

JOHN T. REYE

Georgia Institute of Technology
 School of Chemical and Biomolecular Engineering
 Ford Environmental Science and Technology Building
 311 Ferst Drive, N.W.
 Atlanta, Georgia 30332-0100

IPST Phone: (404) 894-7842
 IPST Fax: (404) 894-4778
 IPST Email: jreye@ipst.gatech.edu
 Cell Phone: (480) 606-8976

EDUCATION

Georgia Institute of Technology - School of Chemical and Biomolecular Engineering - Institute of Paper Science and Technology, Atlanta, Georgia

Doctor of Philosophy in Chemical and Biomolecular Engineering, Fall 2009

Doctoral Dissertation – “Enhanced Enzymatic Hydrolysis of Cellulytic Fibers via Complexation with Cationic Polymers”

Advisor: Dr. Sujit Banerjee

- Research on enhancement of enzyme and substrate interaction through complexing with cationic polymers
- Research on enzymatic treatment of biomass for bioethanol production
- Research on to increasing membrane permeability of bacteria for whole cell biocatalysis
- Minor course of studies in both Biology and Paper Science Engineering
- Overall G.P.A. 4.00

Cleveland State University - Department of Chemical Engineering, Cleveland, Ohio

Master of Science in Chemical and Biomedical Engineering, December 2003

Master's Thesis - "Generating Protective Conversion Coatings by Chemical Vapor Deposition Method"

- Ohio Space Grant Consortium Fellowship Award Winner (2000-2002)
- Overall G.P.A. 3.77

Bachelor of Science in Chemical Engineering, Cum Laude, May 2000

- Fall Senior Design Group Project - Oxygen Production Through Ionic Transport Membrane Technology
- Spring Senior Design Group Project – Fuel Grade Ethanol Plant Proposal
- Overall G.P.A. 3.58, ChE G.P.A. 3.84

JOB EXPERIENCES

Georgia Institute of Technology, Atlanta, Georgia

School of Chemical and Biomolecular Engineering, pre-doctoral candidate, 08/04-present

- Studies pertaining to enzyme-polyelectrolyte interactions with soluble and insoluble substrates
- Degradation of organophosphate pesticide, coumaphos, using organophosphorus hydrolase (OPH) using genetically modified E. coli mutant
- Teaching Assistant for Unit Operations laboratory, responsible for Glucose Isomerization, Fluidized Bed, and Enzyme Reactor laboratories

Soundwich Inc., Cleveland, Ohio

Research and Development Engineering Consultant, 10/02 – 07/04

- Troubleshooting of polymer plant processes used to make sound dampening polymer materials
- Assisted in development of a ceramic automotive exhaust manifold testing experimental ceramics
- Assisted in product and process development of polypropylene based construction materials for Keene Building Products
- Assisted in the research, development, and building of production process for acoustic dampening and thermal barrier for the automotive industry (Acousta-Therm™)

Cleveland State University, Cleveland, Ohio**Chemical and Biomedical Engineering Department, Graduate Student, 08/00 – 12/03**

- Teaching and research assistant for General Chemistry II and trained students on various thermal analysis equipment
- Teaching assistant for undergraduate Reactor Design Laboratory
- NASA Consultant on theoretical nanotube study - "Molecular Orbital Calculations on Carbon and Silicon Carbide Nanotubes", Submitted report to NASA October 2001, David W. Ball, John Reye, Jorge Gatica, Wilfredo Morales, and Edmond Wong
- Thermal analysis of polymers – Dissolution and swelling characteristics of amorphous polymers
- Study of chemical reactivity and quantitative predictions of catalysis
- Lubrizol Consultant – Study of experimental oil using TC Probe™ to estimate thermal conductivity

Advanced Ceramics Corporation, Strongsville, Ohio**Intern for R&D, 06/02 – 09/02**

- Developed apparatus and testing procedures for evaluating electrostatic chucks, heaters, and coupled systems for electrical integrity and thermal uniformity
- Measuring of electrical properties of pyrolytic boron nitride (PBN) ceramic materials

Cleveland State Chemical Engineering Department, Cleveland, Ohio**Research Assistant, 06/97 – 03/99**

- Directional solidification of binary alloys
- Experimental, and numerical modeling performing image analysis on morphology of alloy microstructures
- Operator of Leica Ultra Miller – micron scale milling machine used to cut alloy samples cross sections for generating 3-dimensional morphology data

