

THE MONTHLY LIST

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LIST-DEVELOPED TECHNOLOGY REWARDED AT 2018 FNR AWARDS

A team of LIST researchers specialized in materials innovation have received an FNR Award for their “Outstanding Research-Driven Innovation” conducted throughout the development of the VECTOR⁵⁰⁰ SIMS, a unique technology that enables scientists to conduct surface analyses at an exceptional resolution of around 10 nanometres.

At the 2018 FNR Awards Ceremony held on Friday 19 October 2018 in Belval, Luxembourg, the Luxembourg Institute of Science and Technology (LIST) won one of the awards attributed each year by the Luxembourg National Research Fund (FNR) to encourage outstanding achievements in R&D and promote science-related activities aimed at the general public and young people.

Dr Tom Wirtz, Rachid Barrahma, Dr Jean-Nicolas Audinot and Olivier Bouton, from the Advanced Instrumentation for Ion Nano-Analytics (AINA) group within LIST's Materials Research and Technology Department and Dr David Dowsett, now manager at Luxembourg Ion Optical Nano-Systems sàrl (LION Nano-Systems) and a researcher at LIST until early 2018, were together awarded one of the two 'Outstanding Research-Driven Innovation Awards'. Marc Hansen, Luxembourg's Delegate Minister for Higher Education and Research, and Marc Schiltz, Secretary-General of the FNR, presented them with the prestigious award.

With this accolade, the FNR recognizes their innovative work to create the VECTOR⁵⁰⁰ SIMS over a period of seven years at the LIST laboratories in Belvaux, Luxembourg. In brief, the VECTOR⁵⁰⁰ SIMS is a unique concept coupling LIST technology in the field of mass spectrometry with a high-resolution ion microscope from ZEISS company. It simultaneously allows the visualization of nanometre sized features and the determination of their chemical composition, whereas existing scientific instrumentation can only do either the one or the other. This unique tool for high-resolution high-sensitivity correlative microscopy is the best performing tool on the market for research and development applications in fields as diverse as photovoltaics, semiconductors, Li-ion batteries, steel, cosmetics, nanoparticle detection and identification, biology and medicine. Already used by a number of R&D labs in industry and academia all over the world, the VECTOR⁵⁰⁰ SIMS has been marketed since August 2017 by LION Nano-Systems, the latest LIST spin-off, in collaboration with ZEISS.

Beyond the innovation itself, the award is a real recognition of the multidisciplinary R&D effort of the prize-winners over the past seven years. Such an innovation is the result of the combination of fundamental research on particle matter interactions, instrument development and application development.

Photo, from left to right: Olivier Bouton (LIST), Dr Jean-Nicolas Audinot (LIST), Dr David Dowsett (LION Nano-Systems), Dr Tom Wirtz (LIST), Rachid Barrahma (LIST).

OTHER HIGHLIGHTS



Business

LIST ENTERS PARTNERSHIP WITH WORLD ALLIANCE TO DEPLOY EFFICIENT ENVIRONMENTAL SOLUTIONS

LIST recently signed a partnership agreement with the Luxembourg Ministry of Sustainable Development and Infrastructure and the World Alliance for Efficient Solutions. Chaired by Bertrand Piccard, also Chairman of the Solar Impulse Foundation, the World Alliance intends to develop an entire ecosystem based on clean technologies in order to promote existing solutions and accelerate their implementation. This new tripartite partnership will accelerate, firstly, the evaluation of the solutions submitted to the Solar Impulse Foundation thanks to the network of clean technology experts at LIST, and, secondly, the deployment of these solutions through the implementation of the bold environmental policy launched by the Luxembourg government.

[Learn more at www.list.lu](http://www.list.lu)

Luxembourg

FIRST BIMEET TRAINING DELIVERED IN LUXEMBOURG

As part of its “BIM-based EU-wide Standardized Qualification Framework for achieving Energy Efficiency Training” (BIMEET) research project, LIST and the Institut National de l’Energie Solaire (INES), the Agence de l’Energie S.A. and the Ordre des Architectes et des Ingénieurs-Conseils (OAI) offered architects and engineers training on the use of Building Information Modelling (BIM) for energy efficiency in buildings. A first in Luxembourg, this training highlighted the importance of such a technology, which, in a context of ever-increasing requirements for energy efficiency, makes it easier to simulate and better coordinate the activities of different actors involved in the construction. [Learn more at www.list.lu](http://www.list.lu)



Scientific excellence

NEW TECHNIQUE FOR IMPROVING SOLAR CELLS PUBLISHED IN NATURE ENERGY

Together with Swiss and Japanese colleagues from the École Polytechnique Fédérale de Lausanne (EPFL), CSEM, and the National Institute of Advanced Industrial Science and Technology (AIST), Santhana Eswara, Tom Wirtz and Nathalie Valle, all researchers at LIST, co-authored a paper for the September edition of *Nature Energy*. In the paper, they presented a new cost-effective method for the formation of passivating contacts for silicon solar, thanks to a single post-deposition annealing step. The method, which could be a drop-in replacement for today’s rear contacts, is therefore well-positioned to be adopted by large-scale manufacturers. [Learn more at www.list.lu](http://www.list.lu)

Events

LIST WELCOMES MINISTER OF THE ECONOMY TO ITS MATERIALS TESTING LABORATORIES

As part of the “Lëtzebuerg kann Zukunft: Journée découverte de l’économie de demain”, LIST opened the doors of its Foetz laboratories, created in 2016, for the first time. During the event, organized on 29 September 2018 by the Ministry of the Economy, the Luxembourg Chamber of Commerce and Inspiring More Sustainability (IMS Luxembourg), LIST’s researchers had the opportunity to present their Materials Testing laboratories not only to the general public but also to Etienne Schneider, Luxembourg Minister of the Economy. [Learn more at 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 within arm’s reach.

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