

James L. Kaschmitter
Papers and Presentations:

“Validating Performance with Advanced Prototyping” James Kaschmitter, Steve Pierce, Aubert Demaray; Soteria Battery Innovation Group Meeting, Orlando, FL March 20, 2023

“Advanced Electrolytes for Extreme Fast Charging”, April 17, 2023, Report to the U.S. Department of Energy; William Chueh, Mike Toney, Yi Cui, Johanna Nelson Weker, SLAC National Accelerator Laboratory, James Kaschmitter, SpectraPower LLC, Robert Kee, Colorado School of Mines

Gives the tutorial: “Li-Ion Cell Design and Manufacturing: Processes, Equipment and Quality Control” on a recurring annual basis for the following conferences:

1. International Battery Seminar and Exhibit: held annually in March in Florida
2. Advanced Automotive Battery Conference (AABC): held twice annually:
 - a. Once per year in June in Mainz, Germany; and
 - b. Once per year in December in San Diego, CA

“An overview of solid-state lithium battery development” Invited paper for American Vacuum Society, Advances in Energy Storage, Conversion, and Harvesting, May 19, 2021

Tutorial for paying attendees: “Li-Ion Cell Design and Manufacturing: Processes, Equipment and Quality Control” J. Kaschmitter *Virtual* International Battery Seminar & Exhibit July 29, 2020

Tutorial for paying attendees: “Li-Ion Cell Design and Manufacturing: Processes, Equipment and Quality Control” J. Kaschmitter, Advanced Automotive Battery Conference (AABC), Wiesbaden, Germany, January 14, 2020

Guest Lecturer, Stanford University MatSci303, November 6 and 12, 2019

“Entrepreneurship In Energy Storage: Experiences and Lessons Learned” 2019 Utah Energy Symposium, Salt Lake City, UT, November 2, 2019

“Fundamentals and Manufacturing of Lithium Rechargeable Batteries”, 1st Li-Ion-Solid Electrolyte & Lithium Metal (Liquid & Solid Electrolyte) Rechargeable Cell Manufacturing Seminar, August 19-20, 2019

Tutorial for paying attendees: “Li-Ion Cell Design and Manufacturing: Processes, Equipment and Quality Control” J. Kaschmitter *36th Annual* International Battery Seminar & Exhibit March 2019 | Fort Lauderdale, FL

Invited panel member, Stanford University, MatSci303, Battery Engineering, December 13, 2018

Tutorial for paying attendees: “Li-Ion Cell Design and Manufacturing: Processes, Equipment and Quality Control” J. Kaschmitter *35th Annual International Battery Seminar & Exhibit* March 26-29, 2018 | Fort Lauderdale, FL

“Ultra-High Temperature Li-ion Battery”, J. Kaschmitter and Victor Koch, *35th Annual International Battery Seminar & Exhibit* March 26-29, 2018 Fort Lauderdale, FL

“Continuous Monitoring of Swelling in Li-ion Cells and Packs”, The 34th International Battery Seminar and Exhibit, March 20-23, 2017, Fort Lauderdale, FL

“Thin Film Solid State Li Metal Battery with High Energy Density and Cycle Life”, E. Demaray, J. Kaschmitter and P. Khoklov, NASA Aerospace Battery Workshop 2016

2016 Federal Laboratory Consortium’s Far West Regional Award for Outstanding Technology Development:

“Wireless Battery Sensing and Failure Eliminator (WiBSAFE)”

John Chang, James Zumstein, Jack Kotovsky, Joe Farmer, Noel Peterson, Marianne Ammendolia, Frank Puglia, Greg Moore, Arthur Doble, Ralph Roark, Ryan Lawrence, Todd Bandhauer, James Kaschmitter, Bob Doane, Annemarie Meike Lawrence Livermore National Laboratory, EaglePicher Technologies/Yardney Division, Colorado State University, eNow

“Safety Testing in Lithium Ion Cells Comparing Thermally Stable Nanofiber-Based Separators to Traditional Polyolefin Separators”

B. Morin (Dreamweaver International, Inc.), J. Kaschmitter, P. Khokhlov (Spectra Power), and C. Hu (Paris Mountain LLC), 229th Electrochemical Society Meeting (May 30, 2016) (Batteries and Energy Storage).

“A Precision Contact Stress Sensor for Monitoring Swelling in Li-Ion Cells”, The 32nd International Battery Seminar & Exhibit, March 9 - 12, 2015, Fort Lauderdale, Florida

“Wireless Battery Management System for Safe High-Capacity Li-Ion Energy Storage”, J. Farmer, J. Chang, J. Zumstein, J. Kotovsky, A. Doble, F. Puglia, S. Osswald, K. Wolf, J. Kaschmitter, S. Eaves & T. Bandhauer, 31st International Battery Seminar & Exhibit Fort Lauderdale, Florida March 10-13, 2014

“Is There a Moore’s Law for Batteries?” NCCAVS Thin Film User’s Group Meeting, September 10, 2013, San Jose, CA

“Challenges in Commercializing Energy Storage Devices” Northern California Chapter of the American Vacuum Society, Thin Film Users Group, September 12, 2012, San Jose, CA

“High Speed Li Polymer Battery Manufacturing and R&D Foundry Services”, The 29th International Battery Seminar & Exhibit, March 12 - 15, 2012, Fort Lauderdale, Florida

“Energy Storage Commercialization”; Guest lecturer, Naval Postgraduate School, Monterey, CA; January 20, 2011, ME-4901 Special Topics in Energy Conversion and Storage

“Entrepreneurship in Energy Storage: Supercapacitors, Lithium-Ion Batteries And Micro Fuel Cells” Guest Lecturer, May 25, 2010 Stanford University, Mechanical Engineering Dept.

