

Batteries & Supercaps: Understanding the Chemistry Behind Electrochemical Energy Storage

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It is almost a cliché by now that research in electrochemical energy storage has shown unprecedented growth over the last years, driven by our pressing need to move away from fossil fuels to sustainable, renewable energy sources. Batteries, supercapacitors and other energy storage systems may seem simple on the surface, but their chemistry is varied and complex, which is why much of the research to date has been focusing on optimising existing systems and finding materials for new systems without necessarily emphasising the intricate mechanisms behind this improved performance. However, with increased sophistication of instruments to measure and monitor performance, such as operando spectroscopy, and our increased theoretical understanding of the processes taking place at interfaces, research in electrochemical energy storage is now much more driven towards understanding the processes that enable high performance. Providing a platform for this kind of work, namely the chemistry and mechanisms at play in electrochemical energy storage and the development of new methods required to gain this fundamental understanding, is the central aim of *Batteries & Supercaps*.

This past year marks the first full year since *Batteries & Supercaps* has been open for submission. We have been very pleased by the consistently high quality of the submissions we have received, despite being a brand-new journal without an impact factor. Thus, we thank all our authors for their trust and all our reviewers for helping us to get off to such a good start. Of the papers we have published so far, about half came from Europe and the other half from the Americas, Asia and Australasia, reflecting that *Batteries & Supercaps* is an international journal with a global reach. Table 1 summarises our top 10 most-often-downloaded papers for 2018 (as: October 2018, excluding reviews). We have also published a number of reviews so far that give a good overview of the state of the art in the field at the moment. These can be found in Table 2.

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Figure 1. ChemPubSoc Europe member societies.

Now, being a new journal without impact factor in a highly competitive field is quite challenging. Due to the increase in the number of dubious journals being launched each year, most indexing services have tightened their requirements, with two of the biggest ones, Scopus and Web of Science, requiring a period of consistent publishing, followed by a lengthy application procedure. In the case of Scopus, a journal has to be publishing for about two years before an indexing application will be considered, and even then, the decision can take up to a year. *Batteries & Supercaps* has already applied for indexing in Web of Science, and we are confident that you will be able to find us there quite soon!

Speaking of new journals, the ChemPubSoc Europe family (highlighted in Figure 1) has a new addition: *ChemSystemsChem*. *ChemSystemsChem* was launched to address the rapid emergence of systems



Table 1. Top 10 most-downloaded *Battery & Supercaps* articles (until October 2018).

Corresponding author(s)	Title	DOI
Youngsik Kim Volker Presser Ben Breitung, Torsten Brezesinski Yury Gogotsi	A New Rechargeable Seawater Desalination Battery System Valence-Tuned Lithium Titanate Nanopowder for High-Rate Electrochemical Energy Storage Artificial Composite Anode Comprising High-Capacity Silicon and Carbonaceous Nanostructures for Long Cycle Life Lithium-Ion Batteries 2D Titanium Carbide/Reduced Graphene Oxide Heterostructures for Supercapacitor Applications	10.1002/batt.201800012 10.1002/batt.201700007 10.1002/batt.201700004 10.1002/batt.201800014 10.1002/batt.201800013 10.1002/batt.201800030 10.1002/batt.201700002
Volker Presser Mihai Duduta Arunachala M. Kannan	Gyroidal Porous Carbon Activated with NH ₃ or CO ₂ as Lithium–Sulfur Battery Cathodes Ultra-Lightweight, High Power Density Lithium-Ion Batteries Plug-In Hybrid Vehicle and Second-Life Applications of Lithium-Ion Batteries at Elevated Temperature	10.1002/batt.201800013 10.1002/batt.201800030 10.1002/batt.201700002
Harry E. Hoster	Formation of the Solid Electrolyte Interphase at Constant Potentials: A Model Study on Highly Oriented Pyrolytic Graphite	10.1002/batt.201800029
Grant E. Johnson	DRILL Interface Makes Ion Soft Landing Broadly Accessible for Energy Science and Applications	10.1002/batt.201800042
Chaopeng Fu, Anping Dong, Yafei Kuang	Polar Ultrathin Self-Doping Carbon Nitride Nanosheets with Intrinsic Polysulfide Adsorption for High Performance Lithium-Sulfur Batteries	10.1002/batt.201800040

Table 2. Reviews published in *Batteries & Supercaps*.

