

Yuliya Luzinova

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Citizenship: United States of America

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia

PhD candidate - Analytical Chemistry, expected graduation May 2010

GPA: 3.5

Clemson University, Clemson, South Carolina

B.S. in Chemistry, May 2006

GPA: 3.69, Cum Laude

RESEARCH EXPERIENCE

Georgia Institute of Technology, Department of Chemistry and Biochemistry

Graduate Research Assistant, Analytical Chemistry

Advisor – Dr. Boris Mizaikoff, Professor and Dr. Thomas Orlando, Professor

- Mid-infrared (MIR) sensors for environmental detection/monitoring in harsh environments
- Investigating enrichment polymer coatings for analysis of water/oil/alcohol emulsions using fiber optic mid-infrared attenuated total reflection spectroscopy
- Developing, integrating, and depositing polymer coatings on micro-resonators for the enrichment with volatile organic compounds (VOC's)
- Investigating natural gas hydrate formation and dissociation processes utilizing fiberoptic mid-infrared evanescent field spectroscopy
- Studying carbonate minerals and hydrocarbons within gas hydrate ecosystems using infrared attenuated total reflection (IR-ATR) spectroscopy

08/06-present

Clemson University, Department of Materials Science and Engineering

Research Assistant

Advisor – Dr. Stephen H. Foulger, Professor

- Synthesis and characterization of monodisperse polystyrene particles
- Fabrication of self-assembled structures, composed of the core-shell particles, with enhanced physical or optical performance

01/06-08/06

Clemson University, Department of Chemistry

Undergraduate Research Assistant

Advisor –Dr. George Chumanov, Professor

- Synthesis of silver and gold nanoparticles
- Fabrication of polymer films with embedded nanoparticles
- Microscopic and spectroscopic study of nanoparticles

05/05-12/05

Clemson University, Department of Chemical Engineering

Undergraduate Research Assistant

REU at NSF Center Advance Engineering Fibers and Films

Advisor – Dr. S. Michael Kilbey, Former Associate Professor at Clemson University, Presently Joint Associate Professor at University of Tennessee and Oakridge Research National Lab

- Syntheses of tethered polymers by photopolymerization
- Molecular weight determination of photopolymerized tethered polymers
- Fabrication of thin polymer films using Micro-Jet Printing
- Fabrication of gradient polymer films

05/04-08/04, 05/03-08/03

TECHNICAL SKILLS

FTIR, IR Microscope, Raman, UV-Visible, NMR, EC-QCL, Ellipsometry, HPLC, GC-MS, AFM, STM, TEM, DLS, GPC, DSC, TGA, Spincoater, Profilometer, Bio-force molecular printer, Focused Ion Beam milling, Pressure Vapor Deposition (PVD).

TEACHING EXPERIENCE

Georgia Institute of Technology, Department of Chemistry and Biochemistry

Taught General Chemistry laboratories, 08/06-05/07

Clemson University, Department of Chemistry

Peer-Led Team Learning group leader, helping freshmen chemistry students to increase their understanding of an introductory chemistry courses, 08/05-05/06

HONORS

Georgia Institute of Technology

- Georgia Tech Graduate Conference Fund Travel Award to attend PITTCON Conference in Chicago, IL (2009)
- Georgia Tech Graduate Conference Fund Travel Award to attend Eurotrode XI Conference in Dublin Ireland (2008)
- GAANN Polymers Stipend (2006-2007)

Clemson University

- President's List (Spring 2004, Spring 2005)
- Dean's List (Fall 2002, Spring and Fall 2003, Fall 2005)
- Life Scholarship Recipient (2002-2006)
- Little John Scholarship (2003-2004)
- A&L Bullington Scholarship (2005-2006)

PROFFESIONAL AFFILIATIONS

American Association for the Advancement of Science (2009-Present)
Society for Applied Spectroscopy (2007-Present)
National American Chemical Society (2007-Present)
The Coblentz Society on Vibrational Spectroscopy (2007-Present)

LANGUAGES

Fluent in English, Russian, Ukrainian; Basic knowledge of German

PUBLICATIONS

"Quantification of adamantane in organic media via infrared attenuated total reflection spectroscopy." **Y. Luzinova**, G. T. Dobbs, R. Sassen, B. Mizaikoff 2009, Organic Geochemistry, in press.

