

## Publikationen

(2019): BATTERY PACK FOR AN ELECTRICAL DEVICE, CHARGING DEVICE FOR A BATTERY PACK AND METHOD FOR OPERATING A BATTERY PACK.

(2019): Nascent SEI-Surface Films on Single Crystalline Silicon Investigated by Scanning Electrochemical Microscopy. In: ACS Applied Energy Materials, vol. 2, no. 2, pp. 1388-1392. DOI: 10.1021/acsaem.8b01967.

(2017): Aging of Tesla's 18650 Lithium-Ion Cells: Correlating Solid-Electrolyte-Interphase Evolution with Fading in Capacity and Power. In: Journal of The Electrochemical Society, vol. 164, no. 14. DOI: 10.1149/2.0171714jes.

(2017): VERFAHREN ZUM HERSTELLEN EINER BATTERIE, BATTERIE UND INTEGRIERTE SCHALTUNG..

(2017): METHOD OF MANUFACTURING A BATTERY, BATTERY AND INTEGRATED CIRCUIT.

(2017): Lithium barrier materials for on-chip Si-based microbatteries. In: Journal of Materials Science: Materials in Electronics, vol. 28, no. 19, pp. 14605-14614. DOI: 10.1007/s10854-017-7325-4.

(2016): Ageing studies on commercial 18650 batteries used in Tesla model S electric vehicles. Poster presentation. In: International Battery Association Meeting 2016, Nantes, France.

(2016): Ageing of Commercial 18650 Batteries Used in Tesla Model S Electric Vehicles. In: 18th International Meeting on Lithium Batteries, Chicago, IL, USA.

(2016): A Microbattery Made from Monocrystalline Silicon. In: Thermec 2016, Graz, Österreich.

(2016): The microstructure matters: breaking down the barriers with single crystalline silicon as negative electrode in Li-ion batteries. In: Scientific Reports (Nature Publishing Group), vol. 6, no. Article number: 31712 (2016). DOI: 10.1038/srep31712.

(2016): Powering the Digital Revolution: A Miniaturized Lithium Battery Made of Single-Crystalline Silicon. Poster presentation. In: 18th International Meeting on Lithium Batteries, Chicago, IL, USA.

(2016): Die große Macht der kleinen Ionen - was Lithium-Ionen-Batterien zum Erfolg führt(e). In: Erfolgsfaktoren-Vortragsreihe, Kuchl, Österreich.

(2016): Overall conductivity and NCL-type relaxation behavior in nanocrystalline sodium peroxide  $\text{Na}_2\text{O}_2$  — Consequences for Na-oxygen batteries. In: Materials Science and Engineering: B, vol. 211, no. September, pp. 85-93. DOI: 10.1016/j.mseb.2016.06.002.

(2016): Investigation of the Electron Transfer at Si Electrodes: Impact and Removal of the Native  $\text{SiO}_2$  Layer. In: Journal of The Electrochemical Society, vol. 163, no. 3. DOI: 10.1149/2.0731603jes.

(2015): Fast Li Self-Diffusion in Amorphous Li-Si Electrochemically Prepared from Semiconductor Grade, Monocrystalline Silicon — Insights from Spin-Locking Nuclear Magnetic Relaxometry. Poster presentation. In: 20th International Conference on Solid State Ionics, Keystone, CO, USA.

(2015): Zelle eines Energiespeichers für ein Fahrzeug.

(2015): LITHIUM BATTERY, METHOD FOR MANUFACTURING A LITHIUM BATTERY, INTEGRATED CIRCUIT AND METHOD OF MANUFACTURING AN INTEGRATED CIRCUIT.

(2015): Small Change—Great Effect: Steep Increase of Li Ion Dynamics in  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  at the Early Stages of Chemical Li Insertion. In: Chemistry of Materials, vol. 27, no. 5, pp. 1740-1750. DOI: 10.1021/cm504564k.