“Scalable Energy Storage: Beyond Lithium-Ion” Invited Panelist; August 27, 2009, IBM Almaden Research Center, San Jose, CA

“Separator-free rechargeable lithium ion cells produced by the extrusion lamination of polymer gel electrolytes”, Ian M. Ward, Hugh V. St. A. Hubbard, Simon C. Wellings, Glen P. Thompson, James Kaschmitter^b and HongPeng Wang, Journal of Power Sources, Volume 162, Issue 2, 22 Nov 2006

2006 Invited Speaker, Sevin Rosen Annual CEO Summit, San Francisco, CA

May 16, 2006, IEEE Invited Panel Guest, SVC Nanotechnology, San Jose, CA

"Micro-Fabricated Methanol/Water Reformers for Small PEM Fuel Cell Systems", Jul. 21-24, 2003, 8^{sup}.th Electrochemical Power Sources R&D Symposium, Portsmouth, VA.

“Rechargeable Lithium Ion Cells produced by the Extrusion Lamination of Polymer Gel Electrolytes”
I M Ward, H V St A Hubbard, P L Carr and J. Kaschmitter, The 19th International Seminar on Primary and Secondary Batteries, March 12, 2002, Ft. Lauderdale, FL

“Cycle Life Testing of Lithium-Ion Batteries for Small Satellite LEO Space Missions”, S.T. Mayer, J. H. Feikert and J. L. Kaschmitter, AIAA Conference on Small Satellites, Sept 13-16, 1993, Utah State University, Logan, UT. LLNL Preprint # UCRL-JC 114996

“Effects of Aqueous Solution Compositions on Aerocapacitor Energy Density”, S. T. Mayer, J. L. Kaschmitter, R. W. Pekala, Electrochemical Society Spring Meeting, Honolulu, HI, May 16-21, 1993

“Carbon Aerogels: An Update on Structure, Properties and Applications”, R. W. Pekala, S. T. Mayer, J. L. Kaschmitter, F. M. Kong, International Symposium on Advances in Sol-Gel Processing and Applications, Chicago, IL, Aug 24-28, 1993

“The Aerocapacitor: An Electrochemical Double-Layer Energy Storage Device”, S. T. Mayer, R. W. Pekala, J. L. Kaschmitter, J. Electrochem Soc. Vol. 140, No. 2, Feb, 1993

“Synthesis and Doping of Polycrystalline Silicon on Low-Temperature Plastics, J. L. Kaschmitter, J. B. Thompson, K. W. Weiner, N. J. Colella, J. B. Truher, T. W. Sigmon, UCRL-JC-111479

“SEU Tolerant Computer Based on the R3000”, J. L. Kaschmitter, D. B. Butner, D. L. Shaeffer, N. J. Colella, C. L. McKnett, P. G. Coakley, IEEE Fault Tolerant Computing Symposium, Boston, MA, July 6-10, 1992

“The Status of Lightweight Photovoltaic Space Array Technology based on Amorphous Silicon Solar Cells”, J. J. Hanak, J. L. Kaschmitter, 11th Space Photovoltaic Research and Technology Conference, Cleveland, OH, May 7-9, 1991

“High Energy Proton SEU Test Results for the Commercially Available MIPS R3000 Microprocessor and R3010 Floating Point Unit”, D. L. Shaeffer, J. R. Kimbrough, S. M. Denton, J. L. Kaschmitter, J. W. Wilburn, R. W. Davis, N. J. Colella and D. B. Holtkamp”, IEEE Transactions on Nuclear Science, Vol II, Dec, 1991

“Operation of Commercial R3000 Processors in the Low Earth Orbit Space Environment”, J. L. Kaschmitter, D. L. Shaeffer, N. J. Colella, C. L. McKnett, P. G. Coakley, IEEE Nuclear and Space Radiation Effects Conference, San Diego, CA, July 15-19, 1991 and IEEE Transactions, Dec, 1991

“1 Mbit, 25 nsec Cache Memory for a RISC Processor”, A. Barfknecht, R. Contolini, J. Kaschmitter, B. McWilliams, D. Tuckerman, Proc. 36th Solid State Circuits Conference, IEEE, 1989

“The VHSIC Ten-Chip Memory Hybrid”, A. T. Barfknecht and J. L. Kaschmitter, Laser Pantography 1987-1988 Status Report, LLNL, UCRL-53878-88