"External cavity widely tunable quantum cascade laser based hollow waveguide gas sensors for multianalyte detection." C. Young, S.-S. Kim, **Y. Luzinova**, M. Weida, D. Arnone, E. Takeuchi, T. Day, B. Mizaikoff, 2009. Sensors and Actuators B 140, 24-28.

“Frequency drift compensation in mass-sensitive chemical sensors based on periodic stiffness modulation.” K. S. Demirci, J. H. Seo, S. Truax, L.A. Beardslee, **Y. Luzinova**, B. Mizaikoff and O. Brand, IEEE International Conference on Micro Electro Mechanical Systems, Technical Digest 22nd, Sorrento, Italy, Jan 25-29, 2009, 284-287.

“Infrared spectroscopy for monitoring gas hydrates in aqueous solution”, G. T. Dobbs, **Y. Luzinova**, B. Mizaikoff. Proceedings of the 6th International Conference on Gas Hydrates (ICGH), July 2008.
(<https://circle.ubc.ca/bitstream/2429/1259/1/5525.pdf>)

“Gas and liquid phase sensing of volatile organics with disk microresonator.” S. Truax, K. S. Demirci, J. H. Seo, P. Kurzawski, **Y. Luzinova**, A. Hierlemann, B. Mizaikoff, O. Brand, IEEE International Conference on Micro Electro Mechanical Systems, Technical Digest, 21st, Tucson, AZ, United States, Jan. 13-17, 2008, 220-223.

“Mass-sensitive microsensor platform for liquid-phase environmental sensing.” J. H. Seo, A. Byun, G. T. Dobbs, **Y. Luzinova**, S. Truax, K. S. Demirci, B. Mizaikoff, O. Brand, Preprints of Extended Abstracts presented at the ACS National Meeting, American Chemical Society, Division of Environmental Chemistry 2007, 47(2), 748-754.

PRESENTATIONS

Oral presentations:

“Quantification of adamantane with infrared attenuated total reflection spectroscopy.” **Y. Luzinova**, G. T. Dobbs, R. Sassen, B. Mizaikoff, American Chemical Society (ACS) National Meeting, Washington DC, August 2009.

“Infrared attenuated total reflection analysis of adamantane in organic solvents.” **Y. Luzinova**, G. T. Dobbs, R. Sassen, and B. Mizaikoff. Semiannual Meeting of the Gulf of Mexico Hydrates Research Consortium, Oxford, MS, October 2008.

“Infrared spectroscopy for monitoring gas hydrates in aqueous solution.” G. T. Dobbs, **Y. Luzinova**, and **B. Mizaikoff**. 6th International Conference on Gas Hydrates (ICGH 2008), Vancouver, British Columbia, CANADA, July 2008.

“Analyzing gas mixtures with widely tunable quantum cascade laser based hollow waveguide gas sensors.” **C. Young**, S.-S. Kim, **Y. Luzinova**, M. Weida, D. Arnone, E. Takeuchi, T. Day, B. Mizaikoff. Europtrode IX, Dublin, Ireland, April 2008.

“Towards integrated mid-infrared photonic sensors.” **S.-S. Kim**, C. Young, **Y. Luzinova**, J.-H. Ryou, Y. Huang, R. Dupuis, S. Ralph, M. Weida, D. Arnone, E. Takeuchi, T. Day, B. Mizaikoff. Pittsburgh Conference on Analytical Chemistry and Analytical Spectroscopy (PITTCON), New Orleans, LA, March 2008.

“Chemically modified micro-resonator sensors.” **Y. Luzinova**, S. Truax, G. T. Dobbs, K. S. Demirci, J. H. Seo, O. Brand, and B. Mizaikoff. Pittsburgh Conference on Analytical Chemistry and Analytical Spectroscopy (PITTCON), New Orleans, LA, March 2008.

