Programme overview

Materials make up everything around us and their properties are critical to the performance of any system or device where they are used. Almost every aspect of modern society is touched by a technology made possible by advances in materials. Mobile telephones, catalytic converters, solar cells, optical fibres and smart window materials are all examples of modern technology based upon tailored materials. Since the properties of a material (which determine its function) are determined by both its structure, constituents and the way that the material is assembled, the study of materials involves many different approaches. Materials science is inherently multidisciplinary and relies often on both theoretical modelling and on experimental characterisation.

The Master’s programme in Materials Science is a flexible, interdisciplinary programme. You will learn how important properties of materials depend upon the materials’ structure and constituents. The characterisation of materials by spectroscopy, diffraction and microscopy is an important dimension in the programme, and the new materials science facilities - the MAX IV synchrotron radiation laboratory and the European Spallation Source (ESS) for neutron-based research - are in focus. It is possible to combine theoretical or computational studies with experimental approaches within the programme.

The goal of the Master’s programme is that you become a well-rounded materials scientist who is able to apply the principles of materials science for carrying out engineering and/or research projects. The programme emphasises application of advanced technologies in materials science. The close proximity to large-scale facilities and excellent materials science research groups provides excellent opportunities for inspiring Master’s thesis research projects.

Programme modules/courses
See www.fysik.lu.se/english/education/start-studying/masters-programme for details on compulsory and elective courses.

Career prospects

Materials science is an important field for a variety of areas of science and engineering and graduates will be qualified for employment in fields ranging from industry to research laboratories in areas such as astrophysics, communications, life sciences, energy-related materials and at facilities such as the MAX IV Laboratory or the European Spallation Source (ESS). Both of these large research laboratories require trained staff with a good knowledge of experimental techniques in materials science and physics in general. MAX IV entered into operation in June 2016. ESS is currently under construction, with planned start of operations in 2023. Graduates of the programme will be well qualified for PhD programmes in physics and physical chemistry.

ENTRY REQUIREMENTS

A BA/BSc in physics or similar, with a minimum of 90 ECTS credits in physics and/or physical chemistry, including basic knowledge of quantum mechanics, and a minimum of 30 ECTS credits in mathematics. Elective courses may have specific requirements. Please see course page on the website for details. English 6/English Course B. See www.lunduniversity.lu.se for details on English proficiency levels.

HOW TO APPLY

1. Apply online: Go to www.lunduniversity.lu.se/physics-materials. Click on “Apply” and follow the instructions for the online application at www.universityadmissions.se, the Swedish national application website. Rank the chosen programmes in order of preference.

2. Submit your supporting documents:
   • General supporting documents: Check what documents you need to submit (i.e. official transcripts, degree diploma/proof of expected graduation, translations, proof of English, passport) and how you need to submit them at www.universityadmissions.se.
• Programme-specific supporting documents: When applying this programme, you must also submit a statement of purpose and letters of recommendation with your application.

4. Pay the application fee (when applicable).

SELECTION CRITERIA/ADDITIONAL INFORMATION
Selection of students is based on previous university/college studies and other merits such as letters of recommendation and statement of purpose.

TUITION FEES
There are no tuition fees for EU/EEA citizens. For non-EU/EEA citizens the tuition fee for this programme is SEK 145 000 per year. For details on tuition fees, see www.lunduniversity.lu.se.

About the Department of Physics
The Departments of Physics has over 300 researchers, teachers, technicians and administrators. We work to extend the understanding of physics and its applications, and to communicate our findings, and those of others, to new generations. We also teach the basics of physics to over one thousand students every year.

About Lund University
Lund University was founded in 1666 and is repeatedly ranked among the world’s top 100 universities. The University has 41,000 students and 7,500 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

Lund is Sweden’s most attractive study destination. The University offers one of the broadest ranges of programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. The compact university campus encourages networking and creates the conditions for scientific breakthroughs and innovations. The University has a clear international profile, with partner universities in over 70 countries.

Funding of more than SEK 5 billion a year goes to research at eight faculties, which gives us one of Sweden’s strongest and broadest ranges of research activity. Over 30 of our research fields are world-leading, according to independent evaluations.

Two of the world’s leading materials research facilities are currently under construction in Lund: the MAX IV Laboratory, inaugurated in June 2016, is the leading synchrotron radiation facility in the world, and the European research facility ESS, which will house the world’s most powerful neutron source. The two facilities will be of decisive importance for future scientific and industrial development in both materials science and life science.

Learn more at www.lunduniversity.lu.se
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