT

Principal Investigator (PI) of projects in the areas of air resources engineering, ambient air quality, chemical fate and transport in multimedia environments (air, water, soil), multimedia transport of energetic materials (explosives), water resources engineering, drinking water quality and treatment, pavement engineering, geochemical and engineered fate analysis, corrosion of waste storage packages.

Research Grants and Contracts as PI – 21 projects at a total funding level of \$6.2 million, Investigator (I) on 10 others

MAJOR PROJECTS AND RESEARCH GRANTS

(PI = principal investigator, I = investigator)

1. **(PI)** New Mexico Environmental Finance Center, U.S. Environmental Protection Agency, 2013-2014, **\$845,000**
2. **(PI)** Training and Technical Assistance to Small Public Water Systems, U.S. Environmental Protection Agency, 2013-2014, **\$695,695**
3. **(PI)** Environmental Finance Network Training and Technical Assistance for Small Water Systems, U.S. Environmental Protection Agency, 2012-2014, **\$2,666,000**
4. **(PI)** Geochemical Analysis of Deep Boreholes, Sandia National Laboratories, 2012-13, **\$59,480** (with Dr. Patrick V. Brady)
5. **(PI)** Establishing and Validating an Aggradation Risk Index for Use in Drainage Design, New Mexico Department of Transportation (NMDOT), 2009-2012, **\$219,865** (with Dr. Clinton P. Richardson)

6. **(PI)** Blast Modeling Codes for Urban Environments, Energetic Materials Research and Testing Center (EMRTC) and Tactical Services Working Group (TSWG), 2007-08, **\$56,205** (with Mike Stanley)
7. **(PI)** Pavement Evaluation at New Mexico Airports, New Mexico Department of Transportation (NMDOT)-Aviation Division, 2006-10, **\$166,927** (with Dr. Paul W. McMullin (2006-07))
8. **(PI)** Subway Tunnel Design and Construction, Energetic Materials Research and Testing Center (EMRTC) and Tactical Services Working Group (TSWG), 2006-07, **\$61,378** (with Mike Stanley and Dr. Paul W. McMullin)
9. **(PI)** Construction and Performance Evaluation of a Novel Wastewater Treatment Filter, Global Filter, a Division of Gordon Construction Company, 2005-07, **\$264,840** (with Dr. Frank Y.C. Huang)
10. **(PI)** Corrosion of Waste Storage Packages, Sandia National Laboratories, 2004-2006, **\$121,982** (with Dr. Patrick V. Brady)
11. **(PI)** Geochemical and Engineered Fate Analysis (Adsorption of Perchlorate on Granular Activated Carbon Media), Sandia National Laboratories, 2003-2005, **\$98,450** (with Dr. Patrick V. Brady)
12. **(PI)** Determination of the Unsaturated Soil-Water Partitioning Coefficient for Explosives Transport in Soil, Sandia National Laboratories and Army Night Vision Laboratory, 2001-2002, **\$75,000** (with Dr. Robert Bowman)
13. **(PI)** Destruction of Benzene in a Non-Thermal Plasma Reactor, HICREST, 2000-2001, **\$5,000**
14. **(PI)** Destruction of Gas-Phase Pollutants using Non-Thermal Plasmas, Waste-Management Education & Research Consortium (WERC), 1999, **\$7,500**
15. **(PI)** Application of Soil Physics to Landmine Chemical Detection, Sandia-University Research Program (SURP), 1998-1999, **\$34,952**
16. **(PI)** Environmental Impacts to the Chemical Signature Emanating from Shallow UXO and Buried Landmines, Sandia National Laboratories and Strategic Environmental Research and Development Program (SERDP), 1998-2000, **\$210,000** (with Dr. Robert Bowman)
17. **(PI)** Development of Metal-Based Sorbents for Hot Gas Cleanup, Illinois Clean Coal Institute (ICCI), 1997-98, **\$80,000**
18. **(PI)** Production of Novel Sorbents from Illinois Coal for Hot Gas Cleanup, University of Illinois at Urbana- Champaign Campus Research Board, **\$12,025**
19. **(PI)** Carbon-Based Sorbents for Hot Gas Cleanup, ICCI, 1996-98, **\$144,532**
20. **(PI)** Development of Carbon Molecular Sieves for Gas Separation, ICCI, 1996-97, **\$48,387**
21. (I) Development of an Activated Carbon Fiber Cloth Adsorption/Regeneration System to Recover and Reuse Toxic Organic Compounds, Hazardous Waste Research and Information Center (HWRIC), 1996-97, PI: Dr. Mark J. Rood, University of Illinois at Urbana-Champaign
22. (I) Development of Activated Carbon for Combined SO₂/NO_x Removal, ICCI, 1996-97, PI: Dr. Anthony A. Lizzio, Illinois State Geological Survey
23. (I) Methods to Evaluate and Improve the Gasification Behavior of Illinois Coal, ICCI, 1996-97, PI: Dr. Anthony A. Lizzio, Illinois State Geological Survey
24. (I) Carbon Analysis of Interagency Monitoring of Protected Visual Environments (IMPROVE) Filters, National Park Service et al., 1995-96, PIs: Dr. Judith Chow and Dr. John Watson, Desert Research Institute
25. (I) Imperial Valley/Mexicali Cross Border PM₁₀ Transport Study, U.S. Environmental Protection Agency, Region IX, 1995, PIs: Dr. Judith Chow and Dr. John Watson, Desert Research Institute
26. (I) PM₁₀ and PM_{2.5} Variations in Time and Space, U.S. Environmental Protection Agency, 1995, PIs: Dr. Judith Chow and Dr. John Watson, Desert Research Institute

