

## Bruker Highlights New Systems and Applied Market Solutions at Pittcon

PHILADELPHIA, Pennsylvania – March 18, 2019 – At Pittcon 2019, Bruker (Nasdaq: BRKR) this week highlights new and innovative analytical systems and high-value applied market solutions for food analysis, pharma applications, materials science research and quality control, clinical and preclinical research, and advances in scientific software solutions.

Frank H. Laukien, Ph.D., Bruker's President and CEO, commented: "Our new analytical instruments and solutions shown at Pittcon 2019 demonstrate the diversity and flexibility that Bruker brings to the world of laboratory science. Bruker is committed to providing the best technological solutions to meet the analytical requirements of our customers, and that includes increasing our presence in the laboratory software and applied solutions markets."

### Applied and Industrial R&D and QC

The novel **INVENIO-S** FTIR system is the entry-level version of the flexible and innovative INVENIO® platform, replacing the very successful TENSOR FTIR series. The **INVENIO-S** is a new, high-performance FTIR spectrometer focused on maximum productivity in advanced laboratory analysis and research. Bruker's permanently aligned **RockSolid™** interferometer, **CenterGlow™** IR source, temperature controlled DTGS, and the long-life diode laser together ensure best performance, robustness and low running costs. The integrated touch panel operation provides intuitive guidance with typical workflows from routine analytical QC protocols to R&D applications.

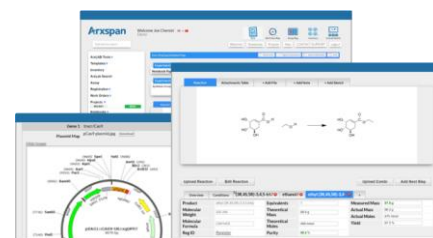


The new **G6 LEONARDO™** is an economic, robust and precise inert gas fusion (IGF) analyzer for oxygen, nitrogen and hydrogen (ONH) concentration measurements in inorganic samples. The G6 LEONARDO introduces **SampleCare™** into IGF-analysis for metals and ceramics, and deploys the **Smart Molecule Sequence™** for elemental analysis. With its pre-calibrated standard methods and argon gas instead of helium, the G6 LEONARDO addresses the needs of industrial process and QC for easy and cost-effective operation.



### Laboratory Software and Solutions for Pharma

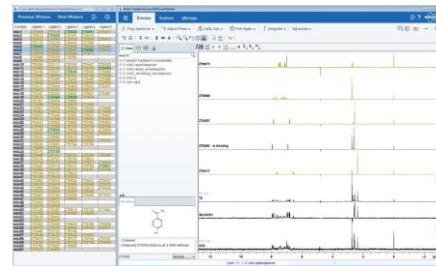
Bruker announced that it has acquired **Arxspan LLC**, a provider of cloud-based scientific software and workflow solutions. Arxspan is known for its line of cloud-based products for the management of research data, with a focus on serving pharmaceutical and biopharma customers. Bruker can now provide a range of software tools for customers in the chemistry, pharmaceutical, biopharma and analytical laboratory markets. Together with the Mestrelab strategic partnership and majority investment, the acquisition of Arxspan will allow Bruker to offer state-of-the-art chemistry and biopharma software tools, supporting discovery and development.





### ***Bruker and Mestrelab Expand Software Solutions Portfolio***

for applied NMR: The laboratory of tomorrow requires the integration of multiple technology platforms. The strategic collaboration of Mestrelab and Bruker is expected to provide a simple, instrument-to-result automation environment that allows users to build automated solutions tailored to their workflow. An example is the integration of Bruker's [Fragment-Based Screening \(FBS\)](#) solution with Mestrelab's [MScreen](#) software, which provides drug discovery groups with an integrated experience from data acquisition and data analysis to the identification of hits in FBS-by-NMR campaigns.



Bruker also announces [minispec Form Check](#), a reliable and affordable TD-NMR (Time-Domain Nuclear Magnetic Resonance) solution to monitor phase purity and quantify physical API (Active Pharmaceutical Ingredient) forms including amorphization. The patent pending ***minispec Form Check*** uses  $^1\text{H}$  or  $^{19}\text{F}$  relaxometry data as easy-to-obtain fingerprints for expected components in solid mixtures, replacing excessive calibration, delicate sample preparation and expert know-how. In the pharma industry, API form characterization and quantification are important from drug development and formulation to manufacturing, where it is important to understand how solid API forms are influenced by production and storage.

**Quantitative Performance Qualification (qPQ) for Quantitative NMR (qNMR) Applications:** A collaboration between Bruker and MilliporeSigma has led to the development of certified reference materials (CRM) tailored to qNMR. A novel, two-component mixture manufactured in the ISO/IEC 17025 and ISO 17034 accredited workflow at MilliporeSigma is the basis of the new qPQ test. This qPQ is now incorporated within the Bruker *AssureSST*<sup>TM</sup> software, allowing automated PQ tailored to qNMR.

### **Food Analysis Solutions**

Bruker announced the launch of the [MIRA](#) milk analyzer based on infrared technology, as well as the [GLOBULYSER](#) for analyzing the homogenizer efficiency of raw milk and liquid milk products. The ***MIRA*** features ease-of-use in a high precision analyzer with IR technology. ***MIRA*** is a robust, cost-effective solution for QC of raw milk, processed or standardized milk, whey and cream. The ***GLOBULYSER*** has been developed in cooperation with the dairy industry to create an easy-to-use analyzer for mean fat globule size in milk, liquid milk products, and in dissolved milk powders.



