Anthony Katona

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Experience & Education

The Pennsylvania State University
2023-current

Chemistry (State College, PA) Post-doc

- developed procedure for novel laser processing of pre-ceramic polymers & design of ultra-fast blackbody thermometer with *Dr. Benjamin Lear*

The Pennsylvania State University
2023

Chemistry (State College, PA) 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
2015

Biochemistry; Physics minor (Selinsgrove, PA) 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, ChatGPT

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 Polydimethyldisiloxane: 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