27. (I) Mt. Zirkel Wilderness Area Reasonable Attribution Study of Visibility Impairment, Colorado Department of Public Health, 1995-96, PIs: Dr. Judith Chow and Dr. John Watson, Desert Research Institute
28. (I) Review and Compilation of Information Pertaining to Asbestos Fibers in Indoor Environments, Law Firm of Segal McCambridge Singer & Mahoney, Ltd., 1992, PI: Dr. Mark J. Rood, University of Illinois at Urbana-Champaign
29. (I) Adsorption of Indoor Organic Gases onto Activated Carbon Fibers, Center for Indoor Air Research, 1991-94, PIs: Dr. Mark J. Rood and Dr. Susan M. Larson, University of Illinois at Urbana-Champaign
30. (I) Sorbent Evaluation for Pressurized Fluidized-Bed Combustion, Center for Research on Sulfur in Coal, 1989-90, PI: Dr. Massoud Rostam-Abadi, Illinois State Geological Survey

EDITORIAL SERVICE

- 2004-2006 Associate Editor, *ASCE Journal of Environmental Engineering*
- Present Reviewed manuscripts for *J. Air & Waste Management Association*, *J. Environmental Engineering*, *Carbon*, *Environmental Progress*, *Environmental Engineering Science*, *Advances in Environmental Research*, *Environmental Science & Technology*, *Energy & Fuels*, *Chemosphere*, *Indoor Air*, and *Industrial & Chemical Engineering Research*, *International Journal of Greenhouse Gas Control*

BOARD SERVICE

- 2008-2013 Director, New Mexico Air & Waste Management Association (A&WMA), NM University Representative
- 2007-2013 Vice President for Education, New Mexico Society of Professional Engineers (NMSPE), New Mexico Tech Representative
- 2010-2013 Director, New Mexico Engineering Foundation (NMEF)
- 2000-2003 Director, American Institute of Chemical Engineers (AIChE), Fuels & Petrochemicals Division

