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Microscopy research ‘made in Luxembourg’ receives Innovation award from international publication

Ground-breaking microscope technology researched by LIST and produced in Luxembourg, has received recognition abroad and an award from a renowned international publication in the industry.

It was back in 2011 when LIST began research into microscope technology with the ability to not only view objects in the minutest details, but also produce chemical composition information simultaneously. Previously microscopes could only perform one task or the other.

Now, nine years since research inception, the programme has received international recognition with an innovation award from Microscopy Today a renowned scientific publication with worldwide circulation.

Short history

The breakthrough research in Luxembourg at LIST, was the first microscope able to view samples in tiny details combined with the capacity to determine what they are made of at the same time.

Based on the very promising breakthrough results obtained from prototype tools, LIST teamed up with Zeiss, an international leading technology enterprise operating in the fields of optics and optoelectronics. The company produced high-resolution microscopes, but they were blind to chemical detection. LIST therefore became the “chemical eyes” for Zeiss microscopes combining the two tasks for the first time.

Further research and tweaking continued until 2018 when a spin-off start-up company was created by LIST and named LION Nanosystems (Luxembourg Ion Optical Nano-Systems Sàrl). The research received an FNR award and funding in the category ‘Outstanding Research-Driven Innovation’, and LION began to produce the unique tools, known as “Vector 500 SIMS”, to be fitted to the Zeiss ORION NanoFab microscopes, making the result of the long-term RDI effort commercially available.

The award

Fast forward to the present day and the three-way partnership of LIST, Zeiss, and LION Nanosystems has now been recognised internationally as the winner of an Innovation Award 2020 by Microscopy Today. This is a major achievement, given the worldwide circulation and recognition of the publication within the scientific world.

But what is Microscopy Today and the award specifically? Tom Wirtz, leader of the programme at LIST and head of the Scientific Instrumentation and Process Technology Unit, explains. “There are different microscopy societies, which all tend to have very specific and scientific journals, and then there is Microscopy Today which is a popular worldwide bimonthly publication. It reaches a very broad public in different fields, from the hardcore microscopy world, to people in a plethora of fields ranging from materials science to biology to geology who use such microscopes on a daily basis without knowing how the machines work. It produces a lot of news in this field, but always tries to explain with articles that scientists without expertise in a given area can understand”.

Having an article published, let alone receiving an award, can have a huge impact, as unlike articles published in journals that require the reader to hunt for them, Microscopy Today is available around the world and read every two months as a route for discovering what is new in the field.

The publicity will benefit the partnership and Luxembourg, and the association together with well-known company Zeiss could lead to generating more partners and customers.

“The world now gets to know that we are good in this field and at developing and researching this kind of technology. It also helps with publicity for LIST, should researchers and companies be interested in collaborating and developing these tools. There really aren’t many other options around the world, and we have found a unique niche area of research we excel at,” stated Tom Wirtz, before concluding on a more personal note. “It is great for the team at LIST, as well as Zeiss and LION Nanosystems, as we started this journey at

LIST nine years ago. Therefore, it is not like a short story that you start and finish. It continues to grow with many different prospects. It also continues to receive praise and recognition and so it is fantastic to receive this award from Microscopy Today”.

Useful links

Luxembourg Institute of Science and Technology (LIST): www.list.lu

LION Nanosystems: www.lion-nanosystems.com

Zeiss Microscopy: www.zeiss.com/microscopy/int/home.html

Microscopy Today (general): www.microscopy.org/microscopytoday.cfm

Link to September Microscopy Today publication: <https://bit.ly/3dNZ39I>

Direct link to Innovation award details: <https://bit.ly/3m8rjXu>

Video: 2018 FNR Award to LIST for 'VECTOR500 SIMS' in the category 'Outstanding Research-Driven Innovation': <https://youtu.be/GLWw7WkC09A>

Technical PDF document attached: [Presentation Vector 500 SIMS](#)

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