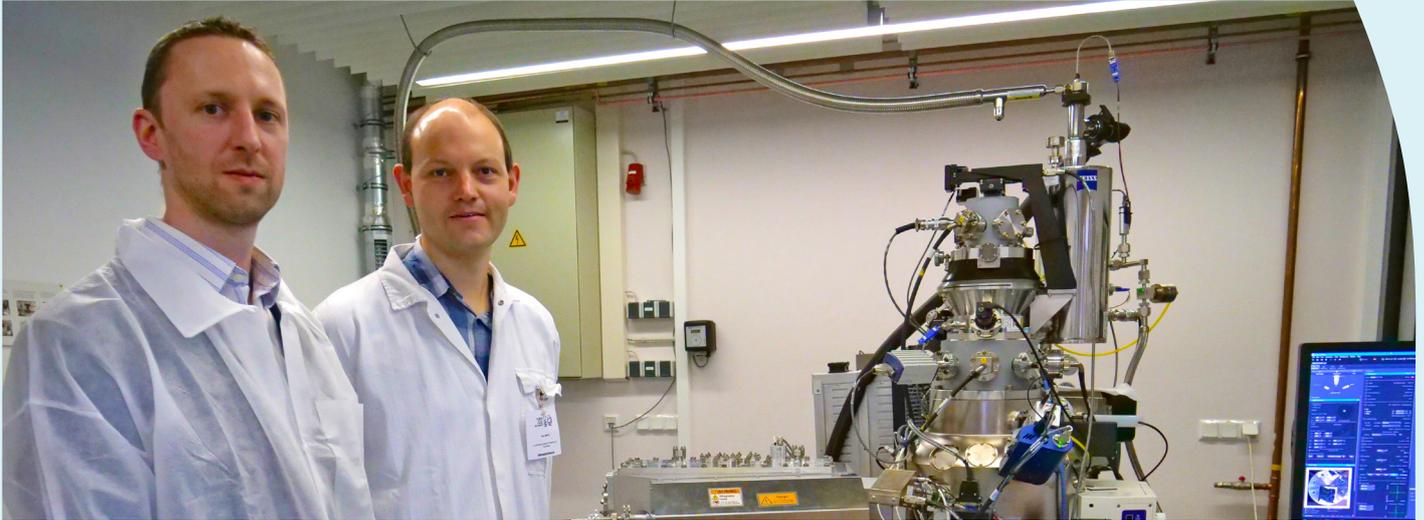


# THE MONTHLY LIST

MARCH 2018



## NEW LIST SPIN-OFF UNLOCKS THE SECRETS OF THE INFINITELY SMALL

In February 2018, the latest spin-off from the Luxembourg Institute of Science and Technology (LIST), spread its wings. Luxembourg Ion Optical Nano-Systems sàrl, LION in short, will harness an innovative world-first technology, developed at the LIST laboratories, which allows the infinitely small to be explored at scales never previously achieved.

LION Nano-Systems, founded in August 2017 with the support of LIST, relocated in February 2018 to Technoport, the national technology incubator. Dedicated to designing cutting-edge analytical instruments for scientists, LION Nano-Systems will market a remarkable tool developed by LIST researchers. The SIMS VECTOR500 tool has become the preferred option within the scientific community and among industry actors seeking to explore the infinitely small. A commercial licence for this technology, which is protected by several patents filed by LIST, has been granted to LION Nano-Systems.

The unique technology combines a powerful ion microscope and a Secondary Ion Mass Spectrometry (SIMS) imaging instrument with the highest resolution in the world. The SIMS VECTOR500 enables scientists to conduct surface analyses at a resolution of around 10 nanometres, i.e. up to 10,000 times smaller than the diameter of a human hair. Whereas existing instruments only offer a resolution of 50 nanometres, the SIMS VECTOR500 gives users the most subtle and accurate possible knowledge of the analysed material, knowledge that is essential for uses such as developing various types of application, adapting production processes, and testing the success of a new product. This makes the SIMS VECTOR500 the best performing tool on the market for research and development applications in fields as diverse as nanoparticle toxicity testing, photovoltaics, semi-conductors, Li-ion batteries, steel, cosmetics and medicine.

