Advanced Science – On the Route to Open Research

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In conversations with our readers and authors, we have been noticing an increasing demand for Open Research for several years. This demand is further intensified by requests of funding organizations as well as politics. Open Research is a very broad term that covers various aspects of science becoming more open, accessible, efficient, democratic, and transparent, as defined by the European Commission. Certainly, publishers and journals play an essential role in this process. We do not only consider Advanced Science at the forefront of this development, but we are also committed to further boost this process.

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The exceptional quality of our publications is guaranteed by a fast, rigorous and strict peer-review process. Starting in 2020, our referees will have the option to receive ORCID-reviewer recognition. This is realized in a very convenient and automated way and represents an additional step towards Open Research. As a result, we are confident that our ongoing ambition to facilitate interdisciplinary collaborative science and efficient impactful research will continue to be prosperous.

The key performance indicators for Advanced Science illustrate that our way towards Open Research is going in the right direction. Submissions increased by more than 60% and the number of published papers increased by more than 35% compared to the previous year (both values at the time of writing 2019). The impact factor raised to a record value of currently 15.804, which represents an increase of 27% compared to 2018. Overall the number of downloaded articles nearly doubled within the last 12 months. Figure 1 shows this continuing and lasting trend in a striking way.

On the occasion of our 5th anniversary in 2019, we invited our executive advisory board members to contribute articles for a celebratory series to be published in a continuously expanding virtual issue (https://onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)2198-3844.AnniversaryVirtualIssue). These articles showcase outstanding achievements of leading international researchers in the field of materials science, physics and chemistry, medical and life sciences, as well as engineering. In case you are interested in getting to know our executive advisory board members on a more personal level, I would like...
Table 1 shows the papers with the strongest influence on the coming impact factor in 2020. These publications are mainly from energy related topics, like batteries, supercapacitors, and water splitting. Table 2, on the other hand represents those *Advanced Science* articles published in 2019 that received the highest Altmetric score. This number is an indication of the attention that a publication gained, with red color indicating mainstream media coverage on news platforms, yellow indicating blogs, and blue representing Twitter activities. The table nicely reflects the broad topical scope of our journal with research on 3D printed hearts, or bacterial resistance and new insights into Alzheimer’s disease, to more material science-oriented topics on energy storage or the world’s thinnest gold.

With all this growth, more dedicated people are needed to run the journal. I am happy to announce that we have 2 new Deputy Editors (supporting Anne Pfisterer, Prisca Henheik, and me): Ulf Scheffler was promoted to a Deputy Editor position in *Advanced Science* already in summer 2019. Bo Weng from our Beijing office joins the team as a new Deputy Editor for the new year. This growing team is happy to receive feedback and suggestions, and of course looking forward to an interesting and successful new year full of exciting research submitted to *Advanced Science*.

Within only a few years, *Advanced Science* has evolved into an impactful, well-known, and eminently respectable journal that publishes the best international research from all areas of

Table 1. Highest cited manuscripts in 2019.

