Gang Chen

Education

- Ph. D. Civil/Environmental Engineering, 2002, University of Oklahoma
- M. E. Agricultural and Biological Engineering, 1998, Cornell University
- M. S. Environmental Engineering, 1994, Harbin Institute of Technology, China
- B. S. Environmental Engineering, 1991, Qingdao Institute of Architecture and Engineering, China

Professional Experience

- Assistant Professor, Department of Civil & Environmental Engineering, Florida A&M University-Florida State University, 2005 – present
- Postdoctoral Research Associate, Center for Multiphase Environmental Research, Washington State University, 2002 – 2005
- Environmental Engineer, Qingdao Haifa, Inc., Qingdao, China, 1994 – 1996

Honors and Awards

- Florida State University First-Year Assistant Professor Award, 2006
- Heilongjiang Construction Committee Science and Technology Awards, 1993 & 1994
- Heilongjiang Science and Technology Awards, 1994

Teaching Experience

- ENV4001 Environmental Engineering, Department of Civil & Environmental Engineering, Florida A&M University-Florida State University
- ENV4341 Solid and Hazardous Waste Management, Department of Civil & Environmental Engineering, Florida A&M University-Florida State University
- CGN4930/5930 Environmental Microbiology, Department of Civil & Environmental Engineering, Florida A&M University-Florida State University
- ENV5101 Air Quality Control, Department of Civil & Environmental Engineering, Florida A&M University-Florida State University
- ENV4500/5055 Environmental Engineering Processes and Operations, Department of Civil & Environmental Engineering, Florida A&M University-Florida State University

Professional Activities

- Reviewer for: Environmental Science and Technology, Langmuir, Biotechnology Progress, the Vadose Zone Journal, Environmental Toxicology and Chemistry, Journal of Environmental Quality, Soil Science Society of America Journal, Letters in Applied Microbiology, Journal of Applied Microbiology, Journal of Adhesion Science and Technology, Journal of Hydrology, Plant and Soil, the Biochemical Engineering Journal, Ecotoxicology and Environmental Safety, Water Research, and Chemical Engineering Communications

Research Interests

- Dr. Chen's principal research interest is in the area of microbial and chemical movement and reactions in porous media, environmental biotechnology, and surface chemistry. Specific areas include: (1) characterization of water flow and solute transport in the vadose zone, (2) modeling sorption kinetics and transport of organic chemicals, colloids, and microorganisms in the subsurface, (3) microbial mediated iron transformation, (4) colloid-facilitated transport of heavy metals in unsaturated porous media, (5) bioremediation kinetics and genetic microbiology, and (6) interfacial phenomena.

Collaborators

- Markus Flury (Washington State University), Peter Lichtner (Los Alamos National Laboratory), John McCarthy (University of Tennessee), Mark Rockhood (Pacific Northwest National Laboratory), and Keith Strevett (University of Oklahoma)

Graduate Students Advised As the Principle Supervisor

- Mitch Williams
- Pawan Kumar Subramaniam
- Vijay Penagonda Srinivasa Ranga

Selected Peer-Reviewed Publications

30. Gang Chen* and Pawan Kumar Subramaniam, 2007, Bacterial deposition in unsaturated porous media as related to surface properties, under review.

29. Chen, G*., A. Chan Hilton and M. Williams, 2007, Surface free energy relationships in interpreting bacterial deposition in porous media, In, T. Edt. Modeling Bacterial Adhesion and Transport in the Environment, ACS, Symposium.

28. Liu, J., Q. Zhao, W. Xu, M. Qiao, H. Zhang, and Gang Chen* , 2007, Bacterial retention in lipopolysaccharide coated silica sand, Sep. Sci. Technol., in press.

27. Gang Chen* and Pawan Kumar Subramaniam, 2007, Impact of colloid size on colloid deposition in porous media under water saturated and unsaturated conditions, in preparation.

26. Liu, J., M. Qiao, H. Zhang, W. Yang and G. Chen*, 2006, Determination of microbial sorption Isotherms from column experiments. Separ. Sci. Technol., in press.

25. Chen, G.* and H. Zhu, 2005. Bacterial adhesion to silica sand as related to Gibbs energy variations. Colloid Surface B., 44, 41-48.

24. Chen, G.*, M. Qiao, H. Zhang and H. Zhu, 2005. Sorption and transport of naphthalene and phenanthrene in silica sand in the presence of rhamnolipid biosurfactant. Separ. Sci. Technol., 40: 2411-2425.

23. Chen, G.* and H. Zhu, 2005. Lindane isotherms interpreted in terms of interaction free energies with porous media. J. Adhes. Sci. Technol., 19, 579-593.

22. Chen, G.* and H. Zhu, 2005. Lindane affinity to silica sand as related to surface properties. Separ. Sci. Technol., 40, 1277-1291.

21. Chen, G., M. Flury, J. B. Harsh and P. Lichner, 2005. Colloid-facilitated transport of cesium in variably-saturated Hanford sediments. Environ. Sci. Technol., 39, 3435-3442.

20. Chen, G. and M. Flury, 2005. Retention of mineral colloids in unsaturated porous media as related to their surface properties. Colloid Surface A., 256, 207-216.

19. Chen, G.* and H. Zhu, 2005. *Lux*-marked Pseudomonas aeruginosa lipopolysaccharide production in the presence of rhamnolipid. Colloid Surface B., 41, 43-48.

18. Chen, G.*, 2004. Rhamnolipid biosurfactant behavior in solutions. J. Biomat. Sci-Polym. E., 15, 229-236.

17. Chen, G.*, M. Qiao, H. Zhang and H. Zhu, 2004. Bacterial desorption in water saturated porous media in the presence of rhamnolipid biosurfactant. Res. Microbiol., 155, 655-661.

