# Anastassiya Khan

**Date of birth:** 10/07/1997 **Phone number:** (+33) 0750081476

**Email address:** khananastassiyav@gmail.com

**Work:** SLAC National Accelerator Laboratory, 2575 Sand Hill Rd, 94025 Menlo Park (United States)

## RESEARCH INTERESTS

### Biography

PhD in Physical chemistry. As a part of my thesis, I performed various XAS data analysis related to the characterization of novel non-precious metal catalysts for Oxygen reduction and Hydrogen evolution reactions. I participated in the development of fuel cell and electrolyzer setups for operando XAS measurements at SAMBA beamline. My research interests: spectroscopic characterization of materials, data analysis, and green energy technologies. Main job-related skills: advanced spectroscopy in chemistry (synchrotron-based X-ray techniques as well as various conventional laboratory techniques such as XAS, XRD, TXM), high expertise in XAS data analysis using GNXAS code, XANES simulations using MXAN code.

## EDUCATION AND TRAINING

### PhD in Physical chemistry
***Synchrotron Soleil, SAMBA beamline (under supervision of Dr. Andrea Zitolo)*** [ 12/2020 – 11/2023 ]

**City:** Paris
**Country:** France

### Master degree (M2) in Advanced Spectroscopy in Chemistry with honours (cum laude)
***Alma Mater University of Bologna (under supervision of Prof. Marco Giorgetti)*** [ 09/2019 – 07/2020 ]

**City:** Bologna
**Country:** Italy

### Master degree (M1) in Advanced Spectroscopy in Chemistry
***University of Lille*** [ 09/2018 – 07/2019 ]

**City:** Lille
**Country:** France

### Bachelor degree in Chemical Engineering with honours
***Kazakh-British Technical University*** [ 09/2014 – 06/2018 ]

**City:** Almaty
**Country:** Kazakhstan

Major – Chemical Technology of Organic Compounds

## WORK EXPERIENCE

### Intern
***Chimica Analytica Laboratory , Department of Industrial Chemistry, University of Bologna*** [ 11/2019 – 06/2020 ]

**City:** Bologna
**Country:** Italy

*synthesis and characterization of defective prussian blue analogues (PBA) electrode materials using X-Ray techniques(XRD,XAS,TXM)*

### Intern
***Internship in Laboratory of Organometallic and Medicinal Chemistry, EPFL*** [ 06/2017 – 09/2017 ]

**City:** Lausanne
**Country:** Switzerland

*development and synthesis of ligands for metal-organic framework for catalytic $CO_2$ conversion; cytotoxicity research of new ionic liquids/compounds*

**Intern**
***Laboratory of organic synthesis, A.B. Bekturov Institute of Chemical Sciences*** [ 12/2015 – 06/2018 ]

**City:** Almaty
**Country:** Kazakhstan

*synthesis of biologically active ionic liquids/ ionic compounds*

## LANGUAGE SKILLS

Mother tongue(s): **Russian**

**Other language(s):**

**English**

**LISTENING** C2 **READING** C2 **WRITING** C2

**SPOKEN PRODUCTION** C2 **SPOKEN INTERACTION** C2

**French**

**LISTENING** A2 **READING** A2 **WRITING** A2

**SPOKEN PRODUCTION** A2 **SPOKEN INTERACTION** A2

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## PUBLICATIONS

**Operando XAS Investigation of Bimetallic Iron−Molybdenum Sulfide Electrocatalysts for the Hydrogen Evolution Reaction**

[2023]

in process to be submitted

**Anastassiya Khan**, Adina Morozan, Vincent Artero, Andrea Zitolo

**Structural and Reactivity Effects of Secondary Metal Doping into Iron-Nitrogen-Carbon Catalysts for Oxygen Electroreduction**

[2023]

Journal of American Chemical Society, 145, 27, 14737–14747

Fang Luo, Aaron Roy, Moulay Tahar Sougrati, **Anastassiya Khan**, David A. Cullen , Xingli Wang, Mathias Primbs, Andrea Zitolo, Frédéric Jaouen and Peter Strasser

**Multi-atom Pt and PtRu catalysts for high performance AEMFCs with ultra-low PGM content**

[2023]

Applied Catalysis B: Environmental, Volume 325, 122375.

