

Cecil A. Coutinho, Ph.D.

15806 Stags Leap Dr, Lutz, FL 33559 • Tel: 661-565-0698 • Email: cecilcoutinho@gmail.com

EDUCATION

University of South Florida, Tampa, FL

Doctor of Philosophy in Chemical Engineering, 2009

Master of Engineering in Chemical Engineering, 2007

Graduate Certificate in Material Science and Engineering, 2007

University of Nebraska, Lincoln, NE

Bachelor of Science in Chemical Engineering, 2005

TECHNICAL SKILLS

Strong skills in a variety of programming languages: C++, Visual Basic, Fortran.

Talented with analytical software: Matlab, Simulink, Labview, MathCAD, Maple, HP-VEE, Polymath, TK-Solver, PSPICE, IGOR PRO.

Advanced knowledge in design software: Comsol Multiphysics, ASPEN and ChemCAD.

CHARACTERIZATION SKILLS

UV-Vis Spectroscopy, Fourier Transform Infrared Spectroscopy, Ellipsometry, Dynamic/Static Light Scattering, Turbidometry, Transmission Electron Microscopy, Scanning Electron Microscopy, Optical Microscopy, Atomic Force Microscopy, Gas Chromatography, High Performance Liquid Chromatography, Thermal Gravimetric Analysis, X-Ray Diffraction.

PROFESSIONAL EXPERIENCE

University of South Florida, Tampa, FL

Adjunct Professor, Chemical Engineering (2009-current)

- Instructed students in undergraduate course 'Mass Transfer & Separations'
- Developed the syllabus for the course, lesson plans, homework assignments, tests and assigned grades

Research Assistant, Chemical/Mechanical Engineering (2005-2009)

- Synthesized novel microgels functionalized with nanoparticles of titania for photocatalytic wastewater remediation. Results are patented
- Prepared RSSCT to examine the effects of heavy metals in groundwater
- Supervised 10 research assistants; ensured that projects were completed accurately and in a timely fashion.
- Developed novel slurries for the planarization of silicon oxide wafers to produce ultra smooth surfaces. Results are patented
- Analyzed photocatalytic degradation studies using nanosized titania for remediation applications. Results are patented
- Collaborated with professors on publications in scholarly journals
- Prepared and presented research results at national professional conferences

University of Nebraska – Lincoln, Lincoln, NE

Research Assistant, Chemical Engineering (2005- 2006)

- Explored the environmental impact and kinetics of precious metal extraction.
- Researched the economic and technical viability of ethanol production from biomass as a viable renewable source of energy

Nebraska Department of Roads, Lincoln, NE

Chemist, Wet Chemistry Lab (2004-005)

- Performed quality control using x-ray fluorescence, ball milling, flame photometry and wet chemistry
- Tested materials for feasibility and road design safety

SELECT PUBLICATIONS (10 peer-reviewed publications in total)

Cecil Coutinho and Vinay Gupta, "Photocatalytic Degradation of Methyl Orange Using Polymer-Titania Microcomposites", *Journal of Colloid and Interface Science*, **333**, 457-464 (2009).

Cecil Coutinho, Subrahmanya Mudhivarthi, Ashok Kumar, and Vinay Gupta, "Novel Ceria-Polymer Microcomposites for Chemical Mechanical Polishing", *Applied Surface Science*, **255**, 3090-3096 (2008).

Cecil Coutinho, Reshma Harrinauth and Vinay Gupta, "Settling Characteristics of Composites of PNIPAM Microgels and TiO₂ Nanoparticles", *Colloid and Surfaces A: Physicochemical and Engineering Aspects*, **318**, 111-121 (2008).

Cecil Coutinho and Vinay Gupta, "Formation and Properties of Composites Based on Microgels of a Responsive Polymer and TiO₂ Nanoparticles", *Journal of Colloid and Interface Science*, **116**, 116-122 (2007).

SELECT CONFERENCES (27 total presentations at national and regional conferences)

Cecil Coutinho, Subrahmanya Mudhivarthi, Ashok Kumar, and Vinay Gupta, "Novel Ceria-Polymer Composites for Reduced Defects during Oxide CMP", Spring Meeting of the Materials Research Society, San Francisco (CA), April 2009.

Cecil Coutinho and Vinay Gupta, "Developing Composites of Polymer Microgels and Titania Nanoparticles for Photocatalytic Degradation", Annual Meeting of the American Institute of Chemical Engineers National Meeting, Philadelphia (PA), November 2008.

Cecil Coutinho and Vinay Gupta, "Synthesis and Properties of Functional Composites Formed from a Responsive Polymer and Titania Nanoparticles", Annual Meeting of the American Chemical Society, Boston (MA), August 2007.

PATENTS

Vinay Gupta, Cecil Coutinho, Maya Trotz, "Functional Composites Formed from Colloidal Polymer Particles with Photocatalytic Metal Oxide (MO_x) Nanoparticles", US Patent Pending

Vinay Gupta, Ashok Kumar, Cecil Coutinho, Subrahmanya Mudhivarti, "Polymeric Microgels for Chemical Mechanical Planarization (CMP) Processing", *World Intellectual Property Application* (WO2008052216) May 2, 2008.

SELECT HONORS (full list and references available upon request)

Outstanding Teaching Assistant, University of South Florida (2007-2008, 2005-2006)

Outstanding Research Assistant, University of South Florida (2007-2008)

Graduate Student Achievement Award, University of South Florida (2007-2008)

New Nebraskan Scholarship, University of Nebraska – Lincoln (2002-2005)

Regent Scholarship, University of Nebraska - Lincoln (2002-2003)