16. Chen, G.* and H. Zhu, 2004. Bacterial deposition in the porous medium as impacted by solution chemistry. Res. Microbiol., 155, 467-474.

15. Chen, G.* and H. Zhu, 2004. Impact of lipopolysaccharide coating on clay particle wettability. Colloid Surface B., 35, 143-147.

14. Chen, G.*, 2004. Reductive dehalogenation of tetrachloroethylene by microorganisms: current knowledge and application strategies. Appl. Microbiol. Biotechnol., 63, 373-377.

13. Flury, M., S. Czigány, G. Chen and J. B. Harsh, 2004. Cesium migration in saturated silica sand and Hanford sediments as impacted by ionic strength. J. Contam. Hydrol., 71, 111-126.

12. Chen, G.*, 2003. *Escherichia coli* adhesion to abiotic surfaces in the presence of nonionic surfactants. J. Adhes. Sci. Technol., 17, 2131-2140.

11. Chen, G.*, 2003. Interaction decay of nonionic surfactants at water surfaces. Chem. Phys. Lett., 376, 758-760.

10. Chen, G.*, H. Zhu and Y. Zhang, 2003. Soil microbial activities and carbon and nitrogen fixation. Res. Microbiol., 154, 393-398.

9. Chen, G. and K. A. Strevett, 2003. Bacterial deposition in aqueous media: a surface thermodynamic Investigation. Environ. Eng. Sci., 20, 237-248.

8. Chen, G., M. Rockhold and K. A. Strevett, 2003. Equilibrium and kinetic adsorption of microbes on alluvial sand. Res. Microbiol., 154, 175-181.

7. Strevett, K. A. and G. Chen, 2003. Microbial surface thermodynamics and application. Res. Microbiol., 154, 329-335.

6. Chen, G. and K. A. Strevett, 2003. Impact of carbon and nitrogen conditions on *Escherichia coli* surface Thermodynamics. Colloid Surface B., 28, 135-146.

5. Chen, G. and K. A. Strevett, 2003. Microbial surface thermodynamics and interactions in aqueous media. J. Colloid Interf. Sci., 261, 283-290.

4. Chen, G. and K. A. Strevett, 2002. Surface free energy relationships used to evaluate microbial transport. J. Environ. Eng., 128, 408-415.

3. Chen, G. and K. A. Strevett, 2001. Impact of surface thermodynamics on bacterial transport. Environ. Microbiol., 3, 237-245.

2. Chen, G. and K. A. Strevett, 2001. Impact of bacterial extracellular polymers on lindane transport. Environ. Eng. Sci., 18, 191-203.

1. Chen, G., K. A. Strevett and Br. A. Vanegas, 2001. Naphthalene, phenanthrene and surfactant Biodegradation.. Biodegradation, 12, 433-442.

* Corresponding author

Presentations

Chen, G., Abichou, T. and Chanton, J. Impact of Landfill Leachate on Iron Release from Northwest Florida Iron Rich Soil, Technical Exchange on Iron at Landfills, Destin, FL, Oct. 2006.

Chen, G. Bacterial transport as related to their surface properties (Invited talk), 115th Annual Meeting, American Chemical Society, San Francisco, Sep. 2006.

Chen, G. Interfacial phenomena and contact angle measurements, Department of Chemical Engineering, FAMU-FSU College of Engineering, December, 2005.

Harsh, J., Flury, M., Deng, Y. and Chen, G. *In situ* formation of colloidal phases and their role in radionuclide transport, 18th World Congress of Soil Science, Philadelphia, July 2006.

Liu, J., Wang, H., He, Y., Xu, W. and Chen, G. Bacterial transport as related to surface properties, 106th General Meeting, Orlando, May 2006.

Chen, G. Bacterial transport in the subsurface, Auburn University, November, 2005.

Chen, G. Hanford Site, past, current and future: colloid mobilization study, FAMU-FSU College of Engineering, September, 2005

Chen, G. Water infiltration and colloid mobilization in Hanford Sediments, Department of Chemical Engineering, FAMU-FSU College of Engineering, September, 2005.

Chen, G. Bacterial transport as impacted by solution chemistry, Michigan State University, June 2005.

Chen, G. Water infiltration and colloid mobilization in Hanford Sediments, West Virginia University, February, 2005.

Chen, G. *lux*-marked *Pseudomonas aeruginosa* growth and lipopolysaccharide production in the presence of rhamnolipid, New Jersey Institute of Technology, April, 2005.

Chen, G., Qiao, M., Zhang, H. and Zhu, H. Bacterial desorption in water saturated porous media in the presence of rhamnolipid biosurfactant, Western Pacific Geophysics Meeting, Honolulu, August 2004.

Chen, G., Flury, M. Research activities of the soil physics/vadose zone hydrology group, Water Resources Research & Extension Colloquium, Pullman, WA, April 2004.

Chen, G., Flury, M. and Harsh, J. B. Colloidal removal during transport in variably-saturated Hanford sediments, Annual Meeting of Geological Society of America, Seattle, November 2003.

Chen, G., Flury, M. and Harsh, J. B. Cesium desorption from binding colloids during transport in Hanford sediments, American Geophysical Union Fall Meeting, San Francisco, December 2002.

Chen, G., Flury, M. and Harsh, J. B. Colloid-facilitated transport of cesium in variably-saturated Hanford sediments, Invited seminar, Washington State University, September 2002.

Chen, G. and Strevett, K. A. Bacterial deposition in aqueous media, American Geophysical Union Fall Meeting, San Francisco, December 2001.