

KEEPING UP WITH BATTERIES

We have sifted through 1000s of articles on lithium-ion batteries for you! We have captured pretty much everything new and important that came out in *May 2018*. We have selected and categorized commercially-relevant articles, added some interesting news, and squeezed all this content into our comprehensive review.

Hope it makes your work easier and keeps you in touch with battery literature!

The Research Interfaces Team

CELL COMPONENTS & MANUFACTURING



Sealing failure behavior of Li-ion pouch cell	Elsevier				
Deformation mechanisms of cell components using in-situ micro tests	Elsevier				
Lithiation-induced buckling of wire-based electrodes	Elsevier				
Nanoporous Cu current collector prepared by ultrasonic method	Elsevier				
Effect of solution vs physically mixed precursors on cathode properties	Elsevier		LNMO		★
Highly compacted LFP cathode material for 18650 batteries	ESG		LFP		pdf
Electrostatic spray deposition for battery fabrication	Elsevier		thin film		
Flame aerosol deposition of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ layers on flexible substrates	Elsevier		thin film		
Light-permeable and photoluminescent microbatteries for screens	RSC		micro		
Semiconductor-based fabrication of 3D Li-ion microbatteries	Elsevier		micro		
Microbatteries batch fabricated by micro-fluidic MEMS packaging	Springer		micro		

LEGEND

- link to the article or website
- industry/government co-author
- application / Li-ion chemistry
- electric vehicles (EVs)

- grid storage aviation
- policy relevance
- mining recycling
- open access
- ★ – review article / highlight

*Other abbreviations are chemistry or engineering specific and commonly used throughout the field (e.g. KF = Kalman filter). If you are unclear, please click on the link and check.

**Mistakes are unavoidable, so please forgive us if you find any.

CELL BEHAVIOR

Mechanical characterization and modeling of commercial electrodes	Elsevier				
Mechanical and EC failure behavior of 18650 cells at various SoC	IEEE				
X-ray observation of thermal runaway during nail-penetration test	Elsevier				★
Indentation analysis of pouch cell based on shape function theory	Wiley				
Fast charging of pouch cells based on local volume expansion	Elsevier				
Simultaneous sensing of T and bi-directional strain in prismatic cell	MDPI				
Coupled EC-thermal-mechanical model for spiral-wound Li-ion battery	Springer				
Heat generation of LFP pouch cells with passive thermal management	MDPI				
Thermal safety issues of Li-ion batteries for EVs	IEEE				

Temperature path dependent voltage hysteresis in Li-ion cells	Elsevier	★
Quantification of reversible capacity loss caused by anode overhang	Elsevier	🏛️
Dimensional analysis and modelling of energy density of Li-ion cell	Elsevier	

 NEWS BOX



IEA: Global EV Outlook 2018 ([IEA](#))

Bloomberg New Energy Finance: Electric Vehicle Outlook 2018 ([Bloomberg](#))

Electric-car Batteries That Charge in Five Minutes Have Lured an Unlikely Investor: Big Oil ([Quartz](#))

"StoreDot says its flash batteries for mobile should be commercially available next year, according to the BP statement. It's unclear when the rapid-charging batteries for EVs will arrive."

Whatever Happened to That \$35,000 Tesla Model 3 You Still Can't Buy? ([The Guardian](#))

 BATTERY MANAGEMENT



Health management system for EV batteries 🔍	MDPI	🚗	🔋	🔍
Detecting internal short circuit using fault-diagnosis algorithm	Elsevier			
Micro-short circuit diagnosis for series-connected battery packs	IEEE			
Transient response as diagnostic tool for Li-ion battery	Springer			
Parameter variations and their mutual influences in battery packs	Elsevier	🚗		★
Equalization strategy using maximum consistency tracking algorithm	IEEE			
Inherent equalization of batteries based on leakage current	IEEE	🏠		
Battery charger with accurate built-in resistance detection	IEEE		📞	
Optimizing multistage charge strategy for commercial Li-ion battery	RSC	🏛️		🔋
Real-time multistage current charging method using Simulink	MDPI			🔋
Closed-loop CT-CV charging technique for Li-ion battery	IEEE			
Fast charging of pouch cells based on local volume expansion	Elsevier			
Discharging strategy for self-heating of battery at low temperatures	IEEE	🚗		🔋
AFOSM control for Boost mode in battery-SC system	PLOS	🚗		🔋
BMS for small-size rotary-wing electric UAVs	Elsevier	🏛️	✈️	★
Aging model for batteries in stand-alone renewable energy systems	Elsevier		🏠	
High frequency model for batteries connected to fast power electronics	Elsevier			
Power-based integrated battery model based on manufacturer specs	IEEE			
Integrated reduced order model with degradation for LFP/G cells	Elsevier	🏛️		
Pareto fronts for multiobjective optimization of Li-ion cell	Elsevier			

