

ANNA ZHENOVA

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EDUCATION

University of York

Ph.D., Chemistry

Coursework in green chemistry and sustainable solvents

York, UK

in progress

Carnegie Mellon University

Master of Science, Chemistry

Overall GPA: 3.74

Coursework in sustainable chemistry, organometallic catalysis

Pittsburgh, PA

May 2014

California Institute of Technology

Bachelor of Science, Chemistry

Overall GPA: 3.1

Coursework in inorganic chemistry, organometallic catalysis, advanced spectroscopy

Pasadena, CA

June 2012

RESEARCH EXPERIENCE

Carnegie Mellon University

Research Assistant

Washburn Lab

November 2012 – May 2014

- Worked as part of a multidisciplinary government-funded NETL lab to develop eutectic ionic liquids (ILs) for use in post-combustion CO₂ capture
- Collaborated with engineers to analyze and optimize carbon capture properties of ILs, customizing equipment to measure viscosity, density, heat capacity, and gas uptake
- Worked together with University of Pittsburgh lab to probe ultrafast solvation dynamics in ILs
- Optimized synthetic procedures using green chemistry, reducing energy usage and toxicity

University of Oregon

Summer Undergraduate Research Fellow

Johnson Lab

June – September 2011

- Synthesized a customizable, recyclable self-assembled monolayer on mesoporous supports (SAMMS) using host-guest capabilities of β -cyclodextrin to clean pollutants from water
- Optimized conditions for maximizing β -cyclodextrin attachment to silica

California Institute of Technology

Undergraduate Researcher

Grubbs Group

October 2009 – June 2011

- Synthesized dinuclear chiral cobalt complexes for environmentally benign hydration reactions
- Optimized conditions for liquid chromatographic purification of catalyst
- Mastered Schlenk line techniques for air-free synthesis

Massachusetts Institute of Technology

Summer Undergraduate Research Fellow

Cummins Group

June – August 2009

- Synthesized novel titanium catalysts for inexpensive reduction of CO₂ by pairing various cations with titanium oxoanion
- Mastered glovebox techniques for working with air-sensitive compounds
- Learned assortment of crystallization techniques

PUBLICATIONS

A. Alves Costa Pacheco et al., *ChemSusChem* **2016**, 9, 3503 - 3512, DOI: [10.1002/cssc.201600795](https://doi.org/10.1002/cssc.201600795)

A.S. Ivanova et al., *RSC Adv.* **2015**, 5, 51407-51412, DOI: [10.1039/c5ra06561e](https://doi.org/10.1039/c5ra06561e)

Z. Ren et al., *J. Phys. Chem. Lett.* **2014**, 5, 1541-1546, DOI: [10.1021/jz500372f](https://doi.org/10.1021/jz500372f)

Note: Surname changed from Ivanova to Zhenova in 2016

WORK EXPERIENCE

Global Green Chemistry Centres

Intern

York, UK

May 2016 – May 2017

- Assisted in planning and marketing of annual symposium in China
- Developed and executed strategy for web presence, doubling number of Twitter followers

Green Chemistry and Commerce Council

Green Chemist

Lowell, MA

September 2014 – February 2016

- Managed [project](#) with ACS Green Chemistry Institute to foster collaboration in green chemistry
- Created and populated educational curriculum in green chemistry for professional development
- Developed and managed [internship program](#) to place STEM students in green chemistry positions
- Overhauled [database](#) of green chemistry tools for retailers in order to improve usability
- Assisted in development of [ideal criteria for safer chemical preservatives](#) with industry leaders
- Implemented new project management protocol across organization, increasing efficacy and ease of remote collaboration
- Assisted in conference program development and execution

Network for Early-Career Sustainable Scientists and Engineers

Communications Director

International

July 2014 – November 2015

- Coordinated communication and outreach for [international community of early-career scientists](#)
- Participated in executive board to develop strategic mission and priorities for NESSE through 2020
- Managed [sustainable science blog](#); recruited authors, selected content, and edited articles
- Developed multifaceted marketing strategy, including promotional materials and events
- Ran social media accounts and campaigns to engage and inspire young sustainability researchers

TEACHING EXPERIENCE

Carnegie Mellon University

Teaching Assistant

Prof. Leonard Vuocolo

August – December 2012

- Devised lesson plans and taught introductory chemistry to 70 undergraduates
- Assisted in creation of problem sets and exams

California Institute of Technology

Teaching Assistant

Prof. John Bercaw

September – December 2011

- Taught recitation section, tutored students, and graded assignments in inorganic chemistry
- Personally supervised and assisted with remote coursework of student studying abroad

TECHNICAL STRENGTHS

Synthesis and catalysis

Air- and moisture-free techniques

Density & viscosity measurements

Spectroscopy (UV-Vis, IR, Raman)

Mass spectrometry

Thermal analysis (TGA, DSC)

Environmental toxicology

MATLAB, Mathematica, Python

NMR (¹H, ¹³C, ¹⁹F)

Life cycle analysis

Fluent in Russian

L^AT_EX

REFERENCES

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