PROFESSIONAL SOCIETY SERVICE

- 2005-present National Council of Examiners for Engineering and Surveying (NCEES) Environmental Engineering PE Exam Development Committee, Clemson/Seneca, SC
- 2015-17 Chair, American Academy of Environmental Engineers and Scientists (AAEES), Air Pollution Control Examination Committee
- 2015 Air and Waste Management Association (AWMA), Judge, National Scholarship Awards
- 2014 Air and Waste Management Association (AWMA), Judge, National Paper Awards
- 2012-2013 Master of Ceremonies, Order of the Engineer, Link 85, New Mexico Tech
- 2013 New Mexico Society of Professional Engineers (NMSPE), Awards Committee for Young Engineer of the Year, Engineer of the Year, Project of the Year, and Outstanding Service
- 2012 Air and Waste Management Association (AWMA), Education Council, Judge Student Paper Awards
- 2012 New Mexico Society of Professional Engineers (NMSPE), Awards Committee for Young Engineer of the Year, Engineer of the Year, Project of the Year, and Outstanding Service
- 2009-15 American Academy of Environmental Engineers (AAEE), Air Pollution Control Examination Committee
- 2003-11 Chief Proctor, NCEES Fundamentals of Engineering (FE) Exam, New Mexico Tech Testing Site
- 2012 Air & Waste Management Association (AWMA), Student Paper Awards Committee

- 2009 Air & Waste Management Association (AWMA), Thesis Award Committee
 1998-2001 Programming Chair, Area 16c: Gas, Division of Fuels and Petrochemicals, AIChE

CONFERENCE SESSIONS CHAIRED

- 2000 Meeting Programming Chair, Recent Developments in Air Pollution Control Topical Conference, AIChE, Atlanta, GA, March 5-9
 2000 Meeting Programming Chair, 1st Annual International Conference on Gas Processing Topical Conference, AIChE, Atlanta, GA, March 5-9
 2000 Session Chairman, "Plasma Processing for Gas-Phase Pollution Control," AIChE, Spring National Meeting, Session TF005, Atlanta, GA, March 5-9
 2000 Session Chairman, "Adsorption and Absorption Processes for Air Pollution Control," AIChE, Spring National Meeting, Session TA009, Atlanta, GA, March 5-9
 1999 Session Chairman, "Adsorption and Gas Separation Processes," AIChE, Session 116, Houston, TX, March 17
 1998 Session Chairman, "Adsorption and Gas Separation Processes," AIChE, Session 16c01, New Orleans, LA, March 11
 1997 Session Chairman, "Novel Carbons for Gas Separation, Cleanup, and Storage," 23rd Biennial Conference on Carbon, Session 8B, State College, PA, July 13-18
 1996 Session Chairman, "Production and Use of Carbon-Based Materials for Environmental Cleanup," American Chemical Society (ACS) Symposium, New Orleans, LA, March 24-28

REVIEW AND ADVISORY PANELS

Member of 41 review and advisory panels for the U.S. Environmental Protection Agency, the Department of Defense, the National Science Foundation, the U.S. Department of Agriculture, and others.

PUBLICATION CITATIONS

Total Publications ~ 100

<http://scholar.google.com/citations?user=Sy9-MIsAAAAJ>

Scopus h-index = 14, i10-index = 15, Citations = 762

Google Scholar 200 most cited civil engineering authors ordered by Scopus h-index (2007-2012)

JOURNAL PUBLICATIONS

1. Bulut, G.G, **Cal, M.P.**, Richardson, C.P., Gallegos, J.B. (2012) "A Statewide Soil Erosion Risk Map for New Mexico using GIS and Fuzzy Logic," *New Mexico Journal of Science*, "New Mexico's Water Resources," Kurt S.J. Anderson Editor, Volume 46, December 2012, pp. 27-38.
2. Richardson, C.P., Gallegos, J.B., Ealey, J., **Cal, M.P.** (2012) "A GIS-based Estimate of Net Erosion Rate for Semi-Arid Watersheds in New Mexico" *New Mexico Journal of Science*, "New Mexico's Water Resources," Kurt S.J. Anderson Editor, Volume 46, December 2012, pp. 17-26.
3. Gallegos, J.B., Richardson, C.P., **Cal, M.P.**, Bulut, G.G. (2012) "A GIS-based Hydraulic Bulking Factor Map for New Mexico," *ASCE Journal of Hydrologic Engineering*, doi:10.1061/(ASCE)HE.1943-5584.0000727.
4. Bulut, G.G, **Cal, M.P.**, Richardson, C.P., Gallegos, J.B. (2012) "Soil Erosion for New Mexico: Risk Map and Sensitivity Analyses of Contributing Parameters," to be re-submitted to *ASCE Journal of Hydrologic Engineering*.
5. Agnihotri, S., **Cal, M.P.**, Prien, J. (2004) "Destruction of 1,1,1-Trichloroethane using Non-Thermal Plasma," *J. Environmental Engineering*, Vol. 130, No.3, pp. 349-355.

