May 21, 2015

Olga Karagiaridi

Department of Chemistry, Bryn Mawr College • 101 N Merion Ave, Bryn Mawr, PA, 19010 •
okaragiari@brynmawr.edu

EDUCATION

Northwestern University, Evanston, IL (Sep 2010 – Mar 2015)
Ph.D. in Chemistry (cumulative GPA 3.87/4.00)
Thesis title: Synthesis and characterization of metal–organic frameworks (MOFs) that are difficult to access *de novo*.

Kellogg School of Management, Evanston, IL (Jun-Aug 2013)
Kellogg Management for Scientists and Engineers program (certificate)

Dartmouth College, Hanover, NH (Sep 2004 – Jun 2008)
B. A. in Biophysical Chemistry (cumulative GPA 3.88/4.00)

University of Complutense, Madrid, Spain (Sep – Dec 2006)
Dartmouth College Foreign Study Program – Coursework in advanced topics in Spanish culture (cumulative GPA 4.00/4.00)

TEACHING EXPERIENCE

Bryn Mawr College, Department of Chemistry, Bryn Mawr, PA
Lecturer in Chemistry (May 2015 - present)

- Teach an accelerated general chemistry laboratory course offered in summers as part of the Postbaccalaureate Premedical Program. Provide students with a curriculum of laboratory experiments that aims to promote problem-solving skills and improve understanding of fundamental chemistry principles and their applications in the field. Supervise a team of undergraduate and graduate teaching assistants who support the course.
- Teach an organic chemistry laboratory course during the academic year. Deliver laboratory lectures that elucidate the techniques and underlying theory necessary to complete the experiments. Coordinate and consult teaching assistants in instruction and student assessment.

Northwestern University, Department of Chemistry, Evanston, IL
School of Continuing Studies General Chemistry Laboratory Teaching Assistant (Oct – Dec 2014)

- Taught a section of a general chemistry laboratory course aimed towards post-baccalaureate students preparing for medical studies.
- Graded laboratory assignments; educated students in science writing and communication skills.

Northwestern Bridge Program Teaching Assistant (Aug – Sep 2012, Aug – Sep 2013 & Aug – Sep 2014)

- Conducted daily sessions geared towards an intensive review of precalculus and chemistry for small classes (~20 people) of college freshmen students from minority groups.
- Facilitated discussions in order to help students strengthen their problem-solving skills and take responsibility for their education.

Climate Change and Sustainability Workshop (Jun 2012)

- Facilitated a workshop for high school teachers aiming to incorporate climate change education at the high school level.
- Supervised a team of teachers who performed an experiment relevant to the metal–organic frameworks and sustainability research performed in the Hupp research group with the goal to later include it in their lessons. Managed the materials necessary for the experiment.

General Chemistry Head Teaching Assistant (Sep 2010 – Mar 2011 & Jan 2012 – Mar 2012)

- Conducted weekly review sessions (lecture format) and prepared examination materials for general chemistry classes (serving ~900 students).

Teach for America – Houston Independent School District, Sharpstown High School, Houston, TX
High School Chemistry Teacher (Aug 2008 – Aug 2010)

- Worked as an 11th-grade chemistry teacher in a high-poverty, low-income area.
- Prepared and delivered chemistry curriculum (including laboratory) for 360 students.
- Completed the rigorous Teach For America summer institute, which provided training in lesson planning, classroom management and student investment.

Dartmouth College, Department of Chemistry, Hanover, NH
General and Physical Chemistry Teaching Assistant (Jan – Jun 2007 & Jan – Jun 2008)

- Supervised a weekly general chemistry laboratory class.
- Taught general chemistry laboratory techniques while ensuring a safe lab environment. Graded weekly assignments and lab reports and held weekly office hours.
- Supervised physical chemistry laboratory experiments and graded lab reports for a junior-level course in physical chemistry – thermodynamics.

Dartmouth College, Academic Skills Center, Hanover, NH
Peer Tutor in General and Organic Chemistry (Sep 2006 – Jun 2008)

- Provided private tutoring to assist students with preparing for examinations and solving problem sets.

Dartmouth College, Department of Classics, Hanover, NH
Introductory Greek Language Teaching Assistant (Jan – Mar 2005)

- Conducted daily vocabulary and grammar practice drills for beginner Greek students using the Rassias Method® to ensure a process of rigorous and effective learning of the language.

Camp Rising Sun, Stendis, Denmark
Camp Counselor (Jun – Aug 2005)

- Worked at an international invitation-only summer leadership camp for girls from over 30 countries aged 14-17 (previously was selected by my home country to attend the same camp as a student in 2001 and 2002).
- Facilitated the organization of events aimed to educate students about diversity and explore each other's unique culture.

