



Daren Slee, P.E., CFEI

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PROFESSIONAL PROFILE

Daren is a well-known expert in battery failure analysis and has performed many failure analyses of lithium-ion batteries, as well as failure analyses and general analyses of batteries of other chemistries including nickel metal hydride, lead acid, nickel iron, zinc-air, and vanadium redox. Daren's experience includes printed circuit board failure analysis focused on electrical insulation and poor circuit design. He is familiar with the many possible root causes of insulating material failures, from degradation due to long-term heating or humidity, conductive anodic filament formation, and electrical component failure. He also has experience in failure analysis of other electrical insulating systems that lead to overheating. Daren has expertise in testing electronic systems for safety and functionality. He has performed many investigations focused on reliability and is very familiar with the tools of reliability engineering including failure modes and effects analysis (FMEA), mean time between failure (MTBF) calculations, single (and double) points of failure (SPOF) analysis, and parts derating evaluation.

POSITIONS

Brillouin Consulting
Principal Engineer

Portland Area, OR
Jun 2025 - Present

Lead expert in electronic devices, electrical systems, control systems, Li-ion battery controls and protection, and fire origin and cause matters. Substantial litigation experience in electrical related matters. Daren specializes in battery design, protection, and failure analysis; hazard and operability studies; failure modes and effects analysis (FMEA); inverter systems; green energy systems; electrical failure analysis; preproduction circuit safety and functional analysis and testing; reliability engineering; electrical arc flash explosion investigation; utility power and transformer failure analysis; electrocution investigations; printed circuit board and electrical component failure analysis; and fire cause analysis. Daren also specializes in the following areas: battery engineering, including battery energy storage systems (BESS) and electric vehicle (EV) batteries; circuit board failure analysis; failure calculations; single points of failure analysis; parts derating evaluation; household wiring; utility substations; and high voltage systems and transformers.

Engineering Systems Inc.
Senior Managing Consultant

Clackamas, OR
Nov 2021 - Jun 2025

Exponent
Senior Managing Engineer

Portland, OR
Apr 2018 - Nov 2021

Jensen Hughes
Senior Electrical Engineer

Portland, OR
Sep 2016 - Apr 2018

Exponent
Senior Managing Engineer

Menlo Park | Los Angeles, CA
Feb 2000 - Aug 2016

ACADEMIC CREDENTIALS

San Jose State University
Bachelors of Science, Electrical Engineering

San Jose, CA
1999

LICENCES & CERTIFICATIONS

- Professional Engineer, CA (17506)
- Professional Engineer, OR (93318PE)
- Professional Engineer, WA (56017)
- Certified Fire & Explosion Investigator (#18758-10421)

PROFESSIONAL AFFILIATIONS

- IEEE Institute of Electrical and Electronics Engineers, Senior Member (No. 40288467)
- Elected Member of the Board of the IEEE Product Safety Engineering Society January 1, 2018 to December 31, 2020
- Chair of the SPCE 2020 Virtual conference arranged by the Product Safety Engineering Society
- Participated in the 2008 revision of the IEEE Std 1625 IEEE Standard for Rechargeable Batteries for Multi-Cell Mobile Computing Devices, IEEE Power & Energy Society, Sponsored by the Stationary Batteries Committee

BOOK CHAPTERS

- Horn Q., Hayes T., Slee D., White K., Harmon J., Godithi R., Wu M., Megerle M., Singh S., Mikolajczak C. Linden's Handbook of Batteries, Fourth Edition, Appendix H: Methodologies for Battery Failure Analysis. Edited by Thomas B. Reddy, 2011.

