

DEV CHIDAMBARAM

Assistant Professor

Chemical And Materials Engineering Department

LMR 261, University of Nevada Reno, Reno, NV 89557-0388

Phone 1-775-784-7066 • Cell 1-631-678-6817 • Fax 1-775-327-5059 • dcc@unr.edu

www.electrochemical.org

EDUCATION

2003 (Dec)	State University of New York (SUNY), Stony Brook, NY <i>Ph.D. (Materials Science and Engineering)</i>
2001 (Dec)	
2000 (May)	
1994 Aug–1998 Jun	Central Electrochemical Research Institute, India <i>B.Tech (Chemical and Electrochemical Engineering)</i>

EXPERIENCE

2009 Aug - date	<i>Assistant Professor (Materials Engineering),</i> University of Nevada Reno (UNR), Reno, NV
2004 Oct-2009 Aug	Brookhaven National Laboratory, Upton, NY Promoted to <i>Associate Materials Scientist</i> effective Oct 2009 <i>Assistant Materials Scientist (Environmental Sciences)</i> <i>Spokesperson- Beamline X11, National Synchrotron light Source (NSLS), Brookhaven National Laboratory (BNL)</i> <i>Goldhaber Distinguished Fellow (Environmental Sciences)</i>
2009 May	
2007 Oct – 2009 Aug	
2007 Mar – 2010 Aug	
2004 Oct– 2007 Sep	
2004 Feb – Sep	State University of New York (SUNY), Stony Brook, NY <i>Postdoctoral Associate (Materials Science and Engineering)</i>

AWARDS AND FELLOWSHIPS

The Hans-Jürgen Engell Prize – awarded annually by the International Society for Electrochemistry (ISE) to a young electrochemist on the basis of published work (**Received September 2006**).

Goldhaber Distinguished Postdoctoral Fellowship (2004-2007) – Prestigious fellowship awarded by Brookhaven National Laboratory to select few recent doctoral graduates showing promise of qualifying for scientific staff position at the laboratory. (**Three awarded in 2004**).

Morris Cohen Award – This award is given by the Electrochemical Society (ECS) in recognition of outstanding graduate research, conducted in the previous two years (**2005**).

Lindau Nobel Laureates Foundation – Chosen to attend the 55th Meeting of the Nobel

Laureates in Lindau, Germany. Nearly 600 young researchers were selected from over 10,000 nominations to attend the valuable and inspiring meeting. Over 50 Nobel laureates participated in the 2nd interdisciplinary meeting (2005).

President's Distinguished Doctoral Dissertation Award – Highest recognition given by the State University of New York at Stony Brook signifying the outstanding merit of the dissertation and its research base (2004). Five outstanding dissertations receive the award (of dissertations accepted by the university in the preceding year) each year.

American Vacuum Society (AVS) – Graduate Research Award (2003). Only ten graduate students (amongst all fields in science and engineering) are honored by the international society.

Society for Applied Spectroscopy – National Graduate Student Research Award (2003). Highest recognition given to a graduate student by the society. One award every year.

Sigma Xi – Excellence in Research Award and elected to membership of the society (2003).

Sigma Xi – Travel Award in recognition of quality and importance of research (2003).

New York Society for Applied Spectroscopy (NYSAS) – Graduate Research Award (2003).

The Electrochemical Society (ECS) – Travel award to present exceptional research at the 203rd Meeting of The Electrochemical Society in Paris (2003).

Student services award – Department of Materials Sc. & Eng., SUNY at Stony Brook, NY 11794-2275. (2000)

Scholarship grant of 100,000 INR (Indian Rupees) – for most promising research talent amongst students pursuing graduate studies; AMM foundation, Madras India. (1998). 5 awards/year.

Summer research fellowship– Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR – <http://www.jncasr.ac.in>), Bangalore, India. (Summer 1998). 75 scholarships/>8500 applicants

Conferred the title “Rajiv Gandhi Science Talent Fellow” for exceptional research work performed by a student; The Rajiv Gandhi Foundation (RGF), New Delhi, India. (1997). 10 students in the country conferred with the title every year.

Prestigious summer research fellowship (SRF) – JNCASR, Bangalore, India. (Summer 1997). 75 scholarships/>8500 applicants.

Student research fellowship – recipient of the fellowship rarely provided to undergraduate students at the country's premier research laboratory, Bhabha Atomic Research Center (<http://www.barc.ernet.in>), Bombay, India. (Fall 1996).

PATENTS

D. Chidambaram and A. J. Francis, '*Extracellular Bioreduction*' – a process for bioremediation and wastewater treatment; **U.S. Patent 8,158,399. Issued 2012-04-17.**

D. Chidambaram, 'Enhanced Metabolite Generation' – a process for enhancing the

production of biofuels and other microbial fermentation products; **U.S. Patent 8,143,020. Issued 2012-03-20.**

D. Chidambaram, Y. Liu and M. Rafailovich, 'Encapsulated Microbes in Cross-linkable Polymers' – a process for encapsulating microorganisms in polymeric fibers while ensuring their survival to use them as bioactive materials, U.S. Patent Pending. Patent Publication/Serial No. 12/420,088

FUNDED PROPOSALS: AT UNR: AS PI: \$1,765,000 AS CO-PI:\$1,135,000

National Science Foundation. "Microbially-Active Functional Material Based Bioreactors for Continuous Production of Biofuels and Industrial Feedstock", PI: D. Chidambaram. To be funded **\$313, 000; Oct 2012 – Sept 2015**

Department of Energy Nuclear Program: "Supercritical Water Loop for Dynamic Studies of Mechanical and Corrosion Behavior of Nuclear Materials Under Extreme Conditions", PI: D. Chidambaram. **\$348,000; Dec 2011 – Sept, 2013**

Nuclear Regulatory Commission. "Faculty Development Program in Nuclear Materials Engineering ", PI: D. Chidambaram. **\$615,000; Aug 2011 – Sept, 2015**

Nuclear Regulatory Commission. "Development of Nuclear Materials Engineering and Combustion Courses at the University of Nevada, Reno", PI: D. Chidambaram, Co-PI: M. Greiner. **\$89,000; Aug 2011 – Sept, 2013**

