

**Gregory Beaucage, Associate Professor**  
Department of Chemical and Materials Engineering  
University of Cincinnati  
Cincinnati, OH 45221-0012

Office: 513 556-3063  
Lab: 513 556-5152  
Fax: 513 556-3473  
e-mail: beaucag@uc.edu

<http://www.eng.uc.edu/~gbeaucag/BeaucageResearchGroup.html>

- 1980 University of Rhode Island, Kingston, RI 02881 **B.S. Zoology**; Highest Distinction  
1982 University of Rhode Island, Kingston, RI 02881 **B.S. Chemical Engineering**; High Distinction.  
1991 University of Massachusetts, Amherst, MA 01003 **Ph.D. Polymer Science and Engineering**. Advisor: **Richard S. Stein**. *A Morphological, Mechanical and Thermodynamic Investigation of the Isotactic-PVME/PS Polymer Blend*.  
1991 Sandia National Laboratory, Albuquerque, NM 87185; **Post Doctoral Fellow**, Organic Materials Group *Characterization of nanomaterials using scattering & scattering theory*.

### Appointments

University of Cincinnati, Cincinnati, OH, 45221 **Associate Professor**, Department of Chemical and Materials Engineering, 2000-present  
ETHZ, Zurich Switzerland **Visiting Professor** Funded by Swiss National Science Foundation and Dupont Corporation. 8/2003-8/2004.  
University of Cincinnati, Cincinnati, OH, 45221 **Assistant Professor**, Department of Materials Science and Engineering, 1994-2000.  
Sandia National Laboratory, Albuquerque, NM 87185, **Staff Member**, Organic Materials Group 1815. Cooperative research agreements with U.S. industrial partners. 1993-1994

### Other Experience and Professional Memberships

2000-present Advisory Board Intense Pulse Neutron Source, Argonne National Laboratory.  
2003-present Founding Member of LENS Neutron Scattering Facility at Indiana University  
2000-present Founding Member of LSU Synchrotron SAXS User Group  
1980-present Member American Institute of Chemical Engineers  
1990-present Member American Physical Society  
1992-present Member American Crystallographic Society  
2004-2005 Chair of the Small Angle Scattering Special Interest Group ACryS.  
2003-2004 Program Manager Small Angle Scattering Special Interest Group ACryS  
1995-present Panel and Individual Referee for NSF/PRF/DOE/Commerce Proposals.  
2006-2007 Society of Plastics Engineers Annual Meeting General Organizing Committee  
Vice-Chairperson & Secretary Cincinnati Meeting.

### **10 Related Publications (102 peer reviewed) pdfs:**

- 1) *Probing the dynamics of nanoparticle growth in a flame using synchrotron radiation*. Beaucage G, Kammler HK, Mueller R, Strobel R, Agashe N, Pratsinis SE and Narayanan T, *Nature Mater.* **3**, 370-373 (2004).
- 2) *In situ studies of nano-particle growth dynamics in premixed flames*. Kammler HK, Beaucage G, Kohls DJ, Agashe N, Ilavsky J., *J Appl. Phys.* **97**(5) 2005 (Article 054309).
- 3) *Particle size distributions from small-angle scattering using global scattering functions*. Beaucage G, Kammler HK, Pratsinis SE, *J. Appl. Cryst.* **37**, 523-535 (2004).
- 4) *Approximations leading to a unified exponential/power-law approach to small-angle scattering*. Beaucage G, *J. Appl. Crystallogr.* **28**, 717-728 (1995).
- 5) *3D Hierarchical orientation in polymer-clay nanocomposite films*. Bafna A, Beaucage G, Mirabella F *Polymer* **44**, 1103-1115 (2003).
- 6) *Structure of flame-made silica nanoparticles by ultra-small-angle X-ray scattering*. Kammler HK, Beaucage G, Mueller R, and Pratsinis SE, *Langmuir* **20**, 1915-1921 (2004).
- 7) *Determination of branch fraction and minimum dimension of mass-fractal aggregates*. Beaucage G, *Phys. Rev. E*, **70**, 031401 (2004).
- 8) *Small-Angle Scattering from Polymeric Mass*

- Fractals of Arbitrary Mass-Fractal Dimension.* Beaucage G, *J. Appl. Crystallogr.* **29**, 134-146 (1996).
- 9) *Fractal analysis of flame-synthesized nanostructured silica and titania powders using small-angle X-ray scattering.* Hyeon-Lee J, Beaucage G, Pratsinis SE *Langmuir* **14**(20), 5751-5756 (1998).
- 10) *Structural analysis of polydimethylsiloxane (PDMS) modified silica xerogels.* Guo L., Hyeon-Lee J, Beaucage G J. *Non-Crystalline Solids* **243** 61-69 (1999).