- (2015): Diffusion-induced  $^7\text{Li}$  NMR relaxation of layer-structured tin disulphide — Li diffusion along the buried interfaces in  $\text{Li}_0.17\text{SnS}_2$ . In: Solid State Ionics, vol. 276, no. August, pp. 56-61. DOI: 10.1016/j.ssi.2015.03.039.
- (2015): Fast  $\text{Li}^+$  Self-Diffusion in Amorphous Li-Si Electrochemically Prepared from Semiconductor Grade, Monocrystalline Silicon: Insights from Spin-Locking Nuclear Magnetic Relaxometry. In: The Journal of Physical Chemistry C, vol. 119, no. 22, pp. 12183-12192. DOI: 10.1021/acs.jpcc.5b02490.
- (2015): Lithium ion dynamics in amorphous Li-Si electrochemically prepared from semiconductor grade, monocrystalline silicon — An NMR Study. Poster presentation. In: Materials Day 2015, Graz, Österreich.
- (2015): Fast Li self-diffusion in Li-Si Electrochemically Prepared from Semiconductor Grade, Monocrystalline Silicon. In: 15th European Conference on Solid State Chemistry (ECSSC), Wien, Österreich.
- (2015): Impact of the Native  $\text{SiO}_2$  Surface Layer on the Electron Transfer at Amorphous Si Electrodes. In: ECS Transactions (The Electrochemical Society), vol. 68, no. 2, pp. 1-11. DOI: 10.1149/06802.0001ecst.
- (2015): Comparison of Spatiotemporal Changes of SEI Properties on Different Anodes by SECM. In: ECS Conference on Electrochemical Energy Conversion & Storage with SOFC-XIV, Glasgow, United Kingdom.
- (2014): LITHIUM BATTERY, METHOD FOR MANUFACTURING A LITHIUM BATTERY, INTEGRATED CIRCUIT AND METHOD OF MANUFACTURING AN INTEGRATED CIRCUIT.
- (2014): BATTERY ELECTRODE, BATTERY, AND METHOD FOR MANUFACTURING A BATTERY ELECTRODE..
- (2014): LITHIUM BATTERY, METHOD FOR MANUFACTURING A LITHIUM BATTERY, INTEGRATED CIRCUIT AND METHOD OF MANUFACTURING AN INTEGRATED CIRCUIT.
- (2014): LITHIUM BATTERY, METHOD FOR MANUFACTURING A LITHIUM BATTERY, INTEGRATED CIRCUIT AND METHOD OF MANUFACTURING AN INTEGRATED CIRCUIT.
- (2014): Lithium Distribution in Monocrystalline Silicon-Based Lithium-Ion Batteries. In: ECS Transactions (The Electrochemical Society), vol. 62, no. 1, pp. 247-253. DOI: 10.1149/06201.0247ecst.
- (2014): Lithium Distribution in Monocrystalline Silicon based Lithium-Ion Batteries. Poster presentation. In: 17th International Meeting on Lithium Batteries, Como, Italien.
- (2014): Li Self-Diffusion in Metastable  $\text{Li}_{15}\text{Si}_4$  prepared from Monocrystalline Si - An Ex Situ  $^7\text{Li}$  NMR Relaxometry Study. Poster presentation. In: 17th International Meeting on Lithium Batteries, Como, Italien.
- (2014): Li Self-Diffusion in Amorphous Li/Si Prepared from Monocrystalline Si - A  $^7\text{Li}$  NMR Relaxometry Study. Poster presentation. In: 65th Annual Meeting of the International Society of Electrochemistry (ISE), Lausanne, Schweiz.
- (2013): Crystalline Silicon as Structured Anode Material for Lithium-Ion Batteries. In: 224th Meeting of the Electrochemical Society, San Francisco, CA, USA.
- (2013): Die Leistung steigt, der Preis fällt. In: Oberösterreichische Nachrichten.
- (2013): LITHIUM BATTERY, METHOD FOR MANUFACTURING A LITHIUM BATTERY, INTEGRATED CIRCUIT AND METHOD OF MANUFACTURING AN INTEGRATED CIRCUIT.
- (2013): LITHIUM BATTERY, METHOD FOR MANUFACTURING A LITHIUM BATTERY, INTEGRATED CIRCUIT AND METHOD OF MANUFACTURING AN INTEGRATED CIRCUIT.
- (2013): Die Lithium-Ionen-Batterie - von der Knopfzelle zur Traktionsbatterie. In: Joint Annual Meeting of the Austrian Physical Society and the Swiss Physical Society, Linz, Österreich.
- (2013): Ex-Situ Method for the Determination of Lithium and Fluoride trapped in the SEI of Lithium Ion Cells during prolonged cycling. In: Graz Battery Days, Graz, Österreich.
- (2011): Theorie vs Praxis - Ist gewünscht gleich machbar?. In: IIR Konferenz: Elektrochemische Speichersysteme, Wien, Österreich.



(2010): NONAQUEOUS ELECTROLYTE SOLUTION FOR SECONDARY BATTERY AND NONAQUEOUS ELECTROLYTE SECONDARY BATTERY..

(2010): NONAQUEOUS ELECTROLYTE SOLUTION FOR SECONDARY BATTERY AND NONAQUEOUS ELECTROLYTE SECONDARY BATTERY..