| Manuscript Title                                                                 | Corresponding Author(s), Affiliation(s)                                                                 | Publication Date | Cited in 2019 | Total Citations |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|---------------|-----------------|
| Battery-Supercapacitor Hybrid Devices: Recent Progress and Future Prospects     | Jinping Liu, Yuanyuan Li et al., Wuhan University of Technology and Huazhong University of Science & Technology, China | July 2017        | 179           | 314             |
| Large-Area Carbon Nanosheets Doped with Phosphorus: A High-Performance Anode    | Xiaobo Ji et al., Central South University, China                                                    | January 2017     | 102           | 187             |
| Material for Sodium-Ion Batteries                                              |                                                                                                       |                  |               |                 |
| Extremely Stretchable Strain Sensors Based on Conductive Self-Healing Dynamic Cross-Links Hydrogels for Human-Motion Detection | Pooi See Lee et al., Nanyang Technology University, Singapore | February 2017    | 111           | 176             |
| Electrocataysts for Hydrogen Evolution in Alkaline Electrolytes: Mechanisms, Challenges, and Prospective Solutions | Ji-Jun Zou et al., Tianjin University, China                                                        | February 2018    | 107           | 144             |
| Recent Progress in Energy-Driven Water Splitting                               | Ming-Yong Han et al., Agency for Science, Technology and Research, Singapore                         | May 2017         | 97            | 174             |
| Advanced Architectures and Relatives of Air Electrodes in Zn-Air Batteries      | Bao Yu Xia et al., Huazhong University of Science & Technology, China                                | April 2018       | 96            | 136             |
| Catalytic Effects in Lithium-Sulfur Batteries: Promoted Sulfur Transformation and Reduced Shuttle Effect | Quan-Hong Yang, Wie Lv et al., Tianjin University and Tsinghua University, China                   | January 2018     | 80            | 110             |
| Recent Breakthroughs in Supercapacitors Boosted by Nitrogen-Rich Porous Carbon Materials | Zhen Zhou et al., Nankai University, China                                                          | August 2017      | 78            | 125             |
| Advanced Micro/Nanostructures for Lithium Metal Anodes                         | Qiang Zhang, Yu-Guo Guo et al., Tsinghua University, University of Chinese Academy of Science, Beijing, China | March 2017       | 83            | 184             |
| Hierarchically Nanostructured Transition Metal Oxides for Lithium-Ion Batteries | Huan Pang et al., Yangzhou University, China                                                          | March 2018       | 78            | 100             |
natural science. This would certainly not have been possible without the tremendous support by our readers, executive board members, reviewers, and authors. We would like to thank you and we are looking forward to a great future.

On behalf of the whole editorial team,

Kirsten Severing
Editor-in-Chief

Table 2. Manuscripts with highest media attention (Altmetric Score).

| Altmetric Score | Manuscript Title                                                                 | Corresponding Author(s)       | Affiliation(s)                                      |
|-----------------|----------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------|
| 1852            | 3D Printing of Personalized Thick and Perfusable Cardiac Patches and Hearts       | Tal Dvir et al.               | Tel Aviv University, Israel                         |
| 390             | Sub-Nanometer Thick Gold Nanosheets as Highly Efficient Catalysts                | Stephen D. Evans et al.       | University of Leeds, United Kingdom                 |
| 246             | A Chest-Laminated Ultrathin and Stretchable E-Tattoo for the Measurement of Electrocardiogram, Seismocardiogram, and Cardiac Time Intervals | Nanshu Lu et al.              | University of Texas at Austin, USA                  |
| 218             | Proanthocyanidin Interferes with Intrinsic Antibiotic Resistance Mechanisms of Gram-Negative Bacteria | Nathalie Tufenkji et al.      | McGill University, Montreal, Canada                |
| 161             | An Evolvable Organic Electrochemical Transistor for Neuromorphic Applications   | Magnus Berggren, Simone Fabiano et al. | Linköping University, Sweden                      |
| 135             | Solar Energy Storage by Molecular Norbornadiene–Quadricyclane Photoswitches: Polymer Film Devices | Anne Ugleholdt Petersen, Kasper Moth-Poulsen et al. | Chalmers University of Technology, Gothenburg, Sweden |
| 124             | The Puzzle of the Walnut Shell: A Novel Cell Type with Interlocked Packing       | Notburga Gierlinger et al.    | University of Natural Resources and Life Sciences Vienna Austria |
| 112             | An On-Chip Quad-Wavelength Pyroelectric Sensor for Spectroscopic Infrared Sensing | Thang Duy Dao, Tadaaki Nagao et al. | National Institute for Materials Science, Tsukuba, Ibaraki, Japan |
| 102             | Graphene–Graphite Polyurethane Composite Based High-Energy Density Flexible Supercapacitors | Ravinder Dahiya et al.       | University of Glasgow, United Kingdom               |
| 101             | Blood–Brain Barrier Dysfunction in a 3D In Vitro Model of Alzheimer's Disease   | Roger D. Kamm, Rudolph E. Tanzi et al. | Massachusetts Institute of Technology, USA, Singapore-MIT Alliance for Research & Technology (SMART), Singapore, Harvard Medical School, USA |

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