

YANG YANG, PH.D.

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WORK EXPERIENCE

TRATON Group (formerly Scania) Researcher – Battery Safety	Södertälje, Sweden November 2021 – Present
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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 & ACADEMIC SERVICE

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