Department of Energy – Workforce Development Program '*Professional Workforce Development in Renewable Energy through an Online Certification Program*'; PIs: N. LaTourette, D. Chidambaram, A. Broch and R. Boehm. **\$135,000; Nov 2010 – Sept 2011.**

Department of Energy – Biodiesel generation '*Next generation Biofuels from Non-food Sources*'; PI: M. Misra, Co-PI: D. Chidambaram. **\$1,000,000; Sept 2010 – Sept 2012.**

Nuclear Regulatory Commission – Graduate Fellowships Program, '*The University of Nevada, Reno Fellowship Program in Materials and Thermal Science for Nuclear Power*'; Co-PI's: M. Greiner and D. Chidambaram. **\$399,997; Apr 2010 – Mar 2014.**

Technology Maturation Proposal titled '*Electrochemically Enhancing Bio-ethanol Production – Phase 1*', Funding Agency: Brookhaven National Laboratory with Department of Energy concurrence. PI: D. Chidambaram. **\$78,000; 2008-2009.**

Renewable fuel for transportation proposal titled '*Point of Use Generation of Bio-hydrogen in a Catalytic Fuel Cell for Transportation*', Funding Agency: Advanced Energy Research and Technology Center (AERTC). Co-PI's: D. Chidambaram, M. H. Rafailovich and A. Frenkel. **\$50,000; 2008-2010.**

Laboratory Directed Research and Development program titled '*A Novel Approach for Efficient*

Biofuel Generation. Funding Agency: Brookhaven National Laboratory with Department of Energy concurrence. PI: D. Chidambaram. **\$214,000; 2007-2009.**

Natural and Accelerated Bioremediation Research program titled '*Molecular Mechanisms of Uranium Reduction by Clostridia and its Manipulation*'. Funding agency: Department of Energy, Environmental Remediation Science Division, **\$1,100,000; Oct 2005-Sept 2008.** Collaboration with Stanford University, CA. Senior person on the proposal. P.I.'s: A. J. Francis and A. C. Matin.

BOOK CHAPTERS

2. D. Roeper, and **D. Chidambaram**, 'Molybdate-Based Non-Toxic Oxide Coating for Depleted Uranium Alloys', in Springer Briefs, Ed. Dr. Edward McCafferty; Springer, New York, NY (Vol in Press, 2012)

1. D. Roeper, and **D. Chidambaram**, 'Development and Characterization of an Environmentally Friendly Coating to Protect Depleted Uranium - 0.75 WT. % Titanium Alloy', **Book Chapter** in *Uranium: Compounds, Isotopes and Applications*, Ed. G. H. Wolfe. Hauppauge, NY, Nova Publishers: 1-44. (2009).

PUBLICATIONS

42. D. Rodriguez and **D. Chidambaram**, 'Molybdenum Based Conversion Coatings for Aluminum Alloy AA2024-T6', *Journal of the Electrochemical Society* (Under Review) (2012). Manuscript Tracking Number: JES-12-2413

41. D. D. Bala, M. Misra, and D. Chidambaram, 'Single Step Biodiesel Production from Low Quality Feedstock Using Mesoporous Catalyst', *Bioresource Technology* (Under Review) (2012). Manuscript Tracking Number: BITE-12-04867

40. D. Rodriguez and **D. Chidambaram**, 'Molybdenum Based Conversion Coatings for Aerospace Aluminum Alloys', *Electrochemical Society Transactions, (ECS), Volume 45 in Press* (2012).

39. D. Rodriguez, R. Misra, and **D. Chidambaram**, 'Development of Corrosion Protective Coatings for Aluminum Alloys', *Electrochemical Society Transactions, (ECS), Volume 45 in Press* (2012).

38. A. Johnson, G. Merilis, J. Hastings, M. E. Palmer, J. P. Fitts, and **D. Chidambaram**, 'Degradation of Organic Dyes using Nanotechnology and Microbial Electrochemistry', *Journal of the Electrochemical Society* (Under Review)

37. D. Roeper, and **D. Chidambaram** (in press). 'Molybdate-Based Non-Toxic Oxide Coating for Depleted Uranium Alloys'. In Dr. Ed McCafferty (Ed.), 'Molybdate-Based Non-Toxic Oxide Coating for Depleted Uranium Alloys'. New York, NY: Springer Briefs, Springer.

36. A. Johnson, G. Merilis, J. Hastings, M. E. Palmer, J. P. Fitts, and **D. Chidambaram**, 'Nanotechnology and Microbial Electrochemistry for Environmental Remediation', *Electrochemical Society Transactions, (ECS), 33* (38), 103 (2011).

35. **Chidambaram, D.**, Hennebel, T., Taghavi, S., Mast, J., Boon, N., Verstraete, W., van der Lelie, D., Fitts, J. P., 'Concomitant Microbial Generation of Palladium Nanoparticles and Hydrogen to Immobilize Chromate', *Environmental Science & Technology*, 44, 7635 (2010).

34. De Gusseme, B.; Du, L. G.; Hennebel, T.; Renard, P.; **Chidambaram, D.**; Fitts, J. P.; Bruneel, E.; Van, D. I.; Verbeken, K.; Boon, N.; Verstraete, W., 'Virus Removal by Biogenic Cerium', *Environmental Science & Technology*, 44, 6350 (2010).

33. Roeper, D. F. and **D. Chidambaram**, 'Development and Characterization of an Environmentally Friendly Coating to Protect Depleted Uranium - 0.75 Wt. % Titanium Alloy', **Book Chapter** in *Uranium: Compounds, Isotopes and Applications*, Ed. G. H. Wolfe. Hauppauge, NY, Nova Publishers: 1-44. (2009).

32. Y. Liu, M. H. Rafailovich, R. Malal, D. Cohn, and **D. Chidambaram**, 'Engineering of bio-hybrid materials by electrospinning polymer-microbe fibers', *Proceedings of the National Academy of Sciences*, **106**, 34, 14201 (2009).

