

Ameya Natu

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Objective

Seeking full time position as an organic chemist taking advantage of my knowledge of polymer, coatings and colloid chemistry.

Education

Ph.D. Chemistry	GPA: 3.8/4.0
Missouri University of Science and Technology, Rolla, MO, USA	(expected) September '14
MS Chemistry	GPA: 3.8/4.0
Missouri University of Science and Technology, Rolla, MO, USA	Aug '09 - July '11
Bachelor of Technology (Polymers and Coatings)	GPA: 3.7/4.0
University Institute of Chemical Technology, Mumbai, India.	Aug '05 - May '09

Expertise

- Cross-functional experience in surface coatings science with a strong academic background in polymer and colloids chemistry.
- Synthesis and characterization of acrylic, urethane and epoxy polymeric materials and coating formulations.
- Structure property relationships of various polymer systems and design of experiments.
- Development and implementation of testing protocols for identifying components of a chemical system.

Professional Experience

Graduate Research

- Successfully analyzed the rheological and surface tension behavior of Colloidal Unimolecular Polymer particles (CUPs) and fitted theoretical models to demonstrate the effect of effective charge density and surface water on viscosity and surface tension of the particles.
- Developed polymeric acid catalyst for curing of acrylic-melamine resin systems based on zero-VOC, water-reducible nano-polymers.
- Synthesized superior acrylic-melamine thermoset coatings using acrylic water-reducible nano-polymers.
- Explored the chemistry & synthesis of thiol-modified graphite oxide for use in crosslinking of epoxy-amine resins and analyzed its effect on tensile properties.
- Successfully completed numerous projects for several companies for analysis and characterization of resins and coatings.
- Authored research proposal for NSF grant for 'novel method of polythiourethane synthesis'.

Missouri S&T Coatings Institute, USA.

- Supervised the lab-work and guided groups for the short course "Introduction to paint formulation".
- Conducted lectures and demonstrations for the short courses "Basic composition of coatings" and "Coatings for people in the general industry".

Undergraduate Research

- Synthesized & characterized water-proofing acrylic emulsion coatings for concrete.

Summer Intern, Akzonobel India (formerly ICI Paint India Ltd.)

May '08 – Aug '08

- Tested and developed a method for optimizing the surfactant dosage in a cement primer.

Publications

- "Molecular weight and functionality effects on CUP formation & stability"; Dr. Michael R. Van De Mark, Ameya M. Natu, Sagar. V. Gade, Catherine Hancock, Minghang Chen, Cynthia Riddles, Journal of Coatings Technology & Research, 11(2), 112-122, 2014.
- "Synthesis and application of acrylic colloidal unimolecular polymers as a melamine thermoset system"; Jigar K. Mistry, Ameya M. Natu & Michael R. Van De Mark, Journal of Applied Polymer Science, 2014.
- "Synthesis and characterization of colloidal unimolecular polymer (CUP) particles based on sulfonate functional copolymer and their use as a catalyst for acrylic-melamine resin systems"; Ameya M. Natu, & Dr. Michael R. Van De Mark; Proceedings of American Coatings Conference, 2014.

- Electrokinetic, rheology and surface tension behavior of colloidal unimolecular polymer particles”; Ameya M. Natu, Marcus Wiggins & Dr. Michael R. Van De Mark, Abstracts of American Chemical Society, 246, 2013.
- “Synthesis and characterization of colloidal unimolecular polymer (CUP) particles based on quaternary ammonium functional copolymers; Ameya M. Natu & Dr. Michael R. Van De Mark, Midwest American Chemical Society Meeting, 2013.

Presentations

- “Solvent reduction technology: What are the rules?” a talk at RCMA International Roof Coatings Conference, Baltimore, Maryland, 2014.
- “Polymeric acid catalyst for acrylic-melamine resins” poster presentation at American Coatings Conference, Atlanta, Georgia, 2014.
- “Electroviscous effects and surface tension behavior of sulfonate functional CUPs” a talk at ACS National Meeting, Indianapolis, 2013.
- “Effect of molecular weight on CUP formation and stability” a talk at 40th Annual Waterborne symposium, New Orleans, Louisiana, 2013.
- “Quaternary ammonium functional CUP: rheology and surface tension study”, Poster presentation at Midwest ACS meeting, Springfield, Missouri, 2013.

Missouri S&T Coatings Newsletters

- Volume 11 Issue 1; “Factors affecting diffusion of polymer chains during latex film formation”.
- Volume 10 Issue 1; “Visible Light curing of Coatings”.
- Volume 7 Issue 2; “Physical Vapor Deposition Aluminum (PVDA): A special class of effect pigments”.

Honors / Achievements

- Shelby F. Thames Best paper award for co-authoring the paper ‘Molecular Weight and Functionality effects on CUP formation and stability’ at the 40th Annual Waterborne, High-Solids, and Powder Coatings Symposium, 2013.
- Outstanding Chemistry Graduate Teaching Assistant, Missouri S&T, 2013.
- Travel Grant Award of \$1000 sponsored by BYK USA Inc. for poster presentation at American Coatings Conference, 2014.

Skills

- Hands-on experience in formulation, characterization and testing of water and solvent-borne coatings and polymers.
- Operation and data analysis using analytical techniques like Nuclear Magnetic Resonance Spectroscopy (NMR), Gas Chromatography (GC), Fourier Transform Infrared Spectroscopy (FTIR), and UV-Visible Spectroscopy.
- Statistical analysis using SAS program.

Activities

- Member of American Chemical Society – Polymer Division and MST Council of Graduate Studies.

Reference

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