Corresponding author(s)	Title	DOI
Kah Chun Lau, Dongsheng Geng, Xiangbo Meng Yang Xia, Xinhui Xia	Atomic and Molecular Layer Deposition for Superior Lithium-Sulfur Batteries: Strategies, Performance, and Mechanisms Multiscale Porous Carbon Nanomaterials for Applications in Advanced Rechargeable Batteries	10.1002/batt.201800024 10.1002/batt.201800067
Douglas G. Ivey	Synthesis of Bifunctional Catalysts for Metal-Air Batteries Through Direct Deposition Methods	10.1002/batt.201800069
Seok Park, Bao Yu Xia	Recent Progress on Transition Metal Oxides as Bifunctional Catalysts for Lithium-Air and Zinc-Air Batteries	10.1002/batt.201800082
Jun Huang, Zhangquan Peng Zongping Shao	Understanding the Reaction Interface in Lithium-Oxygen Batteries Recent Advances in Metal-Organic Framework Derivatives as Oxygen Catalysts for Zinc-Air Batteries	10.1002/batt.201800083 10.1002/batt.201800093



Mathias Wiechen (right) investigated manganese oxides for bioinspired water oxidation catalysis at the University of Kiel in the Kurz group for his Ph.D. thesis. He then did a postdoc with Prof. Spiccia at Monash University on a Feodor Lynen Research Fellowship from the Alexander von Humboldt Foundation, focusing on integrated devices for sunlight driven water splitting for solar fuels production, followed by a stint in the group of Prof. Driess at the Technische Universität Berlin, focusing on heterogenising photocatalytic reaction pathways.

Xin Su (left) received his B.Sc. in chemistry from Nankai University in 2009. He then moved to the USA and conducted graduate research on hydrazone-based molecular switches and functional materials at Dartmouth College where he received his Ph.D. in organic chemistry in 2013. Following postdoctoral training at the National Energy Technology Laboratory in Pittsburgh, he worked as an associate editor for Wiley's materials science journals including *Advanced Materials* from 2015 to 2017. After spending a year at SpringerNature as a senior editor of *Nature Chemistry*, Xin joined the editorial team of *Angewandte Chemie* in 2018.

Greta Heydenrych (middle) has been with Wiley-VCH since 2007. Starting out as an Assistant Editor for the ChemPubSoc Europe journal *ChemPhysChem*, today she is Editor of *ChemPhysChem*. Her work also entails the development of our society publishing programme, resulting in the recent launches of *ChemElectroChem*, *ChemPhotoChem*, *Batteries & Supercaps* and *ChemSystemsChem*. Greta did her Ph.D. at the University of Stellenbosch on homogeneous catalysis and computational chemistry under the tutelage of Jan Dillen and Helgard Raubenheimer. In the year before joining Wiley-VCH, she was a post-doc at the Philipps-Universität Marburg in the group of Gernot Frenking, where she studied structure–property relations of small molecules and organometallic compounds.

chemistry, a field of chemistry in which the properties of interacting networks of chemicals or molecular assemblies/components, mostly away from equilibrium, are investigated. If you are active in the fields of responsive materials or reaction networks, *ChemSystemsChem* is the journal for you! More information can be found on our website: chemsystemschem.org.

In 2019 we will merge our two article types "Communication" and "Article" into only one kind of article. The communication/full paper dichotomy stems from a time where the production time of an article was determined by its length. Thus, if an urgent and important discovery was made, it was published in as brief a format as possible. With modern production workflows, the

length of an article hardly has an influence on the time needed to prepare it for typesetting (with the possible exception of very long articles and reviews). Instead, the communication format has tempted many researchers to parcel their work into smallest publishable units, an unfortunate practice that leads to needless fragmentation of the literature. For this reason, *Batteries & Supercaps* and its ChemPubSoc Europe and ACES sister journals have decided to do away with the distinction between communications and full papers and to publish only one format of primary research paper. There will be no length restrictions in either direction, so short contributions would still be welcome. Submissions that receive truly outstanding reports will be fast-tracked in our production queue, independently of their length. In this way, work that deserves quicker publication will be available in its final version more quickly.