31. D. F. Roeper, **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Development of an Environmentally-Friendly Protective Coating for the Depleted Uranium-0.75 wt.% Titanium Alloy Part V: Electrochemical Impedance Spectroscopy of the Coating', *Electrochimica Acta*, **53**, 5, 2130 (2008).

30. D. Chidambaram, Y. Liu, R. Malal, D. Cohn, and M. Rafailovich, 'Bio-active Polymer Fibers for Environmental Remediation', *Polymer Preprints (American Chemical Society)*, **49**, 1, 901-902 (2008).

29. D. F. Roeper, **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Development of an Environmentally-Friendly Protective Coating for the Depleted Uranium-0.75 Wt% Titanium Alloy. Part IV: Vibrational Spectroscopy of the Coating', *Electrochimica Acta*, **51**, 23, 4815 (2006).

28. D. F. Roeper, **D. Chidambaram**, C. R. Clayton, G. P. Halada and J. D. Demaree, 'Development of an Environmentally-Friendly Protective Coating for the Depleted Uranium-0.75 Wt% Titanium Alloy. Part III: Chemical Analysis of the Coating', *Electrochimica Acta*, **51**, 19, 3895 (2006).

27. **D. Chidambaram**, C. R. Clayton and G. P. Halada, 'The Role of Hexafluorozirconate in the Formation of Chromate Conversion Coatings on Aluminum Alloys', *Electrochimica Acta*, **51**, 14, 2862 (2006).

26. D. F. Roeper, **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Development of an Environmentally-Friendly Protective Coating for the Depleted Uranium-0.75 Wt% Titanium Alloy. Part II: Coating Formation and Evaluation', *Electrochimica Acta*, **51**, 3, 545 (2005).

25. D. F. Roeper, **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Development of an Environmentally-Friendly Protective Coating for the Depleted Uranium-0.75 Wt% Titanium Alloy. Part I: Surface Morphology And Electrochemistry', *Electrochimica Acta*, **50**, 18, 3622 (2005).

24. **D. Chidambaram**, C. R. Clayton, and M. Dorfman, 'Evaluation of the Electrochemical Behavior of HVOF-Sprayed Alloy Coatings – II', *Surface & Coatings Technology*, **192**, 2, 278 (2005).

23. **D. Chidambaram**, C. R. Clayton, M. W. Kendig and G. P. Halada, 'Surface Pretreatments

of Aluminum Alloy AA2024-T3 and Formation of Chromate Conversion Coatings 2: Composition and Electrochemical Behavior of the Chromate Conversion Coating, *Journal of The Electrochemical Society*, **151**, 11, B613 (2004).

22. **D. Chidambaram**, C. R. Clayton, G. P. Halada and M. W. Kendig, Surface Pretreatments of Aluminum Alloy AA2024-T3 and Formation of Chromate Conversion Coatings 1: Composition and Electrochemical Behavior of the Oxide Film, *Journal of The Electrochemical Society*, **151**, 11, B605 (2004).

21. **D. Chidambaram** and C. R. Clayton, The Role of Fluoride Compounds in the Formation of Chromate Conversion Coatings on Aluminum Alloys, in *Corrosion and Corrosion Prevention of Low Density Metals and Alloys - II*, 204th Meeting of the Electrochemical Society, R.G. Bucheit, R.G. Kelly, B.A. Shaw, N. Missert, Eds., The Electrochemical Society, Pennington, NJ, **PV2003-23**, 203 (2004).

20. **D. Chidambaram**, G. P. Halada, and C. R. Clayton, Spectroscopic Elucidation of the Repassivation of Active Sites on Aluminum by Chromate Conversion Coating, *Solid State and Electrochemical Letters*, **7**, 9, B31 (2004).

19. **D. Chidambaram**, G. P. Halada, and C. R. Clayton, Synchrotron Radiation Based Grazing Angle Infrared Spectroscopy of Chromate Conversion Coatings Formed on Aluminum Alloys, *Journal of The Electrochemical Society*, **151**, 3, B160 (2004).

18. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, Interactions of the Components of Chromate Conversion Coating with the Constituents of Aluminum Alloy AA2024-T3, *Journal of The Electrochemical Society*, **151**, 3, B151 (2004).

17. **D. Chidambaram**, C. R. Clayton, and M. Dorfman, Evaluation of the Electrochemical Behavior of HVOF-Sprayed Alloy Coatings, *Surface & Coatings Technology*, **176**, 3, 307 (2004).

16. D. Demaree, C. R. Clayton, **D. Chidambaram**, D. F. Roeper, and G. P. Halada, Corrosion Protective Coatings for Depleted Uranium, *Proceedings of the Tri-Service Corrosion Conference* (2003)

15. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, A Duplex Mechanism Based Model for the Interaction between Chromate Ions and the Hydrated Oxide film on Aluminum Alloys, *Journal of The Electrochemical Society*, **150**, 5, B224-B237 (2003).

14. **D. Chidambaram**, M. J. Vasquez, G. P. Halada, and C. R. Clayton, Studies on the repassivation behavior of aluminum and aluminum alloy exposed to chromate solutions, *Surface Interface Analysis*, **35**, 226-231 (2003).

13. C. R. Clayton, **D. Chidambaram**, D. F. Roeper, and G. P. Halada, Towards the development of environmentally-friendly corrosion resistant coatings for depleted uranium-0.75 wt% titanium alloy, in *Critical Factors in Localized Corrosion IV: A Symposium in Honor of the 65th Birthday of Hans Bobni*; 202nd Meeting of The Electrochemical Society-, S. Virtanen, P. Schmuki and G. S. Frankel, Eds., The Electrochemical Society, Pennington, NJ., **PV2002-24**, 572 (2003).

12. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, Effect of Surface Pretreatments on Chromate Conversion Coatings, in *State-of-the-Art Application of Surface and Interface Analysis Methods to Environmental Material Interactions*, 199th Meeting of the Electrochemical Society, D. R. Baer, C. R. Clayton, G. P. Halada and G. D. Davis, Eds., The Electrochemical Society, Pennington, NJ., **PV2001-5**, 282-291 (2002).

11. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, Studies on the Repassivation Behavior of Aluminum Exposed to Dichromate Solution, in *State-of-the-Art Application of Surface and Interface Analysis Methods to Environmental Material Interactions: 199th Meeting of the Electrochemical Society*, D. R. Baer, C. R. Clayton, G. P. Halada and G. D. Davis, Eds., The Electrochemical Society, Pennington, NJ., **PV2001-5**, 240-249 (2002).
10. **D. Chidambaram**, G. P. Halada and C. R. Clayton, Development of a technique to prevent radiation damage of chromate conversion coatings during X-ray photoelectron spectroscopic analysis, *Applied Surface Science*, **181** (3-4), 183-195 (2001).
9. **D. Chidambaram** and G. P. Halada, Infrared microspectroscopic studies on the pitting of AA2024-T3 induced by acetone degreasing, *Surface and Interface Analysis*, **31** (11), 1056-1059 (2001).
8. **D. Chidambaram**, G. P. Halada and C. R. Clayton, On the electrochemical behavior of dichromate and molybdate treated intermetallic particles present in AA2024-T3, in *Corrosion and Corrosion Prevention of Low Density Metals and Alloys*, 198th Meeting of the Electrochemical Society, B.A. Shaw and R.G. Buchheit, Eds., The Electrochemical Society, Pennington, NJ, **PV2000-23**, 101-110 (2001).
7. S. V. Kagwade, C. R Clayton, **D. Chidambaram**, and G. P. Halada, Photochemical breakdown of acetone on copper, *Electrochimica Acta*, **46** (15), 2337-2342 (2001).
6. S. V. Kagwade, C. R Clayton, **D. Chidambaram**, F. P. Chiang and Y. Lu, The influence of acetone degreasing on the corrosion behavior of AA2024-T3, *Journal of the Electrochemical Society*, **147** (11), 4125-4130 (2000).
5. C. R Clayton, G. P Halada, , M. J. Vasquez, J. R. Kearns and **D. Chidambaram**, Hydrophobicity and structural stability during aging of chromate conversion coatings on al alloys, in *Passivity and Localized Corrosion: 196th Meeting of the Electrochemical Society*, Eds., M. Seo, B. MacDougall, H. Takahashi and R.G. Kelly, **PV99-27** Electrochem. Soc. Pennington NJ (2000) p290.
4. C. R Clayton, G. P Halada, **D. Chidambaram**, M. J. Vasquez and J. R. Kearns, On the bipolar mechanism for chromate-induced repassivation of active sites on chromate conversion coated aluminum alloys, in *Passivity and Localized Corrosion: 196th Meeting of the Electrochemical Society*, Eds., M. Seo, B. MacDougall, H. Takahashi and R.G. Kelly, **PV99-27** The Electrochemical Society, Pennington, NJ, (2000) p249.
3. **D. Chidambaram**, N. Sharma, S. Natarajan and C. N. R. Rao, Open-framework zinc phosphates synthesized in the presence of structure-directing organic amines, *Journal of Solid State Chemistry*, **147** (1), 154-169 (1999).
2. **D. Chidambaram** and S. Natarajan, Synthesis and structure of a new open-framework zinc phosphate: $Zn_{-3}(PO_4)_2(HPO_4)(0.5) (-)0.5 (NH_3(CH_2)_2(NH_3))_2 + H_2O$, *Materials Research Bulletin* **33** (8), 1275-1281 (1998).
1. **D. Chidambaram**, P. V. Karthik, L. J. Berchmans and V. Kapali, Evaluation of SS 316 as the container and current collector in EDL/super/ultra capacitors, *Corrosion and its Control, Proceedings of the International Conference on Corrosion (NACE)*, **2**, 1013-1022 (1998).

EDITED ARTICLES

4. D Chidambaram, G.P. Halada and C.R. Clayton, "Grazing Angle Infrared Spectroscopy of Chromate Conversion Coatings" *National Synchrotron Light Source Annual Report 2002*, Mary Anne Corwin (Managing Editor), BNL, Brookhaven Science Associates, Inc. (2002).
3. D. Chidambaram, C. R. Clayton, G. P. Halada, "On the Formation of Cr(VI)-rich Chromate Conversion Coatings in Mechanically Damaged Areas on AA2024-T3", *National Synchrotron Light Source Annual Report 2002*, Mary Anne Corwin (Managing Editor), BNL, Brookhaven Science Associates, Inc. (2002).
2. D. Chidambaram, C.R. Clayton, G.P. Halada, "Effect of Surface Pretreatments On Chromate Conversion Coatings", *National Synchrotron Light Source Annual Report 2001*, Mary Anne Corwin (Managing Editor), BNL, Brookhaven Science Associates, Inc. (2001).
1. D. Chidambaram, C.R. Clayton and G.P. Halada, "SIRMS Studies on the Repassivation of Aluminum Exposed to Dichromate Solution", *National Synchrotron Light Source Annual Report 2000*, Mary Anne Corwin (Managing Editor), BNL, Brookhaven Science Associates, Inc. (2000).

ABSTRACTS AND SCHOLARLY PRESENTATIONS

Invited talks are in bold

47. J. Grant and **D. Chidambaram**, "Corrosion Behavior of High Level Waste (HLW) Storage Tank Materials", Abstract No. 2218 in D3 - Corrosion, Passivity, and Energy: A Symposium in Honor of Digby Macdonald Session of the 222nd Meeting of the Electrochemical Society, Honolulu, Hawaii, October 7-12 (2012). **Upcoming.**
46. A. Merwin, and **D. Chidambaram**, "Evaluation of Electrode Materials for Electrolytic Reduction of Nuclear Fuels", Abstract No. 2322 in D5 - High Temperature Corrosion Materials Chemistry 10 Session of the 222nd Meeting of the Electrochemical Society, Honolulu, Hawaii, October 7-12 (2012). **Upcoming.**
45. D. Rodriguez, R. Misra, and **D. Chidambaram**, "Self-Healing Nature of Molybdate Conversion Coatings for Aluminum Alloys", Abstract No. 2351 in D6 - Light Alloys 4 Session of the 222nd Meeting of the Electrochemical Society, Honolulu, Hawaii, October 7-12 (2012). **Upcoming.**
44. **D. Chidambaram**, "**Microbial Electrochemistry for Water Treatment**", Abstract No. 83, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10, 2012 – **Invited (2012).**
43. D. D. Bala and **D. Chidambaram**, "Anaerobic Microbial Corrosion of Steel", Abstract No. 652, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).
42. D. Rodriguez and **D. Chidambaram**, "Molybdenum Based Conversion Coatings for Aerospace Aluminum Alloys", Abstract No. 674, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).