PUBLICATIONS

- "Characterization of the Dissolution and Swelling Characterization of Diverse Amorphous Polymers by a Thermal Mechanical Analyzer", Manuscript submitted to Journal of Thermal Analysis and Calorimetry, John Reye, Elizabeth Moore, and Alan T. Riga
- "lpp deletion as a permeabilization method", Biotechnology and Bioengineering 97 (6): 1347-1356 AUG 15 2007 Ye Ni, John Reye, and Rachel Chen
- "Conversion Coatings for Aluminum Alloys by Chemical Vapor Deposition Mechanisms", NASA Technical Memorandum, Report Number: NASA TM-2004-212905, Report Date: January 2004, Funding Number: WBS-22-714-09-16, John T. Reye, Lisa S. McFadden, Jorge E. Gatica, and Wilfredo Morales
- "Unified Explanation of Catalyzed and Non-Catalyzed Chemical Reactions", Journal of Molecular Catalysis A: Chemical, Vol. 206, pp. 269-289, October 1, 2003, Ralph A. Gardner-Chavis and John Reye
- "Mushy Zone Morphology During Directional Solidification of Pb-5.8 wt.% Sb Alloy", Metallurgical & Materials Transaction A 31: (9), pp. 2275-2285, SEP 2000, L. Yu, G.L. Ding, J. Reye, S.N. Ojha and S.N. Tewari
- "Cellular/Dendritic Array Tip Morphology During Directional Solidification of Pb-5.8 wt pct Sb Alloy", Metallurgical & Materials Transaction A 30: (9), pp. 2463-2472, SEP 1999, L. Yu, G.L. Ding, J. Reye, S.N. Ojha and S.N. Tewari
- "Macroseggregation Caused by Thermo-solutal Convection in Directional Solidified Pb-Sb Alloys", Metallurgical & Materials Transaction A 30: (8), pp. 2167-2171, AUG 1999, S.N. Ojha, G.L. Ding, L. Yu, J. Reye, S.N. Tewari

PRESENTATIONS

- “Dissolution and Swelling Characteristics of Diverse Amorphous Polymers by Thermal Mechanical Analysis” [T7008]- Mixing, Reactions and Mass Transfer in Polymer Systems, Presented at the AIChE National Fall Conference November 2003 in San Francisco, CA, John T. Reye (speaker), Carolina Garrido, Alan T. Riga
- “Protective and Conversion Coatings by Chemical Vapor Mechanisms”, [400d] – Advanced in Ceramic Thin Films, Presented at the AIChE National Fall Conference November 2003 in San Francisco, CA, Jorge E. Gatica, John Reye, Alan T. Riga, Szabi Sofalvi (speaker)
- “Surface Modification of Aluminum by CVD Mechanism Using Aryl Phosphates”, [381h] – Reactor Design and Analysis of Electronic Materials, Presented at the AIChE National Fall Conference November 2002 in Indianapolis, IN, John Reye (speaker), Jorge Gatica, Wilfredo Morales, Lisa McFadden
- “Chemical Vapor Deposition Mechanism to Generate Conversion Coatings”, Ohio Space Grant Consortium, April 2002, John Reye (speaker), Jorge Gatica, Wilfredo Morales, Lisa McFadden
- “Use of Chemical Vapor Deposition Mechanism for Generating Conversion Coatings”, [178h] – Mechanisms of Surface Processes, Presented at the AIChE National Fall Conference November 2001 in Reno, NV, John Reye (speaker), Jorge Gatica, Wilfredo Morales, Lisa McFadden

COMPUTER SKILLS

- Software: Microsoft Office, Polymath, Matlab, and AutoCAD
- Molecular simulation software package: Hyperchem
- Environmental models: EPI Suite, Level I and Level II Environmental Equilibrium Partitioning Model
- Wastewater Treatment Model: WATER 9
- Bioinformatics software package: DNAMAN

HONORS and ORGANIZATIONS

- Awarded Institute of Paper Science and Technology Fellowship January 2007- present
- Technical Association of the Pulp and Paper Industry (TAPPI) Student Chapter - Treasurer (2007-2008)
- Member of the National American Institute of Chemical Engineers (AIChE) 1999-present
- Member of the National Technical Association of the Pulp and Paper Industry (TAPPI) 2007-present
- Passed Fundamentals of Engineering Examination, administered by: National Council of Examiners for Engineering and Surveying, April 2001
- Chairman’s Award, awarded for academic excellence and service to department, April 2000
- Attended the National Fall AIChE Conferences 1999 – 2003 in Dallas, TX, Los Angeles, CA, Reno, NV, and Indianapolis, IN, San Francisco, CA
- AIChE Cleveland Section Scholarship Award Winner, February 2000
- American Institute of Chemical Engineering (Student Chapter) - Vice President (1999-2000)
- Member of Tau Beta Pi (Ohio Epsilon), inducted 1998 – Cataloger (1999 – 2000)
- Member of a 2000 Engineer’s Week Display Competition Team, 1st place at both CSU and local competitions, “Oxygen Production Through Ionic Transport Membrane Technology”
- International Science and Engineering Fair, Cleveland Convention Center, Cleveland, Ohio - volunteer 2003
- Professional Association of Diving Instructors (PADI), Advanced Open Water Diver Certified