Horie Adabi, Abolfazl Shakouri, Andrea Zitolo, Tristan Asset, **Anastassiya Khan**, Jasmine Bohannon, Raphaël Chattot, Christopher Williams, Frédéric Jaouen, John R. Regalbuto, William E. Mustain.

**High loading of single atomic iron sites in Fe–NC oxygen reduction catalysts for proton exchange membrane fuel cells**

[2022]

Nature Catalysis, 5, 311–323

Asad Mehmood, Mengjun Gong, Frederic Jaouen, Aaron Roy , Andrea Zitolo, **Anastassiya Khan** , Moulay-Tahar Sougrati , Mathias Primbs , Alex Martinez Bonastre , Dash Fongalland , Goran Drazic , Peter Strasser , Anthony Kucernak

## CONFERENCES AND SEMINARS

**244th Electrochemical Society Meeting (ECS) Meeting**

[ Gothenburg, Sweden, 08/10/2023 – 12/10/2023 ]

*Oral presentation entitled «Operando XAS investigation of Bimetallic Iron−Molybdenum Sulfide Electrocatalysts for the Hydrogen Evolution Reaction in Proton Exchange Membrane Electrolyzers»*

**Soleil User Meeting 2023**

[ Saint-Aubin, France, 18/01/2023 – 20/01/2023 ]

*Oral presentation entitled «Operando XAS investigation of Bimetallic Iron−Molybdenum Sulfide Electrocatalysts for the Hydrogen Evolution Reaction in Proton Exchange Membrane Electrolyzers»*

**18th International Conference on X-Ray Absorption Fine Structure 2022**

[ Sydney, Australia, 10/07/2022 – 15/07/2022 ]

*Poster presentation entitled «Operando XAS investigation of Bimetallic Iron−Molybdenum Sulfide Electrocatalysts for the Hydrogen Evolution Reaction in Proton Exchange Membrane Electrolyzers»*

**Collaborative Network for X-Ray Spectroscopy (CONEXS) workshop/conference 2022**

[ Newcastle University, Newcastle upon Tyne, United Kingdom, 28/03/2022 – 01/04/2022 ]

*Poster presentation entitled «Bimetallic M-N-C Catalysts for Oxygen Reduction Reaction in Proton Exchange Membrane Fuel Cells: an operando X-ray absorption study»*

**Soleil User Meeting 2022**

[ Saint Aubin, France, 20/01/2022 – 21/01/2022 ]

*Poster presentation entitled «Bimetallic M-N-C Catalysts for Oxygen Reduction Reaction in Proton Exchange Membrane Fuel Cells: an operando X-ray absorption study»*

## HONOURS AND AWARDS

- **Best poster prize at CONEXS workshop 2022**
- **Advanced Spectroscopy in Chemistry (ASC) Erasmus Mundus master degree full scholarship 2018-2020**
- **"Science and Education Shakhmardan Yessenov Foundation" Summer Research scholarship 2017**
- **Chevron Corporation scholarship 2017**
- **Overseas Korean Foundation scholarship 2016**
- **Gold Medal in Kazakhstan National Chemical competition 2014**

## SCHOOLS AND WORKSHOPS

**ENGINE 2023 school on theoretical and practical training related to electrochemistry for energy applications, Grenoble Institute of Technology/ESRF synchrotron**

[ 11/04/2023 – 14/04/2023 ]

**e-SPARK International Summer School on experimental electrochemistry, Warsaw Institute of Physical Chemistry**

[ 18/09/2022 – 24/09/2022 ]

**CONEXS workshop on Quantum Espresso/FDMNES programs, Newcastle University in collaboration with Diamond Light Source**

[ 28/03/2022 – 01/04/2022 ]

**1st online School on Synchrotron Radiation Gilberto Vlaic: Fundamentals, Methods and Application, The Italian Society of Synchrotron Radiation (SILS) in collaboration with ELETTRA-Synchrotron**

[ 13/09/2021 – 17/09/2021 ]