

BETTIE OBI JOHNSON, PH.D.

University of South Carolina at Lancaster

476 Hubbard Drive, Lancaster, SC 29720

Phone: 803-313-7020, Email: objohns@mailbox.sc.edu,

Faculty Webpage: <http://usclancaster.sc.edu/faculty/johnson/index.html>

EDUCATION

Doctorate of Philosophy, Analytical Chemistry, Georgia Institute of Technology, June 1999

Thesis: "Mechanistic Analysis of Chemical Vapor Deposition from Metal-Organic Precursors", advisor: Dr. William S. Rees, Jr.

Bachelor of Science in Chemistry, University of West Florida, May 1994

Undergraduate Research: "The Effect of the Molecular Chaperone Alpha-Crystalline on UV-Induced Aggregation of Lens Proteins", advisor: Dr. Robert F. Borkman, Georgia Institute of Technology

EMPLOYMENT HISTORY

August 2004 – present: University of South Carolina Lancaster

Assistant Professor of Chemistry (Aug 2006-present), Chemistry Instructor (Aug 2004 - Jul 2006)

- **Courses taught:** Chem 101/101L (Fundamental Chemistry I), Chem 102/102L (Fundamental Chemistry II), Chem 105/105L (Chemistry and Modern Society), Chem 107/107L (Forensic Chemistry), Chem 111/111L (General Chemistry I), Chem 112/112L (General Chemistry II), Chem 321/321L (Quantitative Analysis/Analytical Chemistry), Chem 331L (Essentials of Organic Chemistry I Lab), Chem 332L (Essentials of Organic Chemistry II Lab), Chem 334L (Comprehensive Organic Chemistry II Lab)
- **Research Interests:** I am interested in applying the tools of analytical chemistry to solve problems in chemistry and biology. Recent projects include the development of methods for quantitative determination of trace level contaminants in water and of volatile organic compounds produced by nectar-inhabiting microorganisms. I am interested in the development of novel teaching experiments that actively engage students and incorporate modern laboratory instrumentation at all levels. Instrumental techniques include solid phase micro-extraction (SPME), gas chromatography-mass spectrometry (GC-MS), liquid chromatography (HPLC), infrared spectroscopy (FTIR) and ultraviolet/visible spectrophotometry (UV-Vis).
- **Academic Service:** USCL Chemistry Club Co-Sponsor (Fall 2008 – present), Lancaster County Science Fair Liaison (2006 – present), USCL Academic Success Center Committee (2010-2011), USCL Faculty Organization Secretary (2009 – 2010), USC Regional Campuses Faculty Senate-System Affairs (2006 – 2009), USCL Bookstore Committee (2007 – 2008), USCL Special Events Committee (2008 – present)

July 1999 – July 2004: Celanese Acetate, Charlotte, NC and Rock Hill, SC

Analytical Chemist in Research & Development (Charlotte) & Process Technology (Rock Hill)

- **Job responsibilities:** developed analytical test methods to enhance cellulose acetate product quality and process control; performed non-routine analytical testing to assist with production problems; led analytical center of excellence team that worked to standardize and improve testing between multiple sites; participated on technical partnership teams with finish oil and wood pulp suppliers; supervised six laboratory technicians in the research and development laboratories.

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PUBLICATIONS AND PRESENTATIONS

1. Johnson, Bettie Obi; Burke, Fernanda M.; Harrison, Rebecca; Burdette, Samantha. "Quantitative Analysis of Bisphenol A Leached from Household Plastics". Submitted to *J. Chem. Educ.* **July 2011**.
2. Freeman, Jonathan; Golonka, Annette; Obi-Johnson, Bettie. "The Role of Nectar Inhabiting Yeast in the Floral Scent of *Silene caroliniana* Plants", *University of South Carolina Discovery Day*, **April 22, 2011**.
3. Johnson, Bettie Obi; Burke, Fernanda; Burdette, Samantha. "Determination of Ethylene Glycol in Engine Coolants using Refractive Index" *Chem. Educator [Online]*, **2011, 16**, 116-118.
4. Johnson, Bettie Obi; Burke, Fernanda. "Modernizing the Chemistry Lab Experience using Hi-Tech Instrumentation", *Two Year College Chemistry Consortium Conference*, **November 2010**.
5. Johnson, Bettie Obi; Harrison, Rebecca. "Measurement of Bisphenol A Leached from Plastic Bottles by SPME GC-MS", *South Carolina Academy of Sciences National Meeting*, **April 2010**.
6. Johnson, Bettie Obi; Van Milligan, Henry. "How Heavy is a Balloon? Using the Ideal Gas Law". *J. Chem. Educ.* **2009**, 86, 224A – 224B.
7. O. Just, B. Obi-Johnson, J. Matthews, D. Levermore, and W. S. Rees, Jr., "Design, Synthesis, and Characterization of Precursors for Chemical Vapor Deposition of Oxide-Based Electronic Materials", *Mat. Res. Soc. Symp. Proc.*, **2000**, 606, 3.
8. J. Matthews, O. Just, B. Obi-Johnson, and W. S. Rees, Jr., "CVD of MgO from a Mg(Beta-ketoiminate)₂: Preparation, Characterization, and Utilization of an Intramolecularly Stabilized, Highly Volatile, Thermally Robust Precursor", *Adv. Materials*, **2000**, 6, 129.
9. B. Obi-Johnson and W. S. Rees, Jr. "Metal-Organic Chemical Vapor Deposition of Superconducting Metal Oxides," *Bull. Inst. Chem. Academia Sinica*, **1999**, 46, 59.
10. D. J. Otway, B. Obi, and W. S. Rees, "Precursors for Chemical Vapor Deposition of Yttrium Barium Copper Oxide," *J. Alloys and Compds.* **1997**, 251, 254.
11. R. F. Borkman, G. Knight, and B. Obi, "The Molecular Chaperone Alpha-Crystalline Inhibits UV-Induced Protein Aggregation," *Exp. Eye Res.* **1996**, 62, 141.

PROFESSIONAL AFFILIATIONS

American Chemical Society (1994–present)

Two Year College Chemistry Consortium (2007 – present)

South Carolina Academy of Sciences (2008 – present)