



## Nanotechnology creates potential for enhanced quality of life

Nanotechnology has the potential to improve people's quality of life all over the world. Lund is home to one of the world's leading research environments in the field, the Nanometer Structure Consortium. Among the consortium's concrete goals is to make light-emitting diodes for energy-efficient water purification into a reality, along with high-efficiency solar power cells and new methods for rapid and simple diagnosis of diseases.

### PIONEERING RESEARCH

Nanoscience is about understanding and explaining how size, material composition and form in very small structures can change the properties of large structures – and how the new properties can be used to improve existing products and enable entirely new applications. The Nanometer Structure Consortium, which was founded in 1988 and currently comprises more than 200 researchers in the Faculties of Engineering, Science and Medicine at Lund University, has the overarching goal of using nanotechnology to tackle important societal needs, for example by contributing to sustainable energy provision and improving people's quality of life in both industrialised and developing countries.

The consortium's research focus is on materials science and the production of unique, functional nanostructures – as well as on their safety and applications – within the fundamental sciences, electronics, optoelectronics and biomedicine. The research environment is focused on nanowires; very thin "rods" of semiconductor material which offer entirely new possibilities in a wide range of scientific and engineering contexts.

### EXTENSION OF LUND NANO LAB

Lund Nano Lab is one of the world's foremost laboratories for the production of nanowires. In order to fully utilise the research, a comprehensive extension is needed.

Needs-driven research focusing on new applications requires specially adapted equipment. This part of the extension has the potential to increase the number of nanoscience-based innovations in the region, as well as improving accessibility for companies to one of Lund University's most successful laboratories. Examples of projects that we want to enable with your support include

light-emitting diodes for energy-efficient water purification, new energy-saving electronic components, high-efficiency solar cells and new methods for rapid and simple diagnosis of diseases around the world.

In order to increase opportunities for the practical training of students in the production and characterisation of nanostructures, which in the long term helps to ensure the supply of expertise in the field while reinforcing our international brand, we need greater resources for equipment. At present, the practical training of more than 100 students per year is carried out on the same equipment used for cutting-edge research, which leads to bottlenecks for both teaching and research.

### VISITING PROFESSORSHIP

A large, creative and interdisciplinary research environment such as the Nanometer Structure Consortium is dependent on constant renewal and influx of new ideas. Being able to regularly invite internationally leading researchers would be an important ingredient in our work, and would contribute to new, important research initiatives.

### FUNDING NEEDS

In order to be able to continue to build on the internationally leading expertise of the consortium's research teams and to be in a position to take on new, urgent research challenges, we need your support.

Research equipment SEK 70 million

Training equipment SEK 27 million

Visiting professorship SEK 1 million per year

All donations are welcome, whether large or small. Together we can work for a better world.

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