RESEARCH EXPERIENCE

Northwestern University, Department of Chemistry, Evanston, IL
Ph. D. Graduate Student. Advisor: Prof. Joseph T. Hupp (Sep 2010 – Mar 2015)

- Synthesized novel MOFs, which are hybrid crystalline porous materials comprised of metal nodes and organic linkers, employed for gas sorption, gas separation and catalysis, among many other applications. Completed five projects involving MOF synthesis, all of which resulted in first-author experimental publications in peer-reviewed journals with high impact factors.
- Collaborated with research groups in chemistry, chemical engineering and material science departments; provided expertise in MOF synthesis for completion of multidisciplinary projects.
- Maintained four instruments required for MOF synthesis and characterization (ASAP 2020, Tristar II 3020, Quantachrome MasterPrep Degasser and Tousimis Samdri-PVT-3D supercritical CO_2 dryer) to serve the experimental needs of 20 scientists in three research groups. Trained graduate students and postdoctoral fellows to ensure that they are qualified to use the instruments.
- Helped prepare, write and edit research proposals for federally managed grants. Edited many of the manuscripts produced by the Hupp research group for publication in peer-reviewed journals.
- Coauthored four review papers that provide a critical analysis of topics pertaining to the synthesis of MOFs. Led a team comprised of two postdoctoral fellows that worked towards producing a review paper that was successfully published in a high impact journal.

Dartmouth College, Women In Science Project, Hanover, NH
Research intern. Advisor: Prof. Albert Erives (Jan – Jun 2005)
Research project: Gene regulation in the early *Drosophila melanogaster* embryo.

- Extracted genes from *D. melanogaster* and incorporated them into *Anopheles gambiae* embryos to investigate developmental similarities between species.

SKILLS

Laboratory/Technical

- Proficient: solvothermal synthesis, nuclear magnetic resonance spectroscopy (including solid state), mass spectrometry, infrared spectroscopy, ultraviolet/visible spectroscopy, inductively coupled plasma optical emission spectroscopy, powder X-ray diffraction, thermal gravimetric analysis, gas sorption measurements, supercritical CO_2 drying, microwave reactions, air free reaction techniques, column chromatography, organic ligand synthesis.
- Basic: X-ray photoelectron spectroscopy, polymerase chain reaction, gene sequencing, plasmid preparation and insertion into competent cells, DNA analysis and gel electrophoresis.

Software

- Proficient: MestReNova, Mercury, CrystalMaker, ConQuest, ChemDraw, Microsoft Office, EndNote.
- Basic: SHELXTL, ORTEP.

Languages

- Proficient: Russian, Greek, Spanish.
- Basic: German, French.

HONORS AND AWARDS

- *Institute for Sustainability and Energy at Northwestern Cluster Fellowship*, Northwestern University (2013).
- *L. Carroll King Award for Excellence in 100-Level Teaching*, the Alpha Gamma Chapter of Phi Lambda Upsilon Academic Honor Society (2012).
- *Weinberg College Outstanding Graduate Student Teacher Award*, Northwestern University (2011).
- *Basolo Fellowship Award*, Northwestern University (2010).
- *Houston Independent School District ASPIRE Award* (2010 & 2011).
- *Rufus Choates Scholar*; top 5% of Dartmouth College class of 2008 (2008).
- *American Institute of Chemists Foundation Student Award*, Dartmouth College (2008).
- *Chemistry Merck Index Award*, Dartmouth College (2008).
- *Five citations* (awards given by Dartmouth professors to students whose class performance merits acknowledgment that a letter grade fails to explain) for coursework in Writing, Spanish and Physical Chemistry (2005-2008).

PROFESSIONAL AFFILIATIONS

- Phi Lambda Upsilon Honorary Chemical Society (Jun 2012 – present).
- American Chemical Society (Jan 2013 – Jan 2014).
- Phi Beta Kappa Academic Honor Society (Jun 2008 - present).

