

Anthony Katona

Experience & Education

The Pennsylvania State University

Chemistry (State College, PA)

2023-current

Post-doc

-  developed procedure for novel laser processing of pre-ceramic polymers & design of ultra-fast blackbody thermometer with *Dr. Benjamin Lear* in a 6-group MURI project

The Pennsylvania State University

Chemistry (State College, PA)

2023

PhD

-  synthesized ultra-fast/nano-scale thermal transport materials; developed photo-thermal polymer techniques for coatings & 3D-printing applications with *Dr. Benjamin Lear*

-  oversaw lab safety as General Safety Officer & Laser Safety Officer

-  managed supply & maintenance of pumps, gas cylinders, and gloveboxes

-  taught as TA for all 5 first year chemistry courses for a total of 7 semesters

-  co-developed & implemented novel thermal conductivity undergraduate lab experiments for *Dr. Bratoljub Milosavljevic*'s physical chemistry course

-  served as graduate student TA mentor for 1/3 of class & research mentor for 5 undergraduate researchers, teaching experimental design, instrument use, scripting, and data analysis

Susquehanna University

Biochemistry; Physics minor (Selinsgrove, PA)

2015

BS

-  synthesized transition metal Janus complexes with *Dr. William Doughtery*

-  trained galaxy classification model in computational summer research with *Dr. Violet Mager*

Technical Skills

-  **spectroscopy:** NMR, IR, UV-Vis

-  **microscopy:** AFM, TEM (STEM, EDS)

-  **materials:** mechanical (UTM, DMA) & thermal (DSC, TGA, TPS) tests; lathes, mills, 3DP, engravers

-  **laser:** class IV CW/pulsed safety, handling, optics

-  **electronics:** circuit design/prototyping, signal analysis, micro-controllers

-  **languages:** Python, C#, C++, LabVIEW, Blueprints, HTML, CSS, JS, LaTeX, markdown

-  **3D:** Blender (modeling, sculpting, rigging, animating, shading, VFX, compositing), Unreal Engine

-  **misc. software:** Adobe CC (Ae, Il, Ps, Pt, Pr), FL Studio, ImageJ, WEKA segmentation, Veusz

External Resources

reference: Dr. Mary Jo Bojan (TA Supervisor) - bz6@psu.edu

publications:

- A Katona & B Lear, 2025. J. Phys. Chem. C, “**Photothermal Curing of Polydimethylsiloxane: Carbon Black Composites Results in Changes to Polymer Topography, Cross-Link Density, and Mass Density**”
- A Blasone *et al*, 2025. “**Rapid Photothermal Curing of PDMS on Paper**”
- S Phillips *et al*, 2025 (review). Indust. Chem. & Mat, “**Nanometer-Scale Surface Roughness...**”
- A Katona & B Lear, 2024. Macromol., “**Effective photothermal curing of PDMS using ultra-low loadings of carbon black**”
- V Mager *et al*, 2018, ApJ 864 “**Galaxy Structure in the Ultraviolet...**”

portfolio: frkatona.github.io