

Hongda Su

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Education

University of Science and Technology of China

Aug. 2023 – Present

Department of Thermal Science and Energy Engineering

- **Major:** Energy and Power Engineering
 - **Minor:** Chemistry
 - **GPA: 3.77/4.30** (Major Ranking 1/42)
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Honors and Awards

- Wu Zhonghua Talent Program Scholarship Nov. 2025
 - CAS Guangzhou Institute of Energy Conversion Scholarship Oct. 2024
 - Outstanding Freshman Scholarship Dec. 2023
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Research Experience

Design of a Thermal Metastructure for Thermal Camouflage

Jun. 2025 – Present

with Prof. Liqun He (School of Engineering Science, USTC, China)

- Proposed and validated a method of designing **thermal metamaterials** to reshape heat sources during transient heat conduction
 - Performed thermal field transformation using Coordinate Transformation Theory
 - Developed 3D models and conducted the FEA simulations with **COMSOL Multiphysics** and **Matlab**
 - Experimentally verified the design's feasibility and efficiency with metallic 3D-printed prototypes.
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Design of a AuNP-DNA Structure for Targeted Cell Killing

Feb. 2025 – Jun. 2025

with Prof. Tao Li (School of Chemistry and Materials Science, USTC, China)

- Devised a functionalized DNA structure for selective cancer-cell recognition, uptake and triggering cell apoptosis based on the TfR-mediated endocytosis and the affinity between paired i-motifs
 - Conducted an extensive literature review and group discussions to deepen understanding of Nucleic Acid Chemical Biology
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Catalytic Efficiency of Metal Oxides in Activating Persulfates

Jul. 2024 – Dec. 2024

with Dr. Wan Li (School of Chemistry and Materials Science, USTC, China)

- Compared the catalytic efficiencies of various metal oxides with characterized morphologies in peroxymonosulfate(PMS)-based and peroxydisulfate(PDS)-based advanced oxidation processes(AOPs)
 - Characterized various metal oxides with scanning electron microscope(**SEM**) and X-ray diffraction(**XRD**), including synthesized Cu₂O nanospheres and nanocubes
 - Monitored the reaction process via **UV-Vis spectrophotometry**, with Rhodamine B as the substrate
 - Processed and visualized the experimental data, providing convincing interpretations of the results
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Research Interests

- Thermal metamaterials and heat-transfer control
 - Computational modeling and 3D model development
 - Interdisciplinary research across thermal physics, chemistry, and materials science
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Skills

- **English Tests:** TOEFL 99 (MyBest 101)
- **Programming:** C/C++, Matlab, LaTeX, bash
- **Software:** Solidworks, Origin, COMSOL, Auto CAD, Lammmps, ChemDraw, Jade, ImageJ