Katherine (Katya) Poliektova

Irvine | (408) 839-1359 | katherine.poliektova@gmail.com
English, Russian

EDUCATION

University of California, Irvine **Aug. 2024 – expected Jun. 2028**

B.S. Chemical Engineering, GPA 3.8

PUBLICATION

Lim, C., Fairhurst, A. R., Jun, M., Mackowicz, F., Dutta, S., **Poliektova, K.**, Haering, D., & Stamenkovic, V. R. (2026). *High-precision synthesis and electrochemistry of Pt nanoparticles.* Journal of Materials Chemistry A. https://doi.org/10.1039/d6ta00641h

RESEARCH

Researcher – Stamenkovic Lab, Irvine, CA **Feb. 2025 – Present**

- Conducted electrochemical characterization of hydrogen fuel cell catalysts using rotating disk electrode (RDE) techniques to evaluate catalytic efficiency and surface properties.
- Processed and visualized electrochemical data using Origin to interpret catalyst performance trends and surface reaction characteristics.
- Awarded UROP fellowship and funding for research on platinum-tungsten thin film catalysts, focusing on design and electrochemical evaluation of catalytic surfaces, later presented research at the 2026 UROP Symposium.
- Designed and fabricated thin film catalysts using physical vapor deposition (PVD) sputtering, controlling deposition and treatment parameters to tune composition and morphology.
- Presented research on platinum–cobalt and platinum-tungsten catalysts at the UCI Chemical & Biomolecular Engineering 2025 and 2026 Research Symposiums, respectively.

WORK EXPERIENCE

Energy Efficiency Engineer – Calit2, Irvine, CA **Jan. 2026 – Present**

- Conducted site-visits of clients, analyzing efficiency of equipment and meticulously documenting avenues for energy saving opportunities.
- Utilized client information and site-visit notes to write engineering reports with recommendations for clients, evaluating energy and cost savings and productivity improvements.
- Developed new report writing strategies and initiated projects and wrote guides (VERIFI tool, Combustion analyzer, utility compiler python script) to aid future assessments.

PROJECTS

Team Lead, Member – Chem-E-Car, Irvine, CA **Jan. 2025 – May 2026**

- Led design and fabrication of a custom lead-acid battery system powering Chem-E-Car competition vehicle, managing a team of chemical engineers.
- Implemented electrode manufacturing and electrodeposition procedures to improve electrode uniformity and charge – discharge performance.
- Performed vigilant testing and performance analysis to diagnose insufficiencies and evaluate capacity, efficiency, and degradation behavior.
- Evaluated electrode materials, electrolyte composition, and separator selection to optimize electrochemical performance.
- Maintained safe electrical connections, insulation, and circuit protection systems.
- Completed safety documentation and presented battery design, operation, and hazard analysis during competition poster session and judging review.

Test Engineer – Spacecraft Thermal Management Systems, Irvine, CA **Sept. 2025 – March 2026**

- Synthesized a novel PMMA–lithium perchlorate gel electrolyte for a variable-emissivity device used in compact satellite thermal management.
- Redesigned the gel testing protocol after previous electrochemical impedance spectroscopy (EIS) data proved illegible, introducing new electrode configurations and optimized parameters that finally enabled clear, analyzable impedance spectra, breaking a major project barrier.
- Interpreted newly legible EIS data for material characterization to quantify ionic conductivity, resistance, and charge-transfer, guiding improvements to gel formulation and processing.