### Synergistic Activities

- 1) *Creation:* Development of scattering theories to describe aggregate nanostructures, [3-7]. *Integration:* Pioneered application of x-ray scattering in situ to pyrolytic synthesis of nanomaterials [1-2]. *Transfer of Knowledge:* [1] is in one of the highest ranked journals for any synthetic aerosol paper, raising the exposure of synthetic Aerosol Science.
- 2) *Creation:* Developed aero-sol-gel reactor for room temperature aerosol synthesis.
- 3) *Transfer of Knowledge:* Chairman of small-angle scattering group American Crystallographic Organization, Organizer for annual meeting of ACA.
- 4) *Transfer of Knowledge:* Organizer for characterization session in particle technology for AIChE meeting Fall 2005, and Spring (World Particle Congress) 2006. Organizing session on in situ characterization for Fall 2006 AIChE meeting in San Francisco.
- 5) *Transfer of Knowledge:* 9 web courses including extensive notes, laboratory experiments and data. 135,000 IP#'s have hit the homepage since 2000 (averaging 60 hits/day).

### Collaborators & Other Affiliations (past 48 months)

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| Dr. J. A. van Bokhoven, Professor, ETH, Chem. and Bioengineering, Zurich, Switzerland. | Dr. T. Narayanan, ESRF ID02, Grenoble France.                        |
| Dr. J. Ilavsky, UNICAT, APS, Argonne National Laboratories, Argonne Illinois.          | Dr. S. E. Pratsinis, Process Engineering, ETHZ, Zurich, Switzerland. |
| Dr. P. Jemian, UNICAT, APS, Argonne National Laboratories, Argonne Illinois.           | Dr. S. K. Sukumaran, University of Leeds, UK.                        |
| Dr. D. Londono, Dupont CR, Wilmington DE.  | Dr. Chong Ahn, Bio-MEMS Center, Cincinnati.                          |
| Dr. F. Mirabella, Lyondell Chemical, Cincinnati.                                       | Dr. Gerhard Muhrer, Novartis Corporation, Basel Switzerland.         |

### Graduate & Postdoctoral Advisors

**Dr. Richard S. Stein**, Emeritus Professor of Polymer Science and Engineering, University of Massachusetts, Amherst, MA. Member NAS and NAE.

**Dr. D. W. Schaefer**, Sandia National Laboratories (Currently Professor of Engineering (Formerly Dean of Engineering), U. Cincinnati).

### Thesis Advisor and Postgraduate-Scholar Sponsor (PhD: 7 , MS: 7, Post Doc: 2)

#### Current Students:

**Doug Kohls**, (MS 2002) *In situ studies of silica synthesis in flames.* (PhD 2006) Post doc currently.

**Amit Kulkarni** (MS 2004), *Quantification of branching in nano aggregates and synthetic polymers.* (PhD 2007)

**Ramnath Ramachandran** *Chain persistence in biopolyesters.* (PhD 2008).

**Mangesh Champhekar**, *Polymer films and membranes.* (MS 2007)

**Kurt Woodford**, *Senior Project: Orientation of Polyolefin Films.* (BS 2007)

#### Past Graduated Students/Post Doc

**Ryan Breese** (MS 2004) *Structure-property relationships in post-processed poly. films.*

**Hashard Chavan** (MS 2006) *Bioplastics San Jose CA.*

**Ayush Bafna** (PhD 2004, MS 2002) *Research Engineer, Extrusion Technologies, Phil. PA*

**Nikhil Agashe** (PhD 2004, MS 2001) *Research Engineer GE Plastics, Evanston IN.*

**Suresh Murugesan** (PhD Chemistry 2003) *Scientist Texas Research Institute.*

**S. Sukumaran** (PhD 2002) *Max Planck Institute for Polymer Research, Mainz, Germany.*

**G. Skillas** (Post-Doc from ETH Zurich 2001) *Research scientist, GMX division of Degussa, Hanau Germany.*

**J. Hyeon-Lee** (PhD 1998) *Research Scientist, Samsung Research Institute, Seoul, South Korea.*

**Ling Guo** (MS 1997) *P&G Miami Valley Laboratories (Central Research Division).*

**S. Rane** (PhD 1999) *Senior Research Engineer, GE Plastics, Columbus IN.*

**Gregory Rossi** (MS 2002) *Lawyer Cincinnati.*