

Eric Schultz is a Staff Consultant for Engineering Systems Inc. (ESi) in the Thermal: Electrical practice group. He conducts forensic investigations and root-cause analyses involving electrical fires, lithium-ion batteries and battery energy storage systems (BESS), solar photovoltaic (PV) systems, electronic products, printed circuit boards, and electrical power and control equipment. His battery experience spans consumer products to utility-scale energy storage systems, including cell teardowns, charge-discharge testing, module and pack level testing, including evaluations at the cell, module, pack, rack, enclosure, and battery management system levels. He evaluates physical evidence, circuits, components, system documentation, operating records, and test results in technical, insurance, and legal matters.

Prior to joining ESi, Mr. Schultz worked in aerospace circuit design and component engineering. His experience includes circuit-card design and integration, component selection, qualification, derating, failure analysis, and aerospace environmental and reliability testing.

Education

BS, Electrical Engineering. Brigham Young University, Provo, UT. 2020

AS, Utah Valley University, Orem, UT. 2014

Licenses & Certifications

- State of Texas F.E. License 24-171-75
- Transportation Worker Identification Credential (TWIC®)
- NAFI Certified Fire and Explosion Investigator (CFEI)
Certificate #29020-17567

Positions Held

Engineering Systems Inc., Houston, Texas

- Staff Consultant, 2023 – Present

Parker Aerospace, Fort Worth, Texas

- Electrical Engineer – Circuit Design, 2022–2023

Contact Information

emschultz@engsys.com

(832) 403-2052

ESi Houston

18500 Trails End Road
Conroe, TX 77385

Areas of Specialization

- Electrical Devices
- Batteries
- Solar Energy
- Electrical Power Systems
- Controls & Software

Lockheed Martin, Arlington, Texas

- Electrical Engineer - Components, 2020–2022

Raytheon Missile System, Tucson, Arizona

- EE Intern, 2019

Professional Affiliations/Honors

Institute of Electrical and Electronics Engineers (IEEE)

- Member, 2024 – Present

National Association of Fire Investigators (NAFI)

- Member, 2024 – Present

IEEE Product Safety Engineering Society (PSES)

- Member, 2025 – Present

Representative Project Experience

Investigations

Batteries and Energy Storage Systems

- Investigated residential fires involving lithium-ion consumer electronics and power tools.
- Investigated fires and failures at utility-scale battery energy storage facilities.
- Conducted battery cell teardowns and charge-discharge characterization.
- Performed module- and pack-level electrical testing and failure analysis.
- Evaluated battery systems at the cell, module, pack, rack, enclosure, and BMS levels.
- Assessed electrical, thermal, mechanical, control, and protection-system factors affecting failure initiation and propagation.
- Casework includes incidents with losses ranging from \$20,000 to over \$1 billion.

Solar Failures

- Investigated fires involving commercial rooftop solar photovoltaic systems.
- Investigated inverter and rapid shut down device failures.
- Evaluated a solar photovoltaic array and associated electrical equipment for wildfire causation.
- Investigated serial equipment defects and associated lost production at a solar farm.

Windmill Fires

- Investigated windmill nacelle fire.

Transformers

- Investigated transformer damages at manufacturing facilities.

Electric Shock

- Investigated electric shock events related to utility power distribution, commercial electrical repairs, and system installations.
- Evaluated compliance with electrical safety standards and fault conditions.

Design and Operational Experience

PCBA Analysis – Root Cause

- Diagnosed root causes of recurrent PCB failures in consumer electronics and medical devices.
- Developed engineering solutions and design modifications to mitigate future failures and enhance product safety and reliability.

Publications

"MOV Thermal Runaway Features: Fire Cause vs. Effect," **E. M. Schultz**, L. F. Bilancia, T. R. Nagourney, K. G. Cline, P. R. Ritchie and D. R. Muller, *2026 IEEE International Symposium on Product Compliance Engineering (ISPCE)*, Boston, MA, USA, 2026, pp. 1-7, doi: 10.1109/ISPCE69557.2026.11591488.

"Metal Oxide Varistors in Fires: Cause v Fire Victim," L.F. Bilancia, P.R. Ritchie, **E.M. Schultz**, and K.G. Cline, *Proceedings of the 2025 IEEE International Symposium on Product Compliance Engineering*, pp. 1–7, doi:10.1109/ISPCE64260.2025.11044895, 2025.

"Design, Risk, and Efficacy While Testing to Standards: Tradeoffs for Surge Protective Devices," **E.M. Schultz**, L.F. Bilancia, and T.J. Bajzek, *Proceedings of the 2024 IEEE International Symposium on Product Compliance Engineering*, pp. 1–6, doi:10.1109/ISPCE61193.2024.1054114, 2024.

Presentations

"MOV Thermal Runaway Features: Fire Cause vs. Effect" **Eric M. Schultz**, Daniel R. Muller, ISPCE Boston, MA, May 2026.

"Throwing Down the Gauntlet: Confronting Battery Failures in the Glovebox," **Eric M. Schultz**, Jessica Crosby, Brian M. May, ISPCE Boston, MA, May 2026.

"When Sparks Fly: Electrical Fire Risks, Failure Modes, Demonstrations, and More," **Eric M. Schultz**, SPCE Portland, OR, November 2025.

"Metal Oxide Varistors in Fires: Cause v Fire Victim," **Eric M. Schultz** and L.F. Bilancia, *International Symposium on Product Compliance Engineering*, San Francisco, CA, May 2025.

“Design, Risk, and Efficacy While Testing to Standards: Tradeoffs for Surge Protective Devices,” **Eric M. Schultz**, L.F. Bilancia, and T.J. Bajzek, International Symposium on Product Compliance Engineering, Chicago, IL, April 2024.