

KEEPING UP WITH BATTERIES

We have sifted through 1000s of articles on Li-ion batteries for you! We have captured pretty much everything new and relevant that came out in *September 2018*. We have carefully selected and categorized each article, 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

APPLICATIONS & RECYCLING



Li-ion battery safety	Elsevier				book
Macromodeling of microbatteries for IoT integration	Springer		micro		chapter
Modular and scalable battery systems for EVs	Springer				
★ Simulation platform for optimization of EV modular drivetrains	IEEE				★
Analysis of energy consumption of different EV powertrains	Springer				
Energy management strategy for battery/SC system in PHEV bus	Elsevier		bus		
TEA diagram for cost and emission comparison of hybrid and EV	MDPI				
Active stabilization of bidirectional EV battery charger	IEEE				
MMPC for bidirectional power control between EV and grid	IEEE				
Charging solutions for everyday EV mobility	Springer				
Charging management for EVs using generalized Nash equilibrium	Wiley				
Mixed user equilibrium model of EV charging in urban network	Elsevier				
Charging control of EVs in smart grid using Stackelberg differential game	Springer				
Incentive-based distributed scheduling of EV charging	IEEE				
Consensus-based coordination of EV charging	Elsevier				
★ Emissions of centralized vs decentralized EV smart charging	Elsevier				★
Effect of opportunity charging on costs/CO ₂ of urban freight transport	MDPI		truck		
Locating and sizing of battery swapping stations	Elsevier				
Multi-objective locating of EV battery swapping stations	Elsevier				
Dial-a-ride problem with EVs and battery swapping stations	Elsevier				
Analysis of EV driving patterns via two-level clustering model	Elsevier				
Modular approach for electrification of city bus fleets	Springer		bus		
Planning EV infrastructure for urban areas with tight land supply	MDPI				
Placing EV charging stations using time cost and existing infrastructure	MDPI				
★ Integration of EVs into power grid for demand response	Elsevier				★
Evaluating impact of EVs on grid assets using integrated algorithm	Elsevier				
Resolving grid congestion in Germany using V2G technology	Elsevier				
Transportation and power grid in smart cities	Wiley				book
Past and future industrial use of lithium in EU context	MDPI				

🔍 Different aspects of energy storage	IEEE			issue
Optimizing demand-side ESS in presence of distributed generation	IEEE			
Coordinated control of multiple BESS for primary frequency regulation	IEEE			
Dual battery storage strategy for PV utilization in UK	MDPI			
Sizing of residential battery/PV system in Australia	Elsevier			
Optimizing dispatch of integrated battery/PV system	IEEE			
Energy management algorithm for battery/PV system	IEEE			
Optimization model for battery/PV systems in P2P energy trading	Elsevier			
Economic evaluation of second-use battery/PV charging station	Elsevier			
Key environmental and performance indicators for battery/RE system	Elsevier			
Optimizing size and control of off-grid battery/RE system	Elsevier			
Energy management for battery/wave energy system	Elsevier			
★ Techno-economic analysis of Li-ion vs Pb-acid battery in microgrids	Elsevier			★
Design of multi-energy microgrid using linear battery aging model	Elsevier			
Energy management and battery sizing for Flinders Island microgrid	Elsevier			
LCA and cost-benefit analysis of BSS for small energy communities	MDPI			
Techno-economic analysis of DC distribution in commercial buildings	Elsevier			

<p>LEGEND</p> <p> – link to the article or website</p> <p> – industry/government co-author</p> <p> – application / Li-ion chemistry</p> <p> – electric vehicles/EVs</p>	<p> grid storage</p> <p> policy relevance</p> <p> resources recycling</p> <p> – open access</p> <p> ★ – review article / highlight</p>	<p>*Other abbreviations are chemistry or engineering specific and commonly used throughout the field (e.g. SC = supercapacitor). If you are unclear, please click on the link and check.</p> <p>**Mistakes are unavoidable, so please forgive us if you find any.</p>
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🔍 ★ Processes and technologies for recycling of spent Li-ion batteries	Springer				★
🔍 Hydrometallurgical processes for recycling spent Li-ion batteries	ACS				
Recovery of Li, Co, Ni, Mn from cathode scrap by leaching	Elsevier				
Recovery of high-purity Co from NMC battery by leaching	Springer				
Leaching and precipitation of Li and Co using tartaric acid	Elsevier				
Effect of mechanochemical activation on LCO powder and metal leaching	ACS				
Recovery of metals from NMC cathode using H ₂ SO ₄ leaching	Elsevier				
Recovery of Mn from H ₂ SO ₄ leaching liquor	Elsevier				
Selective extraction of Li using mild H ₃ PO ₄	Elsevier				
Techno-economic optimization of battery metal recovery by acid leaching	Elsevier				
Recovery of Li from pyrometallurgical slag by chlorination roasting	ACS				
★ Coupling reactions during roasting of mixed anode and cathode	Elsevier				★
Computational selection of LiMO ion exchange materials for Li extraction	ACS				
Recovery of NMC cathode material from different recycling streams	ACS				
Regeneration of NMC532 cathode material from spent batteries	Elsevier				
Closed-loop process to resynthesize LiCoO ₂ from spent phone batteries	Elsevier				
Economic and environmental benefits of EV recycling in China	Elsevier				

 NEWS BOX



The World Bank Just Placed a \$1 Billion Bet on Batteries ([Fortune](#))

"The World Bank will offer loans up to \$1 billion and seek partners for an additional \$4 billion to finance batteries in the developing world."

