

World's Leading Trade Fair for Laboratory Technology,  
Analysis and Biotechnology, and analytica conference  
March 31–April 03, 2020, Messe München, Germany

Weltleitmesse für Labortechnik,  
Analytik und Biotechnologie und analytica conference  
31. März–03. April 2020, Messe München

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Munich, January 8, 2020

## Press Release

### analytica 2020: New instruments for battery research

- The world's leading trade fair as a driving force for global cooperation
- Modern analysis indispensable for battery research
- All leading instrument manufacturers represented at analytica

Researchers all over the world are working on powerful batteries for the energy revolution. Modern analysis technology is indispensable for this. Analytica therefore focuses on new devices and methods for battery research. The world's leading trade fair for laboratory technology, analysis and biotechnology with accompanying analytica conference will take place from March 31 to April 03, 2020, on the fairgrounds of Messe München.

Lithium-ion batteries are used in electric cars, smartphones and many other mobile devices. Nevertheless, they have various disadvantages – from questionable ingredients such as cobalt to flammability and self-discharge. Researchers around the world are therefore working to optimize lithium-ion batteries, or to develop alternatives such as sodium ion batteries. For this, they need the latest analytical methods.

“Many equipment manufacturers have recognized the urgency in battery and power research and specified their systems accordingly,” explains Susanne Grödl, Exhibition Director analytica at Messe München. analytica presents the entire gamut of analysis systems that contribute to further development of storage technology for electric energy. The recently published [“Trend Report Battery and E-Mobility”](#) also provides information on highlights from battery research.

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### **Technologies for better batteries**

Anyone who wants to develop better batteries must understand the processes inside the cell. For example, the ageing of the electrolyte, that conductive medium between the two electrodes, is crucial for the safety, service life and performance of a battery. In particular, spectroscopic methods and the coupling of chromatography and mass spectrometry are being used by researchers to investigate which undesirable substances are produced during electrolyte ageing. Based on this knowledge, more stable electrolytes and new electrolyte additives are developed.

The electrodes likewise change over time. In lithium-ion batteries, for example, branch-like lithium protrusions, so-called dendrites, can form on the negative electrode. They are considered to be a causative factor of internal short circuits and battery fires. Microscopy methods – from light microscopy to extremely high-resolution atomic force microscopy – make dendrites visible and provide information for the development of safe batteries. Surface-sensitive techniques such as ATR-FTIR spectroscopy and Raman imaging also identify alterations and deposits on the electrodes.

In addition, battery research needs devices for determination of physical parameters. Surface measuring instruments, for example, support electrode design, because large electrode surfaces increase battery capacity and allow rapid charging. Calorimeters, in turn, can be used to investigate the heat emission of batteries, which is related to self-discharge.

### **Instruments for battery research at analytica**

At analytica, interested parties can find out which analysis method is best suited to a specific problem. Instruments for battery research are offered by Bruker, Metrohm, Thermo Fisher Scientific, Shimadzu and many other exhibitors.

“Battery research is innovative cutting-edge research that requires cutting-edge analysis systems,” emphasizes analytica’s Exhibition Director Grödl. In order to ensure that new instruments meet the high requirements, in the development of



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many instruments manufacturers and users collaborate closely. Grödl emphasizes: “Analytica sees itself as a driving force behind such cooperations. We are therefore delighted that all leading suppliers of analysis systems will be presenting their innovations at analytica.”

**About analytica**

analytica is the world's leading trade fair for the laboratory technology, analysis and biotechnology industries and their users in research and business. The trade fair will be complemented by the analytica conference, where the international scientific elite meet for discussion of current topics in chemistry, biochemistry and laboratory medicine. At the analytica 2018, there were 35,626 visitors and 1,163 exhibitors. Since 1968, analytica has been held biannually in Munich. The next event will be from March 31 to April 03, 2020. [www.analytica.de](http://www.analytica.de)

**analytica worldwide**

Messe München is the world's leading trade fair organizer for laboratory technology, analysis and biotechnology: The analytica network comprises – in addition to the world's leading trade fair analytica – analytica China, analytica Anacon India with India Lab Expo, analytica Vietnam, and analytica Lab Africa.

**Messe München**

With more than 50 special trade fairs for capital goods, consumer goods and new technologies, Messe München is one of the world's leading trade fair organizers. In total, every year more than 50,000 exhibitors and some three million visitors take part in the more than 200 events on the exhibition grounds in Munich, at the ICM – International Congress Center Munich –, at the MOC Veranstaltungszentrum Munich, and abroad. Together with its subsidiaries, Messe München organizes trade fairs in China, India, Brazil, Russia, Turkey, South Africa, Nigeria, Vietnam and Iran. With a network of affiliated companies in Europe, Asia, Africa and South America, as well as around 70 foreign representations for more than 100 countries, Messe München is globally present.