

# YANG YANG, PH.D.

+46 701606864 | dr.yaaang@icloud.com | [Linkedin.com/in/yaaang](https://www.linkedin.com/in/yaaang) | [Github.com/Y-Yaaang](https://github.com/Y-Yaaang) | ORCID 0009-0008-5839-0263

## WORK EXPERIENCE

### TRATON Group (formerly Scania)

Researcher – Battery Safety

Södertälje, Sweden

November 2021 – Present

- Led safety testing in pre-development with a focus on thermal runaway for 46xx cylindrical cells.
- Simulate thermal runaways and thermal propagation with computational 3D modeling.
- Pioneered cost-effective methods for battery thermal runaway analysis and multidimensional safety evaluation.
- Developed numerical model of heat flow during thermal runaway propagation, proposed strategic cooling solutions.

### Test Engineer for Engine Valve System

August 2019 – November 2021

- Specified valve components for durability testing, including valves, valve seat inserts, valve guides, valve springs and valve stem seals, inspected valve parts after test, maintained requirements for quality validation.
- Led RCA of part failures from testing and customer feedback, coordinating engine disassembly, wear measurement, lab tests, and technical meetings.
- Established database to archive field and engine test data, contributed to the nomination of valve components.

### Master Thesis Intern - Materials Technology

February 2019 – August 2019

- Measured residual stresses with non- and semi-destructive techniques in cast components with complex geometries.
- Compared measurement techniques with computational simulations to validate residual stress analysis.

## EDUCATION

### Uppsala University – Ångström Laboratory

Ph.D. Materials Chemistry, specializing in Li-ion battery safety

Uppsala, Sweden

December 2021 – November 2025

### KTH Royal Institute of Technology

M.Sc. Engineering Materials Science

Stockholm, Sweden

August 2017 – August 2019

### Technical University of Munich

Exchange M.Sc. Mechanical Engineering

Munich, Germany

September 2018 – March 2019

### Soochow University

B.Eng. Metallic Materials Engineering

Suzhou, China

August 2013 – June 2017

## CONFERENCE PRESENTATIONS

### International Meeting on Lithium Batteries (IMLB)

A Cost-effective Method of Analyzing Thermal Runaways of Li-ion Battery through Thermocouples

Hong Kong

June 2024

### Batteris Sweden (BASE) Annual Meeting

Battery Safety Testing and Characterization with Multidimensional Sensors

Uppsala, Sweden

April 2024

### Nordic International Seminar for Materials Process

3D Investigation of Nonmetallic Inclusion Morphology in Steel using Electrolytic Extraction

Helsinki, Finland

November 2018

## SKILLS & PROFICIENCIES

**Computer:** Microsoft Office, Python, MATLAB, COMSOL Multiphysics

**Technical skills:** Agile Development (JIRA), Root Cause Analysis (RCA), Data Analysis

**Languages:** English (professional), Chinese (native), Swedish (conversational), Cantonese (proficient), German (basic)

## PATENT

- [1] Yang Yang, David Raymand, Carl Tengstedt, and Jimmy Pham. "An innovative solution for thermal propagation" *Patent- och Registreringsverket*

### Publications

- [1] **Yang Yang**, et al. "A cost-effective alternative to accelerating rate calorimetry: Analyzing thermal runaways of lithium-ion batteries through thermocouples." *Journal of Power Sources* 612 (2024): 234807.
- [2] **Yang Yang**, et al. "Investigating the effect of packing format on  $\text{LiNi}_x\text{Co}_y\text{Mn}_z\text{O}_2$  lithium-ion battery failure behavior based on multidimensional signals." *Journal of Power Sources* 614 (2024): 234994.
- [3] Ola Willstrand, **Yang Yang**, et al. "Lab-scale versus industrial-scale thermal runaway tests for lithium-ion battery cells." *Journal of Energy Storage* 129 (2025): 117275.
- [4] **Yang, Yang**, et al. "Modeling the Interplay between Aging and Thermal Runaway Propagation in Large-format Lithium-Ion Batteries." *Journal of Power Sources Advances* 38 (2026): 100203.
- [5] Kuijie Li, Li Wang, **Yang Yang**, et al. "Investigation on Feasibility of Expansion Force as Early Warning Signal for Safety Failure of Batteries Under Common Trigger Scenarios" *eTransportation* (submitted: ETRAN-D-24-00338)
- [6] **Yang, Yang**, et al. "Mapping Heat Flow in Prismatic Battery Modules During Thermal Runaway Propagation Using Empirical Data" *Batteries & Supercaps*
- [7] **Yang, Yang**. "Thermal Runaway in Large-Format Lithium-Ion Batteries: Experimental, Diagnostic, and Modeling Approaches for Safer Battery Design." PhD diss., Acta Universitatis Upsaliensis, 2025.

### Academic Service

- Peer reviewer: *Journal of Power Sources*; *Journal of Power Sources Advances*; *Energy Storage Materials* (Elsevier)
- Supervise Master's thesis on Safety Characterization of Li-ion Batteries
- Guest lecturer on M.Sc. Renewable Electricity Production, Uppsala University