More Nanotechnology for Everyone as Nanolund Makes New Investment

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Within the next few years, Lund Nano Lab will move into new premises in Science Village that are twice the current size. The new investment will provide unique opportunities for research and collaboration with the goal of improving conditions for human life and the climate through nanotechnology.

“Now it’s really happening. We are using nanotechnology solutions in everyday life throughout society, whether it’s to diagnose cancer with a high level of precision or using invisible components that allow us to build solar cells into buildings”, explains Anders Mikkelsen, professor of synchrotron radiation who took over take over as the new director of NanoLund from 2021.

The focus of the research at Lund Nano Lab is to produce, investigate and characterise special nanoparticles and materials with unique properties for a wide range of applications. The researchers compare the particles to thin nanowires, just a percent or two of the thickness of a strand of hair, which play a key role as a component in the new materials. Sustainability and human health are two priority areas that also offer a clear societal benefit.

Twice as much space

The existing laboratory on Professorsgatan in Lund were inaugurated in 2007 and now bring together 150 people from around 80 organisations. Since 2016, the premises have been judged to have reached their maximum capacity. The 600 square meters are deemed to limit the development and expansion needed to stay at the cutting edge internationally. Thus, more than twice as much space and major investments in new technology are now being planned at Science Village, the meeting place for research and business being built in the north-eastern Lund and which, among others, includes the research facilities ESS and MAX IV.

“We can see many opportunities and would like to develop the collaboration between researchers and industry. As we are now planning for a new building, it is important for us to create an environment with everything from basic and applied research to connecting to industry, so that we can also contribute to products that will be used in everyday life”, adds Anders Mikkelsen.

He believes that it currently can be difficult for researchers to envision the needs of industry and difficult for the industry to envision how it can use research in nanotechnology to develop new solutions and, for example, reduce energy consumption. The hope is that NanoLund, as part of Science Village with MAX IV and ESS, will serve as a meeting place where research, incubators, start-ups, and development of products for the industry can take place at the same location.

“Together we can get things done. We want to develop this kind of collaboration, and we need more space to do so. If we want our research to also lead to the creation of new companies and nurture new ideas within industry, we must have the necessary equipment in place to stay at the forefront of international developments”, continues Anders Mikkelsen.

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Shared funding

Lund University has promised to bear the costs and responsibility for installing the physical premises. This represents approximately half of the roughly SEK 600 million that the new establishment is estimated to cost. NanoLund will be responsible for the other part – the investment in machines – through co-funding with other stakeholders and donors. To attract larger players, NanoLund considers it essential to demonstrate the societal benefits of nanotechnology even more clearly.

“We have many excellent smaller spin-off companies using the lab today, but we also need to become better at showing off the strengths of the lab to larger companies and industry”, says Heiner Linke, professor of nanophysics and former director of NanoLund, until 2020.

Essential expertise

Maria Messing, researcher in materials science and NanoLund deputy director, emphasises that access to the expertise available at Lund Nano Lab is just as important as the infrastructure and technical equipment.

“We have people who are extremely competent in their fields. For example, I am an expert in developing new materials and studying them using an electron microscope. At the same time, I have a lot to gain from working and collaborating with others, both research engineers and others who use the lab, but who have different specialist skills.”

She hopes that more companies will open their eyes to the opportunities that nanotechnology can offer.

“The Covid-19 pandemic has shown how important it is to unite and solve problems together in different fields of research and in collaboration with industry. I hope that we will be able to get more people to open their eyes to the possibilities of nanotechnology and inspire young people to come to us.”

The start-up company Aligned Bio, which works with diagnostic tools through DNA sequencing and identification of biomarkers, is one of the companies that uses Lund Nano Lab’s nanowires. Erik Smith, CEO and founder, sees many benefits of close collaboration between the University and industry.

“For a small company, Lund Nano Lab makes vital tools and research equipment available that would otherwise be difficult to access”, notes Erik Smith.

He hopes to be part of the Lund Nano Lab even as it moves into its new premises in Science Village.

“Among our expectations for the new lab are even greater access as it expands and even more modern equipment”, he adds.

Read the original article on Lund University.