Romy Chakraborty

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Current Status

Scientific and Engineering Associate
Microbial Ecology, Earth Sciences Division
Lawrence Berkeley National Lab.

Educational

PhD in Microbiology, University of California at Berkeley, December 2004
Dissertation: Anaerobic hydrocarbon degradation by a novel chlorate-reducing organism.
Master of Science in Life Sciences, University of Mumbai (Bombay), India, 1997
Bachelor of Science in Microbiology, University of Bombay, India, 1995

Research and Professional Experience

- February 2005 – Aug 2005: Postdoctoral Scholar, University of California, Berkeley
- Sept 2005-July 2008: Postdoctoral Scholar, Lawrence Berkeley National Laboratory
- Aug 2008-current: Scientific and Engineering Associate, Lawrence Berkeley National Laboratory
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Teaching Experience:

- 1998: Teaching assistant and Lab instructor for undergraduate course 'Principles of Microbiology'.
- 1999: Teaching assistant and Lab instructor for undergraduate course 'Basic concepts of microbiology.'
- 2004-2005: Invited Guest Lecture, PMB 112 core course, University of California, Berkeley

Professional Honor and Awards:

- Exceptional quality of abstract, American Society of Microbiology General Meeting, May 2001.
- Co-performer of research project awarded "Project of the year" by Strategic Environmental Research and Development Program of the United States DOE, DOD, EPA (SERDP), Nov 2001.
- Best poster award at the 11th International Humics Substance Society Meeting, July 2002.
- Doctoral Fellowship, 2002.

Professional Society Membership

- American Society of Microbiology
- International Society for Microbial Ecology
- American Geophysical Union
- Associate Faculty member, Faculty of 1000 Biology

Invited Talk

1) Los Alamos National Lab, Los Alamos, New Mexico, February 2005
2) Bengal Engineering and Science University, Kolkata, India, February 2006
3) West Bengal University of Technology, Kolkata India, February 2006
4) Southern Illinois University, Carbondale, IL, February, 2008
5) Society for Industrial Microbiology, San Diego, August 2008.

Session Chair

1) AGU Fall meeting, San Francisco, Dec 2008: Geochemical Controls and Microbial Response in Metal-Contaminated Environments II

Patent Application:

- US Patent Application no 10/372,628: 'Biological Anaerobic treatment of BTEX contamination.'

Book Review:

- Romy Chakraborty and Terry C Hazen. (2006) Environmental Toxicology 2nd edition by Alan Scragg. In The Quarterly Review of Biology 81(3), University Of Chicago Press.

Book Chapters:

- Coates J.D and **Chakraborty R.** (2003) Anaerobic Bioremediation - An Emerging Resource for Environmental Cleanup. In, Bioremediation: A Critical Review. Horizon Scientific Press (Editors: I.M. Head, I. Singleton and M. Milner University of Newcastle, UK).

Publications in Journals:

1) Coates J.D., **Chakraborty R**., Lack, J.G., O'Connor, S.M., Cole, K.A., Bender K.S., and Achenbach, L.A. (2001) Anaerobic benzene oxidation coupled to nitrate reduction in pure culture by two novel organisms. Nature 411:1039-1043.

2) Coates J.D, **Chakraborty R.**, O'Connor, S.M, and Thieme, J. (2001) The geochemical effects of microbial humic substances reduction. Acta hydrochimica et hydrobiologica 28(7):420-427.

3) Coates J.D, Cole K.A, **Chakraborty R**, O'Connor S.M, Achenbach L.A. (2002). The diversity and ubiquity of bacteria utilizing humic substances as an electron donor for anaerobic respiration. Applied and Environmental Microbiology 68(5): 2445-2452.

4) Lack J.G, Chaudhuri S. K, **Chakraborty R**, Achenbach L.A, Coates J.D. (2002) Anaerobic biooxidation of Fe(II) by *Dechlorosoma suillum*. Microbial Ecology 43: 424-431.