6. **Cal, M.P.**, Schlupe, M. (2001) "Destruction of Benzene with Non-thermal Plasma in Dielectric Barrier Discharge Reactors," *Environmental Progress*, Vol. 20, No. 3, pp. 151-156.
7. Qi, S., Hay, K.J., **Cal, M.P.** (2000) "Predicting Humidity Effect on Adsorption Capacity of Activated Carbon for Organic Vapors," *Advances in Environmental Research*, Vol. 4, No. 4, pp. 357-362.
8. **Cal, M.P.**, Strickler, B.W., Lizzio, A.A., Gangwal, S.K. (2000) "High Temperature Hydrogen Sulfide Adsorption on Activated Carbon--II. Effects of Gas Temperature, Gas Pressure and Sorbent Regeneration," *Carbon*, Vol. 38, pp. 1767-1774.
9. **Cal, M.P.**, Strickler, B.W., Lizzio, A.A. (2000) "High Temperature Hydrogen Sulfide Adsorption on Activated Carbon--I. Effects of Gas Composition and Metal Addition," *Carbon*, Vol. 38, pp. 1757-1765.
10. Qi, S., Hay, K.J., Rood, M.J., **Cal, M.P.** (2000) "Carbon Fiber Adsorption Using Quantitative Structure-Activity Relationship," *J. Environmental Engineering*, Vol. 126, No. 9, pp. 865-868.
11. Qi, S., Hay, K.J., Rood, M.J., **Cal, M.P.** (2000) "Equilibrium Adsorption and Heat of Adsorption Capacities for Water Vapor and Activated Carbon," *J. Environmental Engineering*, Vol. 126, No. 3, pp. 267-271.
12. **Cal, M.P.**, Rood, M.J., Larson, S.M. (1997) "Gas Phase Adsorption of Volatile Organic Compounds and Water Vapor on Activated Carbon Cloth," *Energy and Fuels*, Vol. 11, No. 2, pp. 311-315.
13. **Cal, M.P.**, Rood, M.J., Larson, S.M. (1996) "Removal of VOCs from Humidified Gas Streams using Activated Carbon Cloth," *Gas Separation and Purification*, Vol. 10, No. 2, pp. 117-121.
14. Dimotakis, E., **Cal, M.P.**, Economy, J., Rood, M.J., Larson, S.M. (1995) "Water Vapor Adsorption on Chemically Treated Activated Carbon Cloths," *Chemistry of Materials*, Vol. 7, No. 12, pp. 2269-2272.
15. Dimotakis, E., **Cal, M.P.**, Economy, J., Rood, M.J., Larson, S.M. (1995) "Chemically Treated Activated Carbon Cloths (ACCs) for Removal of Volatile Organic Carbons from Gas Streams: Evidence for Enhanced Physical Adsorption," *Environmental Science and Technology*, Vol. 29, pp. 1876-1880.
16. **Cal, M.P.**, Rood, M.J., Larson, S.M. (1994) "Adsorption of Acetone and Benzene onto Activated Carbon Fibers: Comparison of Experimental and Modeled Isotherms," *Environmental Progress*, Vol. 13, No. 1, pp. 26-30.