“MC118 gravity core analysis with infrared-attenuated total reflection spectroscopy in comparison with biogeochemical data.” **Y. Luzinova**, G. T. Dobbs, L. Lapham, A. Nguyen, J. Chanton, C. Martens, C. Lutken, R. Sassen, B. Woolsey, C. Kranz, and B. Mizaikoff. Semiannual Meeting of the Gulf of Mexico Hydrates Research Consortium, Oxford, MS, February 2008.

“Detecting authigenic carbonates in sediments with coccolith calcite and an update on hydrate monitoring.” **G. T. Dobbs**, A. Nguyen, Y. Luzinova, R. Sassen, C. Lutken, J. Chanton, B. Woolsey, C. Kranz, and B. Mizaikoff, Semiannual Meeting of the Gulf of Mexico Hydrates Research Consortium, Oxford, MS, October 2007.

“Mass-sensitive microsensor platform for liquid-phase environmental sensing.” **J. H. Seo**, A. Byun, G. T. Dobbs, Y. Luzinova, S. Truax, K. S. Demirci, B. Mizaikoff, and O. Brand, 234th ACS National Meeting, Boston, MA, August 2007.

Poster Presentations: “Mid-infrared fiberoptic monitoring of surface effects during gas hydrate formation.” **Y. Luzinova**, G. T. Dobbs, Y. Raichlin, A. Katzir, and B. Mizaikoff, American Chemical Society (ACS) National Meeting, Washington DC, August 2009.

“Exploring the role of surfactants in the nucleation and growth of gas hydrates with fiber-optic mid-infrared spectroscopy.” **Y. Luzinova**, G. T. Dobbs, Y. Raichlin, A. Katzir, and B. Mizaikoff, PITTCON, Chicago, IL, March 2009.

“Frequency drift compensation in mass-sensitive chemical sensors based on periodic stiffness modulation.” **K. S. Demirci**, J. H. Seo, S. Truax, L.A. Beardslee, Y. Luzinova, B. Mizaikoff and O. Brand, IEEE International Conference on Micro Electro Mechanical Systems, Sorrento, Italy, January 2009.

“Gas and liquid phase sensing of volatile organics with disk microresonator.” **S. Truax**, K. S. Demirci, J. H. Seo, P. Kurzawski, Y. Luzinova, A. Hierlemann, B. Mizaikoff, O. Brand, IEEE International Conference on Micro Electro Mechanical Systems, Tucson, AZ, United States, January 2008.

“Towards in situ characterization of chemosynthetically driven carbon cycling within oceanic gas hydrate ecosystems via mid-infrared spectroscopy.” G. T. Dobbs, A. Nguyen, L. Lapham, **Y. Luzinova**, B. Woolsey, C. Lutken, C. S. Martens, J. P. Chanton, R. Sassen, C. Kranz, and B. Mizaikoff. EUROPTRODE IX, Dublin, Ireland, March 2008.

“Infrared-attenuated total reflection spectroscopy of diamondoids in organic solvents.” **Y. Luzinova**, G. T. Dobbs, R. Sassen, and B. Mizaikoff. EUROPTRODE IX, Dublin, Ireland, March 2008.

“From FT-IR to quantum cascade lasers: hollow waveguide based gas sensors, representations in laboratory and field.” **C. Young**, S.-S. Kim, Y. Luzinova, M. Weida, D. Arnone, E. Takeuchi, T. Day, B. Mizaikoff. Europtrode IX, Dublin, Ireland, April 2008.

“Mid-Infrared chemical sensors.” **Y. Luzinova**, G. T. Dobbs, and B. Mizaikoff. Underwater Sensors Workshop, Georgia Institute of Technology, April 2007.

“Molecular weight determination of photopolymerized tethered polymers.” **Y. Luzinova**, S. Rahane, S. M. Kilbey II, REU poster session, Clemson University, August 2004.