

## Amit S. Kulkarni

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### OBJECTIVE

Seeking a challenging internship position in the field of polymer science and engineering that compliments my research background.

### EDUCATIONAL QUALIFICATIONS

- **PhD.** in Materials Science and Engineering, **University of Cincinnati**  
**Expected Graduation Date:** March 2007.  
**Courses:** Nanopowders, Diffraction theory, Scanning Electron Microscopy.
- **MS: March 2005** Materials Science and Engineering (Polymers), **University of Cincinnati**.  
**Courses:** Polymer Science, Polymer Characterization, Polymer Processing, Polymer Properties, Advanced Thermodynamics, Biomaterials, Optical Characterization Techniques, Solution Properties of high molecular weight polymers.
- **Bachelor of Engineering (BE): August 2002** Polymer Engineering, **University of Pune, India**  
**Courses:** Polymer Chemistry, Polymer Processing, Mold Design, Process Calculations, Fluid Mechanics, Heat Transfer, Strength of Materials, Organic Inorganic and Physical Chemistry.

### PUBLICATIONS

1. Kulkarni AS, Beaucage G, "Reaction induced phase-separation controlled by molecular topology," *Polymer*, March 2005.
2. Kulkarni AS, Beaucage G, "A review of branch content determination in polymers and ceramic oxide nanoparticles" *Journal of Polymer Science, Polymer Physics*, accepted March 2005.
3. Kulkarni AS, Beaucage G, "Determination of fractal dimensions of silica nanoaggregates pertaining to branch fraction calculation using small angle x-ray scattering," under preparation.
4. Beaucage G, Kulkarni AS, Chapter 4: Chain structure characterization, "Molecular Characterization and Analysis of Polymers," Chalmers J, and Meier R editors, Elsevier Science, under preparation.

### TALKS

1. Kulkarni AS, Beaucage G, "Phase-separation in bimodal PDMS networks," ACS Rubber Division meet, October 2004, Columbus, OH.
2. Kulkarni AS, Beaucage G, "Branch content in polyolefins using small angle scattering: A new approach using fractal geometry," under preparation for ACS Fall 2005 meet, Washington D.C.

### RESEARCH PROJECTS

- **Doctoral**  
Currently working on my doctoral research titled "*Quantification of branching in disordered materials using small angle x-ray and neutron scattering*," under the guidance of Dr. G. Beaucage. This project would look at a novel way to characterize branching in polyolefins and ceramic nanoparticles using SAXS and SANS. GPC, NMR and rheological measurements would also be employed to corroborate new models proposed based on scattering data.
- **Master of Science**  
For my MS thesis I worked on "*Reaction induced phase-separation controlled by molecular topology*," at University Cincinnati under Dr. G. Beaucage. Phase separation kinetics and nature in end functionalized bimodal PDMS network was studied.

➤ **Bachelor of Engineering**

For the senior year project I worked on the “*Synthesis and Characterization of high molecular weight polyNaAMPS for enhanced oil recovery in hostile environment,*” at National Chemical Laboratory, Pune, India.

**TECHNICAL SKILLS**

- Certified user of the **Advanced Photon Source**, located at **Argonne National Lab**, Chicago.
- **Characterization:** SAXS, XRD, NMR, IR, SEM, DSC, TGA, Light Scattering.
- **Processing:** Extrusion, Injection Molding, Fiber Spinning, Film Blowing.
- **Computers:** Windows NT/2000, CAD, CAE, Office 2000, C Programming Language.

**HONORS/ACADEMIC ACHIEVEMENTS**

- University Graduate Scholarship from University of Cincinnati for MS and PhD. in the Chemical and Materials Engineering Department.
- Ranked 4<sup>th</sup> in the second and third year of Engineering at University of Pune.
- “*YBCO Superconducting Films on Cu substrates using laser ablation technique*” presented at TECHNOKREC 2002, REC Surathkal, India.
- “*Fiber reinforced plastics*” presented at MATRIX 2001, University of Roorkee, (now IIT Roorkee).

**TEACHING EXPERIENCE**

- Teaching Assistant for Basic Thermodynamics, Polymer Properties, XRD, Advanced Polymer Characterization.

**REFERENCES**

- Dr. Gregory Beaucage  
Associate Professor, University of Cincinnati,  
Phone: 513 556 3063  
Email: [beaucag@uc.edu](mailto:beaucag@uc.edu)
- Additional references available on request.