The new, proprietary [Honey-Profiling 2.0 Method](#) for the Bruker [NMR FoodScreener](#)<sup>®</sup> platform now further improves the detection of sugar syrups, and considerably expands the scope of geographical and botanical honey origins that can be verified, including the popular manuka honey which is subject to frequent fraud due to its high value. The expanded 2.0 method was developed in collaboration with partners QSI and Alnumed, and features a reference database containing over 18,000 honey samples, 50 geographical origins and 100 botanical varieties. With ***Honey-Profiling 2.0***, a comprehensive analysis of authenticity and quality is performed under automation in 25 minutes.



## Clinical Phenomics and Proteomics

Bruker and Murdoch University have announced a collaboration for a phenomics center of excellence in Australia to further develop ***NMR and MS-based Precision Medicine Solutions***. [Murdoch University](http://www.murdoch.edu.au) (www.murdoch.edu.au), the Australian National Phenome Center (ANPC, a core platform of the Western Australian Health Translation Network) and Bruker announced a memorandum of understanding for a metabolomics research and instrumentation infrastructure collaboration to develop the world's premier phenomics center for the advancement of precision medicine.

*Jeremy Nicholson, Ph.D., ProVice Chancellor of Health Sciences at Murdoch University and leading the APCN, commented: "This collaboration brings state-of-the-art instruments and experienced professionals to Australia, augmenting the growing investment in precision medicine in the Asia Pacific region. Working with Bruker the ANPC at Murdoch aspire to create new disease prevention and treatment strategies through integrative studies of humans in their total environment. This will enable better understanding of gene-environment interactions that determine health status of individuals and populations. We wish to leverage key technology advantages offered by Bruker platforms and address new challenges that link precision nutrition and health programs to large scale food screening and population phenotyping. Such precise data will allow clinicians to better predict health problems and intervene earlier, saving time, money and lives. The potential of this research to provide truly personalized care is remarkable."*

## Microscopy, Preclinical Imaging and Nanoanalysis

The new ***SKYSCAN™ 1273*** 3D X-ray microscope (XRM) sets a new standard for high-resolution non-destructive testing (NDT) with benchtop microCT systems with performance previously only achieved by floor standing systems. Samples with up to 20kg weight and up to 500 mm length and 300 mm diameter can be investigated. The combination of an innovative X-ray source running at higher power settings and a 6-megapixel flat-panel detector with high sensitivity and speed provides excellent image quality in seconds. Areas of application range from manufacturing, geology, oil and gas exploration to bone imaging.



Bruker announces an order from the Champalimaud Foundation in Portugal for the world's first, preclinical ***BioSpec® 18 Tesla ultra-high field magnetic resonance imaging (MRI)*** system for delivery in 2021. The ultra-high magnetic field and sensitivity-enhancing CryoProbes will be used to develop novel contrasts in MRI and MR spectroscopic imaging. These new methods will be applied to investigate cancer, metastasis and premetastatic niches *in vivo* in multiple animal models of cancer; as well as for advanced neuroscience research on mouse brain plasticity and activity. The novel MRI system will enable truly microscopic 3D spatial resolution *in vivo*, allowing very detailed morphology investigations.





The [JPK NanoWizard® ULTRA Speed 2](#) combines high speed and resolution AFM with advanced bio-imaging features. Developed in close collaboration with bio-AFM customers, the system is the first new product to come out of Bruker's JPK BioAFM business, formed in July 2018 with the acquisition of JPK Instruments AG. With an AFM scanning speed of 10 frames per second, true atomic resolution and advanced life-science capabilities, it raises the bar in technical performance for correlative microscopy applications.



The new [Dimension XR™](#) family of scanning probe microscopes incorporate major AFM innovations, including Bruker's proprietary and exclusive DataCube nanoelectrical modes, AFM-SECM for energy research, and the new [AFM-nDMA mode](#), which for the first time correlates polymer nanomechanics to bulk dynamic mechanical analysis (DMA). Dimension XR is available in three configurations optimized for nanomechanics, nanoelectrical or nanoelectrochemical applications. These systems significantly expand researchers' ability to quantify material properties at the nanoscale in air, fluids, electrical and chemically reactive environments.



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Please join us at Bruker's Pittcon booth # 2754 throughout the conference, and at our press conference on Tuesday, March 19, 2019, at 10:30 am to 11:30 am EDT at the Pennsylvania Convention Center, Room Banquet – 204 A. For more information on Bruker at Pittcon 2019: <https://www.bruker.com/events/pittcon/press-conference>

### **About Bruker Corporation (Nasdaq: BRKR)**

Bruker is enabling scientists to make breakthrough discoveries and develop new applications that improve the quality of human life. Bruker's high-performance scientific instruments and high-value analytical and diagnostic solutions enable scientists to explore life and materials at molecular, cellular and microscopic levels. In close cooperation with our customers, Bruker is enabling innovation, improved productivity and customer success in life science molecular research, in applied and pharma applications, in microscopy and nanoanalysis, and in industrial applications, as well as in cell biology, preclinical imaging, clinical phenomics and proteomics research and clinical microbiology. For more information, please visit: [www.bruker.com](http://www.bruker.com).

#### **Investor Contact:**

Miroslava Minkova  
Director, Investor Relations & Corporate Development  
T: +1 (978) 663-3660 x1479  
E: [miroslava.minkova@bruker.com](mailto:miroslava.minkova@bruker.com)

#### **Media Contact:**

Thorsten Thiel, Ph.D.  
VP of Group Marketing  
T: +49 (721) 5161-6500  
E: [thorsten.thiel@bruker.com](mailto:thorsten.thiel@bruker.com)