PUBLICATIONS | PRESENTATIONS

- Slee D. Resistive Propagating Printed Circuit Board Faults. Presentation to 2016 IEEE Symposium on Product Compliance Engineering, May 2016.
- Slee D. Resistive Propagating Printed Circuit Board Faults. Presentation by invitation at Tesla Motors, Palo Alto, CA, March 2016.
- Bosco J., Tanaka Z., Ott B., Slee D. The efficacy of fire-fighting foams for disrupting power generation from silicon solar panels. 2015 IEEE Photovoltaic Specialist Conference (PVSC), New Orleans, LA, June 14–19, 2015.
- Slee D. Failure Mode & Effects Analysis (FMEA) methods and accelerated testing concepts. Presentation to 2015 IEEE Symposium on Product Compliance Engineering, May 2015.
- Slee D. Failure Mode & Effects Analysis (FMEA) methods and accelerated testing concepts. Presentation to Product Safety Engineering Society San Diego Chapter, December 2014.
- Slee D. Failure Mode & Effects Analysis (FMEA) methods and accelerated testing concepts. Presentation to 2014 Testing and Certification Conference, organized by the School of Science and Technology, The Open University of Hong Kong, November 2014.
- Ibrahim Z., Stepan J., Slee D., Reza A. Forensic examination, and failure analysis of a 220 MV step-up transformer fire. Proceedings of ASME International Mechanical Engineering Convention & Exposition 2013, San Diego CA, November 15–21, 2013.
- Slee D. Lithium-ion & lithium polymer batteries. Presentation to 2013 IEEE Symposium on Product Compliance Engineering, October 2013.
- Slee D. Lithium-ion & lithium polymer batteries. Presentation to Product Safety Engineering Society Orange County Chapter, July 2012.
- Slee D. Lithium-ion & lithium polymer batteries. Presentation to Product Safety Engineering Society San Diego Chapter, May 2012.
- Slee D. Battery standards, regulations and beyond. Presentation at MicroPower Seminar, January 2012.
- Slee D. Introduction to printed circuit board failures. Presentation to 2009 IEEE Symposium on Product Compliance Engineering, October 2009.

- Slee D., Stepan J., Wei W., Swart J. Introduction to printed circuit board failures. Proceedings, 2009 IEEE Symposium on Product Compliance Engineering, Product Safety Engineering Society, October 2009.
- Slee D., Loud J., Swart J. Arcing and fires. Proceedings, 2009 IEEE Symposium on Product Compliance Engineering, Product Safety Engineering Society, October 2009.
- Slee D. Arcing and fires. Presentation to 2009 IEEE Symposium on Product Compliance Engineering, October 2009.
- Swart J., Slee D. Failure analysis methodology for battery powered product incidents. Presentation to 2008 IEEE Symposium on Product Compliance Engineering, October 2008.
- Swart J., Slee D., Hu X. Failure analysis methodology for battery powered product incidents. Proceedings, 2008 IEEE Symposium on Product Compliance Engineering, Product Safety Engineering Society, October 2008.
- Slee D. Presentation to the California Conference of Arson Investigators on battery safety issues and failure analysis; presentation included information on electrical circuit concerns and battery exothermic reactions, March 2008.
- Slee D., Martin R.J., Christiansen E. Vehicle, and vessel fires: When to retain an engineer. International Association of Special Investigation Units - Southern California Chapter Meeting, January 2008.
- Slee D. Presentation to the Cellular Telephone Industry Association on battery failure analysis methodology, December 2007.
- Slee D. Presentation to the San Fernando Valley Chapter of ASM International on printed circuit board propagating faults, April 2006.
- Slee D. Presentation to the California Conference of Arson Investigators on battery safety issues and failure analysis; presentation included information on electrical circuit concerns as well as battery exothermic reactions, July 2006.
- Slee D. Presentation to the San Fernando Valley Chapter of ASM International on battery safety issues and failure analysis, presentation included information on electrical circuit concerns as well as battery exothermic reactions, October 2006.
- Slee D. Presentation to the 30th International Symposium for Testing and Failure Analysis (ISTFA), Printed circuit board propagating faults, November 2004.
- Slee D. Printed circuit board propagating faults. Proceedings, 30th International Symposium for Testing and Failure Analysis (ISTFA), November 2004.