A "Technology-Smart" Battery Policy Strategy for Europe ([Science](#))

"Europe houses less than 1% of the global Li-ion battery cell manufacturing capacity, and this production capability largely addresses niche markets."

Argonne's Joint Center for Energy Storage Research Renewed for 5 Years ([Energy.gov](#))

 NEWS BOX

Mercedes Unveils Electric Car in Direct German Challenge to Tesla ([Reuters](#))

Elon Musk Steps Down as Tesla Chairman in \$40 Million SEC Settlement ([Time](#))

States, Cities and Companies Unveil a Frenzy of New Electric Vehicle Commitments ([Greentech Media](#))



 TECHNOLOGY ADOPTION & POLICY



★ Framework for comparing EV public policies cross-nationally	Elsevier		
Role of public policy in technology diffusion: Case of plug-in EVs	ACS		
Effect of monetary, traffic, and infrastructure policies on EV adoption	Elsevier		
Analysis of joint policy for EV subsidy and infrastructure construction	MDPI		
EV services as economic incentives to EV ownership	Elsevier		
Assessing suitability of EVs for urban driving	Elsevier		
Analysis of EV purchase intentions in China, Russia and Brazil	Elsevier		
Effect of policies and infrastructure development on EV diffusion in China	MDPI		
Effect of consumer perception and personality on EV adoption in China	Elsevier		
Environmental impacts of e-bike adoption in Wellington, New Zealand	Elsevier		
Analyzing EV adoption in island regions: Case of Tenerife, Spain	Elsevier		
🔍 Suitability of small islands for EV and V2G service adoption	Elsevier		
Non-obvious benefits of EVs and V2G	Elsevier		

🔍 ★ Role of electricity generation in assessing LCA of EVs	MDPI	🏛️	🚗	🔒	🔍 ★
★ TEA diagram for cost and emission comparison of hybrid and EV	MDPI	🏢	🚗	🔒	★
CO2 reduction potential of cars with alternative propulsion technologies	Elsevier	🏛️	🚗		
Comparing well-to-wheel energy efficiency of vehicle technologies	Elsevier		🚗		
Influence of driving behaviour on fuel economy of PHEV	Elsevier	🏛️	🚗		
★ Well-to-wheel H ₂ O footprints of conventional vs electric vehicles in USA	Elsevier		🚗		★
LCA comparison of gasoline vs electric vehicles in China	Elsevier		🚗		
TCO economic comparison of diesel, CNG and electric bus in Istanbul	MDPI		bus	🔒	
Emissions of centralized vs decentralized EV smart charging	Elsevier		🚗🏠		
★ Policy strategy for Li-ion battery manufacturing in Europe	Science				★
Effect of recent battery cost reduction on future emission scenarios	Springer	🏛️	🚗		
Analysis of EV supply chain behavior under subsidy reduction	Springer		🚗		
★ Evaluating EV industry and technology evolution in China	Elsevier	🏢	🚗		★
★ Effect of EV diffusion on energy supply and air pollution in Korea	Elsevier	🏢🏛️	🚗🏠		★
Economic and environmental benefits of EV recycling in China	Elsevier		♻️	🔒	
Modelling interactions between institutions and business models	Elsevier		♻️		

📱 NEWS BOX



Electric Flight Will Transform Our Cities for the Better, and It Will Happen Sooner Than You Think ([Greentech Media](#))

"This trio of storage, sensors and software came together to build today's \$6 billion commercial drone industry. Only 10 years ago, it barely existed. Once drones are allowed to fly beyond visual line-of-sight, the market is expected to grow at an even faster pace."

New Electric Drone Has Groundbreaking Flight Time ([IEEE Spectrum](#))

Industry Giants Samsung and Hyundai Invest in Solid-State Batteries ([Greentech Media](#))

Why Lithium-ion May Rule Batteries for a Long Time to Come ([MIT Technology Review](#))

"For anything to make it into a commercial product is a long slog, even if you make the discovery faster. It's just a very long road to materials optimization, testing, customer acceptance, all of these things. To the point that even if I had something that worked perfectly in the lab today, you would probably have a six-to-10-year slog."