The history of the technology transferred to LION Nano-Systems began in 2011 when the Carl Zeiss company and LIST joined forces. A first prototype was developed by the LIST researchers, and then tested in the LIST and Carl Zeiss facilities. In total, it took no fewer than four research projects, spanning over seven years and combining public, institutional and industry funding with, respectively, the support of the Luxembourg National Research Fund (FNR), LIST and Carl Zeiss to finally reach an approved and internationally recognised instrument.

The transfer of the SIMS VECTOR500 technology marks the starting point of a close partnership between LION Nano-Systems and LIST, which will remain the spin-off's preferred Research & Development (R&D) partner. [Learn more on www.list.lu/news](http://www.list.lu/news)

Photo: from left to right: David Dowsett, LION Nano-Systems and Tom Wirtz, LIST

# OTHER HIGHLIGHTS



## Luxembourg

### LUXAIR SENIOR MANAGEMENT VISITS LIST

On 21 February 2015, LIST's executive team welcomed Luxair's senior management to its showroom at the Belval research and innovation campus in Esch/Alzette (LU). After a general introduction of LIST's work and mission as a Research and Technology Organisation (RTO) by Fernand Reinig, LIST's CEO a.i., the three directors of each research department at LIST presented their area of scientific expertise. Later on, ITIS department pursued the exchanges in a targeted ideation workshop to discuss further synergies and identify potential for collaborations in the fields of IT and data valorization. [Learn more on www.list.lu](http://www.list.lu)

## Europe

### LIST PRESENTED AT WORLD ECONOMIC FORUM THROUGH BUSINESS REPORT

LIST was recently featured in a special report on Luxembourg, published by "The Business Report" and distributed with the international february issue of "Foreign Policy". As part of a special marketing effort, the report named "The nation with a reach much greater than its borders" was also handed out to participants at the recent World Economic Forum Annual Meeting in Davos (CH). Among the numerous articles, LIST was featured in the "Research" category twice, once in the context of its pioneering work on space mining ("Research institution plots course to help mine moon") and again in the form of a short but comprehensive interview with LIST's CEO ad interim, Fernand Reinig ("Our research has earned us interest from NASA").

[Learn more on www.the-businessreport.com](http://www.the-businessreport.com)



## Scientific Excellence

### PROF. DR JORGE SANZ SPEAKS ABOUT DATA ANALYTICS AT ROTHSCHILD EVENT

On 31 January 2018, Prof. Dr Jorge Sanz, LIST's leading expert in business analytics and regulatory technologies, participated as keynote speaker in the conference "Are you ready for Big Data era?" organised by the Bank Edmond de Rothschild at the Philharmonie Luxembourg. The conference gathered around 300 professionals from companies and institutions across a large array of sectors. Prof. Dr. Sanz's presentation "Leading from Luxembourg: how to drive value from a Big Data" gave deep insights into the world of data and its potential for the development of Luxembourg, whether in the financial industry, the economic world or the daily life of ordinary citizens. [Learn more on www.list.lu](http://www.list.lu)



## Industry

### LIST PRESENTS NEW ENVIRONMENTAL ASSESSMENT TECHNOLOGY IN THE UNITED STATES

On 24-27 January 2018, LIST's experts from the field of Life Cycle Sustainability Analysis participated in the 10<sup>th</sup> Biannual Energy conference in Gainesville, Florida (USA) as the hosts of the 1<sup>st</sup> "SCALEM® users' workshop". The Software for CALCulating EMergy based on life cycle inventories (SCALEM®) has been recently developed by LIST and other research partners (INSA Toulouse, University of Le Havre) to compute eMerger flows by using life cycle inventory (LCI) product system models. Several corporate participants to the conference expressed a wide interest for the software during the three days of the conference, documenting the potential for its transfer to the market. [Learn more on www.list.lu](http://www.list.lu)



## WHERE TOMORROW BEGINS

Located at the heart of Belval's Research & Innovation Campus, LIST can easily connect its 600-plus specialists in materials, environment and IT, including its many PhD students, through a broad range of joint research projects, programmes and partnerships with virtually all of Luxembourg's other major research players. At Belval, the University of Luxembourg, LIH, LISER, Technoport, Luxinnovation and the Luxembourg National Research Fund are all literally within arm's reach.

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