“Laser Fabrication of Interconnect Structures for SMOS Gate Arrays, J. C. Whitehead, F. Mitlitsky, D. J. Ashkenas, A. F. Bernhardt, S. E. Farnwald, J. L. Kaschmitter and B. M. McWilliams, UCRL-94057, Jan 19-24, 1986

“Laser Fabrication of Interconnect Structures for CMOS Gate Arrays”, J. C. Whitehead, J. L. Kaschmitter, B. M. McWilliams, The International Society for Optical Engineering, Jan 19-24, 1986

Selected Patents and Applications:

1. US 5,260,855 Supercapacitors based on Carbon Foams Nov 9, 1993
2. US 5,402,306 Aquagel Electrode Separator for Use in Batteries/Caps Mar 28, 1995
3. US 5,336,274 Method for Forming a Cell Separator for Bipolar Stack Aug 9, 1994
4. US 5,346,850 Crystallization and doping of a-silicon on low temperature plastic Sep 13, 1994
5. US 5,358,802 Doping of Carbon Foams for Energy Storage Devices Oct 25, 1994
6. US 5,393,619 Cell Separator for use in Bipolar Stack Energy Storage Feb 28, 1995
7. US 5,402,306 Aquagel Electrode Separator for use in Batteries and Supercapacitors
8. US 5,420,168 Method of Low Pressure/Evaporative Drying of Aerogel May 30, 1995
9. US 5,425,860 Pulsed Energy Synthesis and Doping of Silicon Carbide
10. US 5,456,763 Solar Cells Utilizing Pulsed-Energy Crystallized Microcrystalline/Polycrystalline October, 1995
11. US 5,476,878 Organic Aerogels from the Sol-Gel Polymerization... Dec, 19, 1995
12. US 5,508,341 Organic Aerogel Microspheres and Fabrication Thereof Apr 16, 1996
13. US 5,529,971 Carbon Foams for Energy Storage Devices Jun 25, 1996
14. US 5,538,564 Three dimensional amorphous silicon/microcrystalline solar cells Sep 23, 1996
15. US 5,601,938 Carbon Aerogel Electrodes for Direct Energy Conversion Feb 11, 1997
16. US 5,609,972 Cell Cap Assembly Having Frangible Tab Disconnect Mechanism, Mar 11, 1997
17. US 5,626,977 Composite Carbon Foam Electrode May 6, 1997

18. US 5,636,437 Fabricating Solid Carbon Porous Electrodes from Powders Jun 10, 1997
19. US 5,714,404(A) Fabrication of polycrystalline thin films by pulsed laser processing Feb 3, 1998
20. US 5,789,338 Process for Producing Carbon Foams for Energy Storage Devices
21. US 5,898,564 Capacitor with Composite Foam Electrode
22. US 5,908,896 Organic Aerogel Microspheres
23. US 5,932,185 Method for Making Thin Carbon Foam Electrodes
24. US 6,332,990 Method for fabricating composite carbon foam
25. US 7,401,712 B2 Smart Fuel Cell Cartridge Jan 19, 2006
26. US 7,648,792 Disposable Component On A Fuel Cartridge And For Use With A Portable Fuel Cell System January, 2010
27. US 7,968,250 Fuel Cartridge Connectivity, June, 2011
 - a. Engine Block For Use In A Fuel Cell System Sep 4, 2008
28. EP 2006752114, Disposable Component On A Fuel Cartridge Feb 20, 2008
 - a. And For Use With A Portable Fuel Cell System
29. IL-12104 Multi-Layer Multi-Functional Coatings for Advanced Rechargeable Batteries, Provisional application filed May 12, 2009
30. IL-12130 Novel Supercapacitor Architectures and Form Factors with Optimal Potential Distribution, June 9, 2009
31. IL-12129 Thermoelectric Coatings for Waste Heat Recovery and Photo-Thermal Power Generation June 9, 2009
32. US 8,958,198 Supercapacitor with Fibers, February 17, 2015
33. US 9,673,478 Multi-Layer Coatings For Bipolar Rechargeable Batteries With Enhanced Terminal Voltage, June 6, 2017
34. US 9,425,001 Method for Making Supercapacitor with Carbon Fibers, August 23, 2016
35. U.S. Appl no. 62524350, High-Temperature Electrodes And Energy Storage Devices Derived Therefrom, June 23, 2017

36. U.S. Appl no. 62333782 Thin Film Battery with High Capacity, Energy Density and Cycle Life, Demaray, et al, Provisional Patent Application filed May 9, 2016. US2018/0006293 A1, January 4, 2018
37. US 10,818,909 B2 “Energy Storage Device with a First Metal Layer Formed from a Precursor Layer upon Charge and Diffused into a Cathode during Discharge” October 27, 2020
38. US 11,444,23 B2, “Thermoelectric Coatings For Waste Heat Recovery And Photo-Thermal Power”, September 13, 2022
39. US 11,824,183, Energy Storage Device with a First Metal Layer formed from a Precursor Layer upon Charge and Diffused into a Cathode during Discharge, November 21, 2023
40. US 18/943,500 Application, Continuation: Energy Storage Device with a First Metal Layer formed from a Precursor Layer upon Charge and Diffused into a Cathode during Discharge, filed November 11, 2024