BOOK CHAPTERS

- Cal, M.P.** (2001) "Discharges of Hazardous Waste into the Atmosphere," Chapter 3, McGraw-Hill Handbook of Complex Environmental Remediation Problems, Jay Lehr, et al. Ed., ISBN: 0-07-027689-7
- Cal, M.P.** (2000) "Particulate Controls," Chapter 13-4, McGraw-Hill Handbook of Environmental Science, Health & Technology, Jay Lehr, Ed., pp. 13.43-13.54, ISBN: 0-07-038309-X
- Cal, M.P.** (2000) "Gas Controls," Chapter 13-5, McGraw-Hill Standard Handbook of Environmental Science, Health & Technology, Jay Lehr, Ed., pp. 13.55-13.68, ISBN: 0-07-038309-X
- Byers, W. and **Cal, M.P.** (2000) "Charcoal/Activated Carbon," Air Pollution Engineering Manual, Wayne T. Davis, Ed., Air and Waste Management Association and Wiley Interscience, pp. 368-371, ISBN: 0-471-33333-6.

EDITORSHIPS

- Cal, M.P.**, (2004-2006) Associate Editor, *ASCE Journal of Environmental Engineering*
- Cal, M.P.** (2001) *Environmental Progress*, Special Issue on Air Pollution Control, Vol. 20, No. 3.
- Cal, M.P.** and Siegel, D. (2000) "Recent Developments in Air Pollution Control," Topical Conference Proceedings, AIChE Spring National Meeting, March 5-9, Atlanta, GA, 230 pp.

Cal, M.P. and Chiu, C. (2000) "1st International Conference on Gas Processing," Topical Conference Proceedings, AIChE Spring National Meeting, March 5-9, Atlanta, GA, 203 pp.

DOCTORAL DISSERTATION

Cal, M.P. (1995), "Characterization of Gas Phase Adsorption Capacity of Untreated and Chemically Treated Activated Carbon Cloths," Doctoral Dissertation, University of Illinois at Urbana-Champaign, UMI Press. Graduate Advisor: Dr. Mark J. Rood. Doctoral Dissertation Committee Members: Dr. Mark J. Rood (chair), Dr. Susan M. Larson, Dr. Massoud Rostam-Abadi, Dr. James Economy.

PRESENTATIONS AND CONFERENCE PROCEEDINGS

(presenters names are underlined)

1. Gallegos, J. B., Richardson, C.P., **Cal, M.P.**, Bulut, G.G. (2012) "A GIS-based Hydraulic Bulking Factor Map for New Mexico," World Environmental & Water Resources (ASCE/EWRI) Congress, Albuquerque, NM, May 20-24
2. Bulut, G.G., **Cal, M.P.**, Richardson, C.P., Gallegos, J.B. (2012) "A GIS-based Soil Erosion Risk Map for New Mexico," World Environmental & Water Resources (ASCE/EWRI) Congress, Albuquerque, NM, May 20-24.
3. **Cal, M.P.**, (2010) "Airport Asphalt Concrete Design and Maintenance," presented at Holloman Air Force Base, NM, May 26.
4. **Cal, M.P.**, Lucero, J., Baca, T. (2009) "Pavement Management System for New Mexico Airports," presented at 46th Annual Paving Conference, Albuquerque, NM, January 6.
5. **Cal, M.P.**, Bowman, R., Phelan, J.M., Webb, S.W. (2007) "Laboratory Data and Model Comparisons of the Transport of Chemical Signatures From Buried Landmines/UXO," presented to Joint IED Defeat Organization (JIEDDO), New Mexico Tech, May 3, 2007.
6. Agnihotri, S., **Cal, M.P.**, Prien, J. (2002) "Destruction of 1,1,1-Trichloroethane in a Non-thermal Plasma Reactor," AWMA Annual Conference & Exhibition, Baltimore, MD, June.
7. Phelan, J.M., Webb, S.W., Gozdzor, M., **Cal, M.P.**, Barnett, J.L. (2001) "Effect of Soil Wetting and Drying on DNT Vapor Flux -- Laboratory Data and T2TNT Model Comparisons," Proceedings of the SPIE 15th Annual International Symposium on Aerospace/Defense Sensing, Simulation and Controls, Orlando, FL, April 16-20.
8. **Cal, M.P.**, Schlupe, M. (2000) "Destruction of Benzene in a Dielectric Barrier Discharge Plasma Reactor," AWMA Annual Conference & Exhibition, Salt Lake City, UT, June 18-22.
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