

Education

University of Science and Technology of China	SKLFS	Master	Since 2023.09
Oklahoma State University (USA)	FPSET	Bachelor	2022.06-2023.06
Southwest Jiaotong University	Safety Engineering	Bachelor	2019.09-2022.06

- **Research Direction:** Multimodal intelligent sorting and safety assessment of retired batteries

Research

CAS Project for Young Scientists in Basic Research (YSBR-098)

- **Content 1:** Rapid Sorting of Retired Lithium-Ion Batteries Using Novel Aging Feature Extraction and a Two-Step Classification Method 2024.02 to 2024.09
 - ✓ Work: Set **420** lithium-ion batteries aging database, proposed a fast feature extraction method and developed a retired battery sorting method by SVM, achieving **98.1%** high-precision result.
- **Content 2:** Thermal runaway prediction for retired batteries Since 2024.09
 - ✓ Work: Conducted adiabatic thermal analysis of lithium-ion batteries; A cross-scale deep learning model integrating macro/micro data will be established to predict thermal runaway temperature curves accurately.

Early Warning of Thermal Runaway in LIBs Based on Electrochemical Impedance Spectroscopy

- **Content 3:** Thermal runaway prediction for lithium-ion batteries Since 2024.09
 - ✓ Work: Collected electrochemical impedance data under various conditions; A temperature-impedance model will be built, and a battery management system integrated early warning algorithm will be developed.
- **Content 4:** Heat of combustion experiment for Electric Vehicles 2024.12
 - ✓ Work: Managed temperature and gas monitoring setup, calibrated infrared thermal imaging, recorded thermal runaway in real-time, and handled post-experiment equipment reset and site management.

Achievements

- ✓ Patent: A SVM-based fast sorting method for retired lithium-ion batteries (*Student First Inventor*)
- ✓ Paper 1: *Journal of Power Sources*, Peer review (JCR Q1, First author)
- ✓ Paper 2: *Renewable Energy*, Peer review (JCR Q1, Co-author)
- ✓ Paper 3: *11th International Seminar on Fire and Explosion Hazards*, Abstract accepted (Co-author)
- ✓ Personal website development: <https://jackwu.com.cn>

International Conferences

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|---|---------|---------|
| The 3rd International Symposium on Lithium Battery Fire Safety | Qingdao | 2023.08 |
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- ✓ Responsible for itinerary coordination and academic communication: Marco Frank (Section Manager, TÜV), Jonna Hynynen (Senior scientist, RISE Research Institutes of Sweden) and others
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|---|-------|---------|
| 3rd International Conference on Loss Prevention, Process Safety, and Thermal Analysis in Chemical and Coal Industries | Hefei | 2024.03 |
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- ✓ Facilitated international expert receptions and communication: Imre M Szilágyi (Editor-In-Chief, Journal of Thermal Analysis and Calorimetry), ahmed Mebarki (Full Professor of University Gustave Eiffel)

Prizes

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| China Undergraduate Mathematical Contest in Modeling National Second Prize (Top 2.6%) | 2021.11 |
| China National Scholarship (Top 0.2%) | 2021.12 |
| First-class Certificate for All-round Development (Provincial-level award) | 2021.12 |
| Excellent member of the Communist Youth League (University-level award) | 2024.04 |

