

Rebecca L. Agapov

Postdoctoral Research Associate
Nanofabrication Research Laboratory
Center for Nanophase Materials Sciences
Oak Ridge National Laboratory
(865)-241-5310
agapovrl@ornl.gov

Education

The University of Akron, Akron, OH	Polymer Science	Ph.D., 2012
Millersville University, Millersville, PA	Chemistry	B.S., 2008

Professional Experience

2012-present Postdoctoral Research Associate, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory
2008-2012 Graduate Research Assistant, Ph.D. Program, The University of Akron
2006-2008 Scanning Electron Microscope Technician, Illuminex Corp

Professional and Synergistic Activities

2012 Filmed a “Research Connection” video for Akron Global Polymer Academy
2010-2011 “Write-it Do-it” Event Organized for Ohio Regional Science Olympiad
2012-present Member, American Chemical Society
2008-present Member, American Physical Society

Honors and Awards

2012 First Place Poster, 3rd International Nanoscale Imaging Workshop, ORNL
2012 Personal Enrichment Grant, The University of Akron
2012 Chosen to present to The Univ. of Akron Board of Trustees
2011 Goodyear Tire and Rubber Fellowship, The University of Akron
2011 Eastman Chemical Fellowship, Eastman Chemical
2011 *Eastman Polymers Technology Division Focus School Forum*, Eastman Chemical
2010, 2011 Outstanding Woman Student Award, The University of Akron
2009 Maurice Morton Award, The University of Akron
2008 Southern Pennsylvania ACS Outstanding Chemistry Senior
2007 ACS-POLYED Polymer Education Undergraduate Award

Publications

Full publication list follows CV.

Research Synopsis

Nano-optics and Enhanced Raman Scattering

- Combine plasmonic and dielectric resonances of metal-coated silicon-based nanopillar arrays for optical field enhancement
- Take advantage of nanoscale mechanics and self-organization of nanopillar arrays

- Correlation of Raman enhancement to nanoscale structure to better understand the nature of plasmonic “hot spots” and maximize near field enhancements

Graduate and Postdoctoral Advisors

Postdoctoral Advisor: Nickolay Lavrik (Oak Ridge National Laboratory)

Graduate Advisor: Mark D. Foster (The University of Akron)

PUBLICATIONS

Rebecca L. Agapov, Ph.D.

Center for Nanophase Materials Sciences Division
Oak Ridge National Laboratory
Oak Ridge, TN 37831
agapovrl@ornl.gov

Journal Publications

1. Agapov, R.L.; Robbins, J.; Thomas, R.; Hardman, D.L.; Foster, M.D. "The Effect of Fluorosurfactant, Copolymer Latex, and Cross-linker on the Surface Properties of Floor Polishes: An Investigation using AFM with Adhesion Mapping." *Prog. Org. Coat.* Under Final Review.
2. Agapov, R.L.; Sokolov, A.P.; Foster, M.D. "Protecting TERS Probes from Degradation: Extending Mechanical and Chemical Stability." *J. Raman Spectrosc.* Accepted.
3. Wang, S-F.; Li, X.; Agapov, R.L.; Wesdemiotis, C.; Foster, M.D. "Probing Surface Concentration of Cyclic/Linear Blend Films Using Surface MALDI-TOF Mass Spectrometry." *ACS Macro Lett.* **2012**, *1*, 1024-1027.
4. Agapov, R.L.; Malkovskiy, A.V.; Sokolov, A.P.; Foster, M.D. "Prolonged Blinking from TERS Probes." *J. Phys. Chem. C* **2011**, *115*, 8900-8905.

Conference Proceedings:

1. Agapov, R.L.; Sokolov, A.P.; Foster, M.D. "Protected Tip Enhanced Raman Spectroscopy Probes for the Study of Polymer Surfaces." *Polymer Preprints*, **2012**.
2. Agapov, R.L.; Sokolov, A.P.; Foster, M.D. "Robust probes for high-resolution chemical detection and imaging." *SPIE Proc. Vol. 8378*, **2012**, 837813.
3. Barrios, C.; Robbins, J.; Thomas, R.; Butt, R.; Gaston, J.; McBain, C.; Foster, D. "Effect of leveling agent on surface morphology and gloss of floor polishes." *Proceedings of the International Latex Conference*, Cleveland, OH **2009**.