41. J. T. Hastings and **D. Chidambaram**, "Enhanced Fermentation in an Electrochemical Reactor", Abstract No. 1447, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).
40. D. D. Bala and **D. Chidambaram**, "Microbial Corrosion of Steel", Abstract No. 68, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).
39. D. Rodriguez and **D. Chidambaram**, "Development of Corrosion Protective Coatings for Aluminum Alloys", Abstract No. 62, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).
38. J. T. Hastings and **D. Chidambaram**, "Bioelectrochemical Degradation of Acid Orange 7", Abstract No. 60, 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).
37. Palmer, M. E.; Hastings, J. T.; Fitts, J.; **Chidambaram, D.**; "Nanotechnology and Microbial Electrochemistry for Environmental Remediation", 218th Meeting of the Electrochemical Society Conference, Las Vegas, NV. Oct, 2010. (2010)
36. **D. Chidambaram**, "Environmental Applications of Microbial Electron Transfer", **Environmental Engineering Seminar Series, EE Department, UNR. November, 2010. Invited. (2010).**
35. Y. Liu, **D. Chidambaram**, L. Collazo, R. Grella, I. Anyene, W. Genova, L. Herrera, M. Rafailovich, "Functional polymer hydrogels for water purification applications", Nanotech Conference & Expo 2010; An Interdisciplinary Integrative Forum on Nanotechnology, Biotechnology and Microtechnology, Anaheim, CA June 21-24, 3, 520-523 (2010).
34. **D. Chidambaram**, J. P. Fitts, T. Hennebel, N. Boon, W. Verstraete, and D. Van der Lelie, 'In situ formation of nanoparticles as an effective biocatalyst for environmental remediation', 238th ACS National Meeting, Washington, DC, August 16-20 (2009).
33. **D. Chidambaram**, J. P. Fitts, T. Hennebel, S. Taghavi and D. van der Lelie, '**Palladium(0) Nanoparticle Formation by Clostridium sp. BC1 Provides Effective Biocatalyst for Hexavalent Chromium Remediation**', *10th International Conference on the Biogeochemistry of Trace Elements*, Chihuahua, Mexico, July 13-16 (2009).
32. Y. Liu, M. H. Rafailovich, R. Malal, D. Cohn and **D. Chidambaram**, '**Bio-active Polymer Fibers for Environmental Remediation**', Symposium BB: Polymer-Based Smart Materials-Process, Properties, and Application; *Materials Research Society (MRS), Fall Meeting*, Boston, MA, December 1 – 5 (2008).
31. **D. Chidambaram**, '**Extracellular bioreduction: A technology for contamination removal and reclamation**', *The 236th Meeting of the American Chemical Society*, Philadelphia, PA, August 17-21 (2008).
30. **D. Chidambaram**, Y. Liu, R. Malal, D. Cohn, and M. Rafailovich, '**Bioactive polymer fibers for environmental remediation**', Paper 648 in *Polymers for Remediation and the Environment*, Division of Polymer Chemistry; *The 235th Meeting of the American Chemical Society*, New Orleans, LA, April 10 (2008).

29. **D. Chidambaram** and A. J. Francis, 'Extracellular reduction of hexavalent uranium by *Clostridium* Sp.' Abstract NUCL 106 in Understanding Radionuclide Transport in the Environment: Remediation, Nuclear Waste Disposal, and Long-term Stewardship; The 233rd Meeting of the American Chemical Society, Chicago, IL, March 28 (2007).
28. **D. Chidambaram**, Hans-Jürgen Engell Prize Keynote Lecture , 'Application of Surface Analytical Methods to the Development of Environmentally Friendly Coatings' in Session S9: Corrosion Inhibiting Coatings; 57th Annual Meeting of the International Society of Electrochemistry, Edinburgh, Scotland, Sept 1st (2006). Abstract no: S9-KN-6.
27. A.J. Francis, A.C. Matin, W. Gao, **D. Chidambaram**, Y. Barak, C.J. Dodge, 'Molecular Mechanisms of Uranium Reduction by Clostridia', *Environmental Remediation Sciences Program (ERSP) Annual Meeting*, Warrenton, VA April 3-5 (2006).
26. Smirnov, A., Schoonen, M.A.A., Tosca, N.J., **Chidambaram, D.**, Halada, G. & Luptak, B., 'Abiotic formation and fate of ammonium in the Hadean Ocean', Proceedings of NASA, Astrobiology Institute General Meeting, Moffett Field, CA Astrobiology, 5, 2, 277, (2005)
25. **D. Chidambaram**, Morris Cohen Award Address, 'Surface Chemistry and Corrosion Behavior of Aluminum-Copper Systems: Air Formed Films to Complex Conversion Coatings' in Corrosion Division Awards Session, E4 - Corrosion and Electrochemistry of Advanced Materials; 208th Meeting of The Electrochemical Society, Los Angeles, CA, October 18th (2005). Abstract no. 347.
24. A. Smirnov, N. J. Tosca, **D. Chidambaram**, G. P. Halada and M. A. A. Schoonen, 'Ni-(Fe) alloy and sulfide formation during forsterite-fayalite dissolution at hydrothermal conditions: Importance for prebiotic synthesis' Abstract GEOC 29 in Astrobiology and the Origin of Life; *The 228th ACS National Meeting*, in Philadelphia, PA, August 23rd (2004).
23. A. Smirnov, N. J. Tosca, **D. Chidambaram**, G. P. Halada and M. A. A. Schoonen, 'The fate of nickel during olivine dissolution at hydrothermal conditions: Implications for prebiotic synthesis' in Prebiotic Chemistry and the Origin of Life', 3rd Astrobiology Science Conference 2004, NASA, Ames, Mar 28th – Apr 1st (2004).
22. D. Demaree, C. R. Clayton, **D. Chidambaram**, D. F. Roeper, and G. P. Halada, 'Corrosion Protective Coatings for DU Penetrators' in Inorganic Coatings-I; Tri-Service Corrosion Conference, Las Vegas, NV, Nov 18th (2003)
21. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'The Mechanism of Protection of Mechanical Damages to Chromate Conversion Coatings Formed on Aluminum Alloys', in Applied Surface Science AS11: Practical Surface Science; 50th International Symposium of the American Vacuum Society, Baltimore, Nov 5th (2003). Abstract 807.
20. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'The Role of Hexafluorozirconate in the Formation of Chromate Conversion Coatings on Aluminum Alloys' in Applied Surface Science AS11: Practical Surface Science; 50th International Symposium of the American Vacuum Society, Baltimore, Nov 5th (2003). Abstract 1541.
19. D.F. Roeper, **D. Chidambaram**, C.R. Clayton, and G.P. Halada, 'Formation of Protective Coatings on Depleted Uranium - 0.75 wt% Titanium Alloy' in Applied Surface Science

