

Lindsey R. Goodman

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Objective: To obtain a full-time position in corrosion analysis, surface/metallurgical analysis, materials failure analysis, or other related work

Education

Georgia Institute of Technology, Atlanta, GA

PhD in Materials Science, Expected August 2012

GPA 3.33/4.0

Specializations: Metallurgy, Corrosion

Thesis Title: THE EFFECTS OF FUEL GRADE ETHANOL CHEMISTRY ON THE MECHANISM OF STRESS CORROSION CRACKING OF X65 PIPELINE STEEL

Binghamton University (State University of New York, Binghamton)

Bachelor of Science in Applied Physics, 2006

GPA 3.65/4.0

Minors: French

La Sorbonne Paris IV, Paris, FR(Semester Abroad)

Certificate of French Language and Literature, Niveau Supérieur II, 2004

Graduate Research and Employment Experience

Georgia Institute of Technology, Atlanta, GA

PhD Candidate, Graduate Research Assistant in the Corrosion and Materials Chemistry Laboratory

Fall 2007- Present

- Characterizing the chemical composition of bioethanol distilled using various processes and feedstocks via GC-MS, pH measurements and Karl Fischer titration
- Adapting aqueous electrochemical techniques to non-aqueous environments to determine SCC limiting potentials and corrosion rates of low-alloy carbon steel in ethanol-based solutions
- Performing SEM, XPS, AFM and other metallurgical and surface characterization techniques to analyze composition and morphology of corrosion products of pipeline steel in bioethanol
- Determining the effects of chemical constituents in bioethanol on the threshold stresses of stress corrosion cracking of pipeline steel via SSRT, cyclic fatigue testing, and electrochemical/mechanical scratch testing

Shell International Exploration and Production Co, Houston, TX

Summer Intern, May 2008 -August 2008

- Designed cathodic protection (sacrificial anode) for subsea gaslift flowline and riser
- Performed a risk-based evaluation of intelligent pigging of subsea pipelines

Argonne National Laboratory, Lemont, IL

Science Undergraduate Learning Internship, Fall 2006-Summer 2007

- Helped design and build a pump loop for testing Ultrananocrystalline Diamond™-coated pump seals
- Built a SO₂ scrubber for a hydrogen sulfide-to-hydrogen conversion system
- Worked on recovery of metals from auto shredder residue using a froth-flotation process

Binghamton University Computing Services Senior Helpdesk Consultant, Spring 2004- Spring 2006

Binghamton University Computing Services Residential Computing Consultant, Fall 2002-Spring 2003

Undergraduate Research

University of Maryland, College Park, MD

Training and Research Experience in Nonlinear Dynamics Program for Undergraduates, Summer 2005

Stony Brook University, Stony Brook, NY

Mineral Physics Institute Summer Scholars Research Experience for Undergraduates Program, Summer 2004

Teaching Experience

Georgia Institute of Technology, Atlanta, GA

NSF Science Learning: Integrating Design, Engineering, and Robotics (SLIDER) Program Fellow for the Center for Enhancement of Teaching and Learning (CETL), May 2010- Present

- Designing inquiry-based learning curriculum targeted for 8th grade physical science students, employing Lego Mindstorm robotics kits as innovative classroom education tools
- Mentoring 8th grade physical science teachers on implementation of experimental SLIDER science curriculum
- Observing 8th grade students' interactions with the SLIDER curriculum to evaluate curriculum effectiveness

Center for Academic Excellence, Binghamton University, Binghamton, NY

Undergraduate Physics Tutor, Fall 2005-Spring 2006

Physics Department, Binghamton University, Binghamton, NY

Undergraduate Physics Lab Instructor, Spring 2004- Fall 2004

Technical Publications

L.R. Goodman, P.M. Singh, *Investigation of passivation characteristics of X65 pipeline steel in ethanol fuel environments*, NACE Corrosion Conference and Expo, Houston, TX 2011

L.R. Goodman, P. M. Singh, *Effects of Ethanol Chemistry on the Stress Corrosion Cracking and Passivation Characteristics of X65 Pipeline Steel in Ethanol Fuel Environments*, MS&T 2010, Houston, TX, 2010.

L. Goodman, X. Lou, P.M. Singh, *Investigation of the Stress Corrosion Cracking of Carbon Steel in Fuel Grade Ethanol Environments*, TMS 2010 139th Annual Meeting and Exhibition, Seattle, WA, 2010.

Technical Skills

SEM, EDS, XPS, aqueous and non-aqueous electrochemistry (potentiostatic and potentiodynamic polarization, impedance spectroscopy, galvanostatic, cyclic voltammetry), SSRT, metallography (polishing, etching, Bakelite mounting, heat treating, grain size analysis), mechanical testing (slow strain rate, cyclic fatigue), optical microscopy, confocal microscopy, GC-MS, general chemical analysis (water content, pH, titrations), experience with Class 100 clean room procedures, strong oral presentation and communication skills, Microsoft Office, Origin graphical software, Adobe Acrobat and Illustrator, Gamry Echem Analyst software. Familiarity with Matlab, Unix, Labview, GPIB programming interface, Mathematica. Familiarity with Java, C++

Educational Outreach

Chair of the American Society of Materials Georgia High school Outreach for Science and Technology (GHOST) high school science fair outreach program (Fall 2010- Spring 2011), Science Olympiad coach at East Cobb Middle School (Fall 2011-present)

Foreign Languages

Fluent in French (reading and writing), proficient in French (speaking)

Honors& Awards

2nd place in the American Society of Materials (ASM International) Atlanta chapter annual MSE poster competition (Spr 2011), Georgia Tech Research and Innovation Conference (GTRIC) travel grant award recipient for outstanding poster presentation 2011, Recipient of NSF SLIDER fellowship 2010-2012, Recipient of the ASM Graduate Student of the Year Award 2009, Georgia Tech Paper Science and Engineering Fellowship recipient (Fall 2007-present), Recipient of Boeing Graduate Fellowship, (Fall 2007-Spr 2009)

Societies

NACE, Material Advantage (ASM, TMS, AIST, AcERS)

Activities

Treasurer of GT Materials Advantage chapter (2009-2011), President of GT Materials Advantage chapter (2008-2009), Chairperson of GT MSE Women's group (2009-2011), Vice chair of GT MSE Women's group (2008-2009), GT Salsa Performance Team (2008-2010), Student Coordinator of ASM Materials Camp (Summer 2009), Member of the MSE Faculty Selection Committee (2007-2008)