(2010): More Silicon for more Miles? A way to High-Energy Lithium-Ion Batteries through finishing the Silicon-Anode with Fluorinated Aromatic Isovyanates (FAI). In: 15th International Meeting on Lithium Batteries (IMLB), Montreal, Kanada.

(2010): Investigation of the oxidative stability of electrolyte systems on 5V cathode materials by insitu mass spectrometry. Poster presentation. In: 15th Meeting of the IMLB - International Meeting on Lithium Batteries, Montreal, Kanada.

(2010): A New High Capacity Graphite/Silicon Composite Material for Lithium Ion Batteries. Poster presentation. In: 15th Meeting of the IMLB - International Meeting on Lithium Batteries, Montreal, Kanada.

(2009): In-situ Druckmessung für elektrochemische Systeme.

(2009): NONAQUEOUS ELECTROLYTIC SOLUTION FOR SECONDARY BATTERY, AND NONAQUEOUS ELECTROLYTIC SOLUTION SECONDARY BATTERY USING IT..

(2009): NONAQUEOUS ELECTROLYTE SOLUTION FOR SECONDARY BATTERY AND NONAQUEOUS ELECTROLYTE SECONDARY BATTERY..

(2009): Temperaturkontrollierte in-situ Gasdruckmessung für elektrochemische Systeme.

(2009): Linzer erforschte, wie Batterien sieben Mal länger funktionieren. In: Oberösterreichische Nachrichten.

(2009): Dissertation der Woche: "Im Akku reißt und bröckelt nichts mehr". In: Die Presse.

(2009): Wissen: "Die Batterie von morgen".. In: Kleine Zeitung / Stadtausgabe.

(2009): The Influence of Fluorinated Aromatic Isocyanates (FAI) on the Cycling Performance of Silicon Anodes in Lithium-Ion Batteries. Poster presentation. In: 216th Meeting of The Electrochemical Society (ECS), Wien, Österreich.

(2009): Condition monitoring of Lithium-Ion Batteries for electric and hybrid electric vehicles. In: e & i Elektrotechnik und Informationstechnik, vol. 126, no. 5, pp. 186-193. DOI: 10.1007/s00502-009-0644-2.

(2009): Alternative Binder Systems for Lithium Ion Batteries 2009. In: 216th Meeting of The Electrochemical Society (ECS), Wien, Österreich.

(2009): Post Mortem Analysis of SEI Components in Industrial Lithium-Ion Cells for Determination of Ageing Effects. Poster presentation. In: 216th Meeting of The Electrochemical Society (ECS), Wien, Österreich.

(2009): Differential Scanning Calorimetry and Thermo Gravimetry with In-Situ Online Mass Spectrometry Studies on Lithium Iron Phosphate Cathodes and Carbon Anodes. In: 216th Meeting of The Electrochemical Society (ECS), Wien, Österreich.

(2009): A New High Capacity Graphite-Core / Silicon-Shell Composite Material for Lithium Ion Batteries. In: 216th Meeting of The Electrochemical Society (ECS), Wien, Österreich.

(2008): Lithium-Power-Group: Forschungsgebiete. Posterpräsentation. In: BASF Day, Graz, Österreich.

(2008): Silicon Insertion Electrodes for Lithium-Ion Batteries.

(2008): Ist die Lithium-Ionen-Batterie reif für das Elektrofahrzeug? Eine Analyse aus materialwissenschaftlicher Sicht. In: AVL Motor&Umwelt 2008, Graz, Österreich.

(2008): NONAQUEOUS ELECTROLYTIC SOLUTION FOR SECONDARY BATTERY, AND NONAQUEOUS ELECTROLYTIC SOLUTION SECONDARY BATTERY USING IT.