- AS11: Practical Surface Science; 50th *International Symposium of the American Vacuum Society*, Baltimore, Nov 5th (2003). Abstract 1301.
18. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'The Role of Fluoride Compounds in the Formation of Chromate Conversion Coatings on Aluminum Alloys' in D3 – Corrosion and Protection of Light Metal Alloys; *204th Meeting of The Electrochemical Society*, Orlando, Florida, October 14th (2003).
 17. **D. Chidambaram**, Invited speaker, 'Applications of Spectroscopy to Corrosion and Coatings' The meeting of the Society for Applied Spectroscopy – New York, Dobbs Ferry, NY, Sept 17th, 2003 (Invited)
 16. C.R. Clayton, D.F. Roeper, **D. Chidambaram**, and G.P. Halada, 'Studies on the Formation of Molybdate-Based Coatings on Depleted Uranium-0.75 wt% Titanium Alloy' in D2 - Passivity and Surface Structures for Corrosion Protection; *203rd Meeting of The Electrochemical Society*, Paris, April 30th, Abstract 318 (2003).
 15. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Novel Synchrotron-based Spectroscopic Investigations on the Chromate Conversion Coatings Formed on AA2024-T3' in D2 - Passivity and Surface Structures for Corrosion Protection; *203rd Meeting of The Electrochemical Society*, Paris, April 30th, Abstract 312 (2003).
 14. C. R. Clayton, **D. Chidambaram**, D. F. Roeper, and G. P. Halada, 'Towards the development of environmentally-friendly corrosion resistant coatings for depleted uranium-0.75 wt% titanium alloy' in Critical Factors in Localized Corrosion IV: A Symposium in Honor of the 65th Birthday of Hans Bohni; *202nd Meeting of The Electrochemical Society*, Salt Lake City, Utah, Abstract 314 (2002).
 13. C. R. Clayton, **D. Chidambaram**, D. F. Roeper, and G. P. Halada, in *U.S. Army Industrial Ecology Information Exchange Meeting*, Lake Harmony, PA, June 25-27 (2002).
 12. **D. Chidambaram**, 'Applications of Spectroscopy to Corrosion and Coatings' in Infrared Users Workshop - National Synchrotron Light Source, Brookhaven National Laboratory, 2001. (Invited)
 11. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Studies on the Repassivation Behavior of Aluminum Exposed to Dichromate Solution' in State-of-the-Art Application of Surface and Interface Analysis Methods to Environmental Material Interactions: *199th Meeting of the Electrochemical Society*, Washington D. C., Abstract 173 (2001).
 10. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'Effect of Surface Pretreatments on Chromate Conversion Coatings' in State-of-the-Art Application of Surface and Interface Analysis Methods to Environmental Material Interactions: *199th Meeting of the Electrochemical Society*, Washington D. C., Abstract 167 (2001).
 9. **D. Chidambaram**, C. R. Clayton, and G. P. Halada, 'On the electrochemical behavior of dichromate and molybdate treated intermetallic particles present in AA2024-T3' in *198th Meeting of The Electrochemical Society*, Phoenix, Abstract 282 (2000).
 8. **D. Chidambaram**, M. J. Vasquez, C. R. Clayton, and G. P. Halada, 'Study of the Electrochemical Behavior of Intermetallic Particles in AA2024-T3' in *197th Meeting of The Electrochemical Society*, Toronto, Abstract 212 (2000).

7. J. D. Demaree, W. E. Kosik, C. R. Clayton, G. P. Halada, and **D. Chidambaram**, 'Passivation Mechanisms of Ion Beam Deposited Cr-Mo Nitride Coatings' in *MRS Spring Meeting*, San Francisco, Abstract H4.2 (2000).
6. G. P. Halada, C. R. Clayton, M. J. Vasquez, J. R. Kearns, **D. Chidambaram**, and R. D. Granata, 'Heterogeneity in Commercial Coating Systems for Aerospace Applications' in *196th Meeting of the Electrochemical Society.*, Hawaii, Abstract 615 (1999).
5. C. R. Clayton, G. P. Halada, **D. Chidambaram**, M. J. Vasquez, and J. R. Kearns, 'On the bipolar mechanism for chromate-induced repassivation of active sites on chromate conversion coated aluminum alloys' in *196th Meeting of the Electrochemical Society*, Abstract 531 (1999).
4. C. R. Clayton, G. P. Halada, M. J. Vasquez, **D. Chidambaram**, and J. R. Kearns, 'Hydrophobicity and structural stability during aging of chromate conversion coatings on al alloys' in *196th Meeting of the Electrochemical Society*, Abstract 512 (1999).
3. **D. Chidambaram**, S. Natarajan, and C. N.R. Rao, "Hydrothermal synthesis of phosphate frameworks" in the 9th Annual General Meeting of the Materials Research Society of India (MRSI), Madras, India, February 12th (1998).
2. **D. Chidambaram**, S. Natarajan, and C. N. R. Rao, "Synthesis and Structure of Open-Framework Materials" in Annual Meeting of the Indian Academy of Sciences Conference, Bangalore, India (1998).
1. **D. Chidambaram**, P. V. Karthik, L. J. Berchmans and V. Kapali, "Evaluation of SS 316 as the container and current collector in EDL/super/ultra capacitors" in the Symposium on Corrosion and its Control, International Conference on Corrosion CORCON-97, National Association of Corrosion Engineers (NACE), Bombay, India, Dec 5th (1997).