5) Bender K.S, **Chakraborty R**, O'Connor S.M, Coates J.D, Achenbach L.A. (2002) Sequencing and Transcriptional Analysis of the Chlorite Dismutase Gene of *Dechloromonas agitata* and Its Use as a Metabolic Probe. Applied and Environmental Microbiology 68(10): 4820-4826.

6) Coates J.D, **Chakraborty R**, McInerney M.J, (2002) Anaerobic benzene biodegradation- a new era. Research in Microbiology 153: 621-628.

7) **Chakraborty, R** and Coates, J.D. (2004) Anaerobic degradation of monoaromatic hydrocarbons. Applied Microbiology and Biotechnology 64: 437-446.

8) **Chakraborty R** and Coates J.D. (2005). Hydroxylation and carboxylation – two crucial steps of anaerobic benzene degradation by *Dechloromonas* strain RCB**.** Applied and Environmental Microbiology. 71(9): 5427-5432.

9) Bender K. S, Shang C, **Chakraborty R**, Belchik S.M, Coates J.D, and Achenbach L.A (2005). Identification, characterization, and classification of genes encoding perchlorate reductase. Journal Of Bacteriology. 187: 5090-5096.

10) **Chakraborty R**, O'Connor S.M, Chan E, and Coates J. D (2005) Anaerobic degradation of BTEX compounds by *Dechloromonas* strain RCB. Applied and Environmental Microbiology. 71(12): 8649-8655.

11) Tang Y.J*, **Chakraborty R***, Martin H.G, Chu J, Hazen T.C, Keasling J.D (2007) Flux analysis of central metabolic pathways in the Fe (III)-reducing organism *Geobacter metallireducens* via ^{13}C isotopic labeling. Applied and Environmental Microbiology. 73(12): 3859-3864.

12) Mukhopadhyay A, Redding A.M, Joachimiak M.P, Arkin A.P. Borglin S.E, Dehal P.S, **Chakraborty R**, Geller J.T, Hazen T.C, He Q, Joyner D.C, Martin V.J.J, Wall J.D, Yang Z.K, Zhou J, Keasling J.D (2007). Cell wide responses to low oxygen exposure in *Desulfovibrio vulgaris* Hildenborough. J. Bacteriol 189(16): 5996-6010.

13) Faybishenko, B., Hazen T.C, Long P.E, Brodie E.L, Conrad M.E, Hubbard S.S, Joyner D.C, Borglin S.E, **Chakraborty R**, Williams K.H, Peterson J.E, Chen J, Tokunaga T.K, Wan J, Firestone M, Newcomer D.L, Resch C.T, Cantrell K.J, Willett A, Koenigsberg S. (2008). In Situ Long-Term Bioimmobilization of Cr(VI) in Groundwater Using ^{13}C-Labeled Slow-Release Lactate. Environ. Sci. &Tech. 42(22): 8478-8485.

14) Hazen T.C, **Chakraborty R**, Gregory I.R, Bowman J.P, Jimenez L, Zhang D, Fleming J.M, Sayler G.S, Pfiffner S.M, Brockman F.J. (2009) Use of Gene Probes to Assess the Impact and Effectiveness of Aerobic *In Situ* Bioremediation of TCE and PCE. Archives of Microbiol. 191:221-232.

15) **Chakraborty R**, Brodie E.L., Faybishenko B.A, Andersen G.L., Abulencia C, Keller M, Van Nostrand J, Zhou J, Dehal P, Arkin A.P, Hazen TC. Microbiology of the chromium-tolerant bacteria from chromium-contaminated 100H site at Hanford (in prep)

16) **Chakraborty R**, Fortney J. L. Zhou A., Joachimiak M, Borglin S. E, He Z, Arkin A. P, Zhou J, Hazen T. C. Investigation of Stress Response in Metal-Reducing Organism *Geobacter metallireducens* Strain GS15 (in prep)