Regression method for prognostics in multi-state operating condition	Elsevier			
Comparison of impedance-based ECMs for on-board state prediction	Elsevier			★
Comparative evaluation on SoC estimation methods	Springer			
Online parameter identification based on VFF strategy	MDPI			
Online estimation of SoP using genetic algorithm	IEEE			
Wavelet-based denoising for battery SoC estimation	MDPI			
Inverse theory and metaheuristic algorithm for off-board SoC diagnosis	Elsevier			★
Splice-ECM for SoC estimation of aerial battery	Sage			
Adaptive unscented KF for SoC of series-connected battery system	Elsevier			
RUL prediction based on Gauss-Hermite particle filter	IEEE			
PSO algorithm and half-cell model for SoH diagnosis	Elsevier			
SoH identification based on nonlinear frequency response analysis	MDPI			

NEWS BOX

Storage Will Be Energy's Next Big Thing ([Bloomberg](#))

Just How Much Business Can Batteries Take from Gas Peakers? ([Greentech Media](#))

Sonnen Raises \$71M and Kicks Off a Strategic Partnership With Shell ([Greentech Media](#))



BATTERY MODULES & PACKS



Parameter variations and their mutual influences in battery packs	Elsevier			★
Packing design and mechanical integrity of 18650 battery module	Elsevier			
Thermal management systems for batteries	Wiley			★
Heat dissipation and flow characteristics of air-cooled battery pack	Wiley			
Heat and mass transfer modeling of refrigerant-based cooling system	Elsevier			
TM system for battery module with heat sheets and PCM	Wiley			
TMS based on boiling and evaporating ammonia	Elsevier			
TMS based on Cu foam and paraffin composite PCM	Elsevier			

APPLICATIONS, POLICY & RECYCLING



Fuel cells vs batteries for drone applications	Elsevier			
BMS for small-size rotary-wing electric UAVs	Elsevier			
Online fuzzy energy management of hybrid fuel cell/battery system	Elsevier			
Thermal safety issues of Li-ion batteries for EVs	IEEE			
Thermal and electrical performance of EV battery under drive cycles	Elsevier			

Energy management of off-road EVs with hybrid battery-SC system	IEEE			
Battery size and lifetime for wireless charging of EVs	IEEE			
Assessing prototype solid-state Li-metal battery for EV application	Elsevier			★
Hybrid NCA/LTO EV battery system to reduce battery aging	Elsevier			★
Development of 48V P0 demonstration vehicle	Springer			
World Electric Vehicle Journal: New open access journal for e-mobility	MDPI			
Stochastic prediction of power demand at high-rate EV chargers	IEEE			
Peak-load reduction algorithm using coordination of PV, BESS, EV	IEEE			
Dynamic program to value energy storage in grid applications	Elsevier			
Energy storage for preserving power system adequacy and security	Elsevier			
Improving dispatchability of distribution networks through grid batteries	Elsevier			
Impact of BESS representative usage profile on cell degradation	Elsevier			★
ESS technologies in microgrid applications 🔍	IEEE			
Energy storage technologies for PV systems 🔍	Elsevier			
Study of battery-SC hybrid ESS for standalone PV power system	Elsevier			
MPC based peak shaving for household battery-PV system	Elsevier			
ESS coupling in high-efficiency household scenario	Elsevier			
Battery sizing and energy management for green small cells	IEEE			
Short-distance commercial electric aviation	IEEE			
Electricity management for EVs considering urban mobility	Nature			
Best practices and incentives for EVs: International expert survey	IEEE			
Effectiveness of EV incentives in US	Elsevier			★
Ownership costs for conventional, hybrid, and EVs in US cities	Elsevier			
Probabilistic cost of ownership model for EV uptake in Italy	Elsevier			
Car dealerships as barriers to EV adoption	Nature			★
Future of US energy storage and policies driving its growth	ABA			
Technical and financial comparison of BESS for residential grid	AIP			
Hazard identification for Li-ion batteries using FMEA	Elsevier			
New vision 2050: Technology and low-carbon society 🔍	Springer			

NEWS BOX

JetSuite Strikes a Deal for Hybrid Electric Planes With Start-up Zunum Aero
[\(Los Angeles Times\)](#)

"It is the first substantial commercial order of an aircraft technology that could cut fuel costs and emissions, and make flights quieter."



China's Chilean Entry Raises Doubts About Lithium Price Outlook [\(Mining.com\)](#)

Comparative LCA of batteries with Li metal, Si, and graphite anodes	Springer				
Sustainability of Li recovery from brines 🔍	Elsevier				
Separation of Li from leach liquors by solvent extraction 🔍	MDPI				
Purification of industrial grade LiCl into battery grade Li ₂ CO ₃	Elsevier				
Recycling of metals from spent Li-ion batteries 🔍	Elsevier				
Metallurgical and mechanical methods for recycling EV battery packs 🔍	Elsevier				
Recycling of LiCoO ₂ cathode powders using mild organic acids	Elsevier				
Ultrasound-assisted leaching of Co and Li from spent batteries	Elsevier				
Extracellular polymeric substances in bioleaching of spent batteries	Elsevier				
Battery waste and capitalist phantasy	Sage				