SYMPOSIUMS ORGANIZED

Symposium titled 'Oxides: Surface and Interface Analysis Methods to Environmental Material Interactions-II' at the 224th Meeting of the Electrochemical Society, Oct 27th – Nov 1st, San Francisco, (2013). **Upcoming.**

Organizing National Committee Member '12th International Conference on Biogeochemistry of Trace Elements (ICOBTE) organized by the International Society of Trace Element Biogeochemistry (ISTEB), Atlanta, Georgia, June 16-20 (2013). **Upcoming.**

Co-chair for symposium titled 'Corrosion for Energy Industry' in the D1 - Corrosion General Session, at the 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).

Symposium titled '*Advances in remediation technologies for trace elements contaminated sites*' at the 10th International Conference on Biogeochemistry of Trace Elements (ICOBTE) organized by the International Society of Trace Element Biogeochemistry (ISTEB), Chihuahua, Mexico, July 13th-16th (2009). Co-organizers: **D. Chidambaram**, G. Pierzynski and P. Holm

Symposium titled '*Research Related to the Environmental Management Mission of the Department of Energy*', under the auspices of the Division of Nuclear Chemistry & Technology at the 236th Meeting of the American Chemical Society (ACS), Philadelphia, PA, August 17-21 (2008). Co-organizers: G.P. Halada, S.B. Clark, J.B. Gillow and **D. Chidambaram**

SYNERGISTIC ACTIVITIES – NATIONAL AND INTERNATIONAL SERVICE

PROPOSAL REVIEWS

Reviewer for National Science Foundation (NSF) ‘Chemical Biological and Environmental technology’ program, (2012)

Reviewer for Department of Energy (DOE) SCGF Program, (2012)

Reviewer for Nuclear Regulatory Commission (NRC) Grants, (2011)

Reviewer for National Science Foundation (NSF) ‘Materials and Surface Engineering’ program, (2010)

Reviewer for Nuclear Regulatory Commission (NRC) Grants, (2010)

Reviewer for Estonian Science Foundations, (2010)

SYMPOSIUM ORGANIZER AND ABSTRACT REVIEWS

Symposium titled ‘Oxides: Surface and Interface Analysis Methods to Environmental Material Interactions-II’ at the 224th Meeting of the Electrochemical Society, Oct 27th – Nov 1st, San Francisco, (2013). **Upcoming.**

Organizing National Committee Member ‘12th International Conference on Biogeochemistry of Trace Elements (ICOBTE) organized by the International Society of Trace Element Biogeochemistry (ISTEB), Atlanta, Georgia, June 16-20 (2013). **Upcoming.**

Co-chair for symposium titled ‘Corrosion for Energy Industry’ as part of the D1 - Corrosion General Session, at the 221st Meeting of the Electrochemical Society, Seattle, WA, May 6-10 (2012).

Symposium titled ‘*Advances in remediation technologies for trace elements contaminated sites*’ at the 10th International Conference on Biogeochemistry of Trace Elements (ICOBTE) organized by the International Society of Trace Element Biogeochemistry (ISTEB), Chihuahua, Mexico, July 13th-16th (2009). Co-organizers: **D. Chidambaram**, G. Pierzynski and P. Holm. **Reviewed 145 abstracts.**

Symposium titled ‘*Research Related to the Environmental Management Mission of the Department of Energy*’, under the auspices of the Division of Nuclear Chemistry & Technology at the 236th Meeting of the American Chemical Society (ACS), Philadelphia, PA, August 17-21 (2008). Co-organizers: G.P. Halada, S.B. Clark, J.B. Gillow and **D. Chidambaram**. **Reviewed 30 abstracts.**

JOURNAL REVIEWING

Editorial Board of the 'Journal of Bioprocessing and Biotechniques (Invited)

- Journal of The Electrochemical Society
- Electrochimica Acta
- Electrochemical and Solid State Letters
- Journal of Applied Electrochemistry
- Advanced Functional Materials
- Materials Science and Engineering A: Structural Materials: Properties, Microstructure and Processing
- Corrosion
- Science Surface and Interface Analysis
- Macromolecular Chemistry and Physics
- Macromolecular Bioscience
- Environmental Progress & Sustainable Energy
- Environmental Science and Technology
- Enzyme and Microbial Technology
- Microbial Biotechnology
- Bioremediation Journal
- Bioresource Technology
- Thin Solid Films
- Surface and Coatings Technology
- Journal of Vacuum Science and Technology
- Vacuum
- Journal of Electron Spectroscopy and Related Phenomena

SYNERGISTIC ACTIVITIES – UNIVERSITY SERVICE

- UNR's Student Retention Committee member (2011-Date)
 - UNR Nuclear Regulatory Commission Fellowship Program Co-Chair.
 - UNR's Engineering Representative for Washoe County School District Science Technology Engineering and Mathematics (STEM) grant (2010-2015).
 - College of Engineering Differential Fees Committee – Graduate Program Directors Representative (2011-Date)
 - College of Engineering Renewable Energy Certificate Program Faculty Member
 - College of Engineering Computing Manager Position Search (2011)
 - College of Engineering undergraduate student advisor
 - College of Engineering Student Thesis and Dissertation Committees
-
- Graduate Program Director – Materials Science and Engineering Program (2011-Date)
-
- CME Department Faculty in Materials Science and Engineering Position Committee (2011-Date)
 - CME Department Student Scholarships Coordinator (2010-Date)