- (2008): Investigating the SEI-layer on Silicon Insertion Electrodes of Lithium-Ion Batteries by Pyrolysis-GC/MS. In: PRIME 2008 - 214th Meeting of The Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2008): Influence of pressure on the cycling stability of silicon electrodes in lithium-ion batteries. Poster presentation. In: 214th Meeting of the Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2008): Methoden für die Angewandte Materialcharakterisierung. Posterpräsentation. In: BASF Day, Graz, Österreich.
- (2008): Batterien und Brennstoffzellen für Elektrofahrzeuge. In: CHANCE, Hartberg, Österreich.
- (2008): Different Room Temperature Ionic Liquids and their Mixtures as Electrolytes for Graphite Negative Electrodes in Lithium Ion Batteries. Poster presentation. In: 214th Meeting of the Electrochemical Society (ECS), Honolulu, Hawaii.
- (2008): Cathodic decomposition processes on LiFePO<sub>4</sub> and LiMn<sub>2</sub>O<sub>4</sub> electrodes - leading to aging in high power Lithium-Ion Batteries. Poster presentation. In: PRIME 2008 - 214th Meeting of The Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2008): SILICON NANO PARTICLES - Both a blessing and curse. In: 214th Meeting of the Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2008): Functional Binders as Basic Fundament for Applicable Lithium-Alloy Based Anodes in Lithium Ion Batteries. In: 9th ABA - Advanced Batteries and Accumulators, Brno, Tschechische Republik.
- (2008): Lithium-Ion Batteries. In: BASF Day, Graz.
- (2008): γ-butyrolactone as alternative electrolyte component for high voltage Lithium-Ion Batteries. In: 214th Meeting of the Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2008): Influence of Pressure on the Cycling Stability of Silicon-Electrodes. Poster presentation. In: 9th ABA - Advanced Batteries and Accumulators, Brno, Tschechische Republik.
- (2008): Germanium for High Capacity Lithium Ion Battery Anodes. Poster presentation. In: 214th Meeting of the Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2008): Energy Storage Systems for Hybrid Vehicles, from Racing to Production cars. In: A3PS - Hybrid and electric vehicles, energy storage technologies and control systems, Wien, Österreich.
- (2008): Propargyl Benzenesulfonate - A Triple-Bonded Electrolyte Additive for Electrolytes in Lithium Ion Batteries. Poster presentation. In: 214th Meeting of the Electrochemical Society (ECS), Honolulu, Hawaii, USA.
- (2007): Temperature Controlled Pressure Characterization (TPC) of Lithium-Ion Batteries with Silicon based Anodes. In: 212th Meeting of the Electrochemical Society (ECS), Washington, D.C., USA.
- (2007): "Mono --> Poly": Polymerization reactions in lithium batteries. In: PBFC-Polymer Batteries, Fuel Cells, Rome, Italy.
- (2007): Electrolyte Decomposition On Chemically And Electrochemically Formed Li-Intermetallics. Poster presentation. In: 58th Annual Meeting of the International Society of Electrochemistry, Banff, Canada.
- (2007): Zukunfts-Management für regionale Betriebe ( Methoden und Werkzeuge - Chancen und Potenziale). In: Batterien und Brennstoffzellen für Elektrofahrzeuge 2007, Ökopark Hartberg, Österreich.
- (2007): Lithium Battery's meaning of life: the Solid Electrolyte Interphase (SEI). In: 58th International Meeting of the International Society of Electrochemistry (ISE), Banff, Kanada.
- (2007): Comprehension and tailoring of cellulose based binders as fundament for applicable silicon/graphite composite anodes. In: International Meeting on Battery Materials, Shenzhen, China.
- (2007): Development of nanostructured Sn/SnSb/Cu composite anode and their characterization via ESEM. Poster presentation. In: 58th Annual Meeting of the International Society of Electrochemistry, Banff, Canada.



(2007): Deckschichtbildung auf Anoden in wiederaufladbaren Lithiumbatterien. In: 106. Bunsentagung, Graz, Österreich.

(2007): From graphite to lithium storage alloy anodes chances limitations. In: 48th Battery Symposium of the Electrochemical Society, Kyushu, Japan.

(2006): PC for PCs? Chances and Limitations of Propylene Carbonate Based Lithium Ion Cells. In: The Electrochemical Society - 210th ECS Meeting, Cancun, Mexiko.

(2006): Ethyl isocyanate - An electrolyte additive for PC based electrolytes in lithium ion batteries.. Poster presentation. In: International Meeting on Lithium Batteries, Biarritz, Frankreich.

(2006): Advanced electrochemical mass spectrometry. Poster presentation. In: International Meeting on Lithium Batteries, Biarritz, Frankreich.

(2006): Preparation of Thin Film Model Electrodes by APID (Atmospheric Pressure Ion Deposition). Poster presentation. In: 210th Meeting of The Electrochemical Society (ECS), Cancun, Mexiko.

(2006): On the origin of gases evolved during electrolyte decomposition at silicon anodes in Lithium-Ion batteries. Poster presentation. In: International Meeting on Lithium Batteries, Biarritz, Frankreich.

(2006): Isocyanate Compounds as Electrolyte Additives for Lithium-Ion Batteries. Poster presentation. In: International Meeting on Lithium Batteries, Biarritz, Frankreich.

(2006): Monitoring electrode reactions by in situ ESEM. Poster presentation. In: International Meeting on Lithium Batteries, Biarritz, Frankreich.

(2006): Thin Layer Electrodes and Improved Percolation Pattern Composites Prepared by Atmospheric Pressure Ion Deposition and Substrate Induced Coagulation.

(2005): Entwicklung von Hochtemperaturelektrolyten für Lithium-Ionen-Batterien.