PUBLICATIONS

1. Deria, P., Bury, W., Hod, I., Kung, C.-W., Karagiaridi, O., Hupp, J. T., Farha, O. K. "MOF Functionalization *via* Solvent-Assisted Ligand Incorporation: Phosphonates vs. Carboxylates". *Inorg. Chem.*, **2015**, *54*, 2185-2192.
2. Karagiaridi, O., Vermeulen, N. A., Klet, R. C., Wang, T. C., Moghadam, P.Z., Al-Juaid, S. S., Stoddart, J. F., Hupp, J. T., Farha, O. K. "Functionalized Defects through Solvent-Assisted Linker Exchange: Synthesis, Characterization, and Partial Postsynthesis Elaboration of a Metal–Organic Framework Containing Free Carboxylic Acid Moieties". *Inorg Chem.*, **2015**, *54*, 1785-1790.
3. Beyzavi, M. H., Stephenson, C. J., Liu, Y., Karagiaridi, O., Hupp, J. T., Farha, O. K. "Metal–Organic Framework-Based Catalysts: Chemical Fixation of CO_2 with Epoxides Leading to Cyclic Organic Carbonates". *Front. Energy Res.*, **2015**, *2*, 63.
4. Madrahimov, S. T., Atesin, T., Karagiaridi, O., Sarjeant, A. A., Farha, O. K., Hupp, J. T., Nguyen, S. T. "Metal–Organic Frameworks Containing Alkynyl Gold Functionalities: A Comparative Evaluation of Solvent-Assisted Linker Exchange, *De Novo* Synthesis and Post-Synthesis Modification". *Cryst. Growth Des.,* **2014**, *14*, 6320-6324.
5. Karagiaridi, O., Bury, W., Fairen-Jimenez, D., Wilmer, C. E., Sarjeant, A. A., Hupp, J. T., Farha, O. K. "Enhanced Gas Sorption Properties and Unique Behavior towards Liquid Water in a Pillared-Paddlewheel Metal–Organic Framework Transmetalated with Ni(II)". *Inorg. Chem.,* **2014**, *53*, 10432-10436.
6. Karagiaridi, O., Bury, W., Sarjeant, A. A., Hupp, J. T., Farha, O. K. "Synthesis and Characterization of Functionalized Metal–Organic Frameworks". *J. Vis. Exp.*, **2014**, *91*, e52094.

7. Deria, P., Mondloch, J. E., Karagiaridi, O., Bury, W., Hupp, J. T., Farha, O. K. "Beyond Post-Synthesis Modification: Evolution of Metal–Organic Frameworks *via* Building Block Replacement". *Chem. Soc. Rev.*, **2014**, *43*, 5896-5912.
8. Karagiaridi, O., Bury, W., Mondloch, J.E., Hupp, J. T., Farha, O. K. "Solvent-Assisted Linker Exchange: An Alternative to the *De Novo* Synthesis of Unattainable Metal–Organic Frameworks". *Angew. Chem. Int. Ed.,* **2014**, *53*, 4530-4540.
9. Mondloch, J. E., Karagiaridi, O., Farha, O. K., Hupp, J. T. "Activation of Metal–Organic Framework Materials". *CrystEngComm,* **2013**, *15*, 9258-9264.
10. Vermeulen, N. A., Karagiaridi, O., Sarjeant, A. A., Stern, C. L., Hupp, J. T., Farha, O. K., Stoddart, J. F. "Aromatizing Olefin Metathesis by Ligand Isolation inside a Metal–Organic Framework". *J. Am. Chem. Soc.,* **2013**, *135*, 14916-14919.
11. Karagiaridi, O., Bury, W., Tylianakis, E., Sarjeant, A. A., Hupp, J. T., Farha, O. K. "Opening Metal–Organic Frameworks vol. 2: Inserting Longer Pillars into Pillared-Paddlewheel Structures through Solvent-Assisted Linker Exchange". *Chem. Mater*., **2013**, *25*, 3499-3503.
12. Lalonde, M.B., Bury, W., Karagiaridi, O., Brown, Z. J., Hupp, J. T., and Farha, O. K. "Transmetalation: Routes to Metal Exchange within Metal–Organic Frameworks". *J. Mater. Chem. A.,* **2013**, *1*, 5453-5468.
13. Karagiaridi, O., Lalonde, M. B., Bury, W., Sarjeant A. A., Farha, O. K., and Hupp, J. T. "Opening up ZIF-8: a Catalytically Active Zeolitic Imidazolate Framework of Sodalite Topology with Unsubstituted Linkers". *J. Am. Chem. Soc.,* **2012**, *134*, 18790-18796.
14. Karagiaridi, O., Bury, W., Sarjeant, A. A., Stern, C., Farha, O. K., and Hupp, J. T. "Synthesis and Characterization of Isostructural Cadmium Zeolitic Imidazolate Frameworks *via* Solvent-Assisted Linker Exchange". *Chem. Sci.,* **2012**, *3*, 3256-3260.
15. Taylor, J. L., Moga, T. G., Karagiaridi, O., Wilcox, D. E., and Pletneva, E. V. "Effects of DNA Binding on the Structural and Redox Properties of the [2Fe-2S] Transcription Factor SoxR". *Chemtracts: Inorg. Chem.,* **2008**, *21*, 336-345.

CONFERENCES AND WORKSHOPS ATTENDED

- *Nanoporous Materials Genome Center All-Hands Meeting* (poster), St. Paul, MN (Oct 2014).
- *American Chemical Society National Meeting an Exposition* (poster), New Orleans, LA (Apr 2013).
- *MOF 2012 3rd International Conference on Metal-Organic Frameworks and Open Framework Compounds* (lecture), Edinburgh, UK (Sep 2012).
- *Oak Ridge National Laboratory Neutron Diffraction and Small Angle Neutron Scattering Workshops*, Oak Ridge, TN (Sep 2011).