- CME Course and Curriculum Committee member (2011-Date)
- CME Department representative for Materials Engineering Program for ENGR 100 (2009-Date)
- CME Department Freshman Meeting orientation – MSE Program representative
- CME Department Coordinator for Graduate Brochures and Cards for MSE Program
- CME Department representative for Nevada Bound High School program (2009-2010, Ad-Hoc since 2011).
- Mentor, NSF AGEP program at SUNY, Stony Brook (2005-2008)

PROFESSIONAL MEMBERSHIPS

American Chemical Society (2005-Date)
 International Society for Trace Element Biogeochemistry (2009-Date)
 Elected member of the Sigma Xi Society (2003-Date)
 American Vacuum Society (2003-Date)
 Society for Applied Spectroscopy (2003-date)
 International Society for Electrochemistry (2001-Date)
 Institute of Metal Finishing (2001-Date)
 International XAFS Society (IXS) (2001-Date)
 The Electrochemical Society (1996-Date)

TEACHING EXPERIENCE

At the Department of Chemical and Materials Engineering, University of Nevada Reno, Reno, NV

Fall 2012

MSE 232 – Principles of Metallurgical Engineering
 MSE 791– Special Topics in Nuclear Corrosion
 CHE 232 – Principles of Chemical Engineering

Spring 2012

MSE 401/601 – Corrosion
 MSE 472 – Introduction to Ceramics
 MSE 711 – Corrosion
 MSE 738 – Advanced Ceramics

MSE 799 – Dissertation Research: Microbial Electrochemistry

MSE 797 – Thesis Research: Corrosion

Fall 2011

MSE 232 – Principles of Metallurgical Engineering

MSE 791– Special Topics in Biofuels

CHE 232 – Principles of Chemical Engineering

Summer 2011:

MSE 797 – Thesis Research: Biodiesel Production

Spring 2011

CHE 495/695 – Special Problems in Electrochemical Engineering

MSE 496/695 – Special Problems in Electrochemical Engineering

Fall 2010

MSE 232 – Principles of Metallurgical Engineering

MSE 799 – Dissertation Research: Nuclear Materials

MSE 791– Special Topics in Remediation of Organics

CHE 232 – Principles of Chemical Engineering

Summer 2010:

MSE 791– Special Topics in Metal Hydrides

MSE 797 – Thesis Research: Nanobiocatalytic Remediation

MSE 799 – Dissertation Research: Nuclear Materials

Spring 2010

MSE 738 – Advanced Ceramics

MSE 472 – Introduction to Ceramics

At the Department of Materials Science and Engineering, SUNY at Stony Brook, NY

ESM 699 – Dissertation Research

ESG 201 – Engineering Responses to Society

ESM 698 – Practicum in Teaching

Instructor for WSE 197 - Women in the Laboratory: An Introduction to Science, Engineering,
and Mathematics Research

Fall 1998-Fall 2002 Teaching Assistant for Engineering Science Classes

MENTORING ACTIVITIES

Graduate Students:

Graduate Student Advisees – graduated:

No.	Student Name	Degree	Graduated in
1	Jason Hastings	M.S. in Materials Sc & Eng	Dec 2010
2	Dharshini D. Bala	M.S. in Materials Sc & Eng	Dec 2011
3	David Rodriguez	M.S. in Materials Sc & Eng	May 2012
4	Jason Hastings	Ph. D. in Materials Sc & Eng	Aug 2012
5	John Grant	M. S. in Materials Sc & Eng	Aug 2012

Graduate Student Advisees – currently under advisement:

No.	Student Name	Degree	Expected Graduation
1	Jason Hastings	Ph. D. in Materials Sc & Eng	Aug 2012
2	Kimberley DeSouza	M.S. in Materials Sc & Eng	Dec 2012
3	Augustus Merwin	M.S. in Materials Sc & Eng	Dec 2013
4	Dharshini D. Bala	Ph. D. in Materials Sc & Eng	Dec 2013
5	David Rodriguez	Ph. D. in Materials Sc & Eng	Dec 2014
6	John Grant	Ph. D. in Materials Sc & Eng	2015
7	Augustus Merwin	Ph. D. in Materials Sc & Eng	2015
8	Sanjeev Rayaprolu	Ph. D. in Materials Sc & Eng	2016
9	Akira Nordmeier	Ph. D. in Materials Sc & Eng	2016
10	Zachary Karmiol	Ph. D. in Materials Sc & Eng	2016

Graduate Committees:

No.	Student Name	Degree	Graduation
1	Winn Wilson	M. S. in Environmental Eng	Dec 2011

2	John Aklerly	M. S. Mechanical Engineering	Aug 2012
3.	Anupam Kumar	Ph. D. in Materials Sc & Eng	Dec 2012
4	Katie Bowden	M. S. in Environmental Eng	Dec 2012
5	Michael Dillon	Ph.D. in Cellular and Molecular Biology	2015
6	Nelum M Karunathilake	Ph.D. in Chemistry	2015
7	Andrew Pohlman	Ph.D. in Chemistry	2015

Graduate Student Mentoring:

No.	Student Name	Student Type	Year
1.	Tom Hennebel	Graduate summer intern	2008
2.	Kathryn Bailey	Graduate summer intern	2007, 2008
3	Wesley Francillon	Graduate student mentee	2002-2005
4	Donald Roeper	Graduated with Ph.D.	2003-2006

Undergraduate Student Research Mentoring:

No.	Student Name	Student Type/Major	Year
1.	Targe Loyd	BS in Materials Sc & Eng	2011-Date
2.	Jason Greiser	BS in Materials Sc & Eng	2011-Date
3	Daniel Trobrare	Native-American undergraduate summer intern	2009
4	Timothy Mixson	Native-American undergraduate summer intern	2009
5	Ashley Johnson	Community college undergraduate summer intern	2009
6	Giorvanni Merilis	Community college undergraduate summer intern	2009
7	Kojo Wallace	Community college undergraduate summer intern	2008
8	Patrycja Chodnicka	undergraduate summer intern	2008
9	Mike Ciuffo	BS in Engineering Science	2002-2003

