

PhD student in physics

The Division of Nuclear Physics at Lund University (DNPLU) and the Detector Division of the European Spallation Source AB (ESS) jointly offer a PhD studentship in the field of neutron-detection techniques.

Description of main responsibilities

Following an initiative undertaken at DNPLU, discussions involving the establishment a three-party detector-development laboratory to be shared by DNPLU, the ESS, and The MAX IV Laboratory are well underway. The ultimate goal of this undertaking is to establish a center of excellence for detector development at Lund University. Of particular interest to the DNPLU and the ESS is the development of neutron-detection techniques. The Photonuclear Group of the DNPLU based at the existing MAX-lab has a long and well-documented history of neutron-detector development. Further information about the activities of the Photonuclear group may be found at <http://www.maxlab.lu.se/kfoto/index.html>. The goal of this PhD project is to design, develop, construct, and then characterize a liquid-scintillator neutron-detector array, particularly in terms of its absolute efficiency for detecting neutrons of various energies. The array thus developed will then be employed in a photoneutron measurement at the Tagged-Photon Facility at MAX-lab. The successful applicant will thus be instrumental to the development of the three-party detector laboratory, and be amongst the first individuals to utilize it. Teaching at up to the 10% level may be a part of the duties of the successful candidate.

Qualifications

Basic entry requirements for PhD studies are: a degree at an advanced level containing at least 240 credits, of which at least 60 are at an advanced level, or corresponding proficiencies.

For special eligibility in Physics, an independent project, equivalent to 30 credits is required, together with courses at an advanced level that provide the relevant background for the planned area of research. Special eligibility may also be achieved through other equivalent education.

For detailed requirements and the selection criteria, see the general study plan for physics at <http://www.naturvetenskap.lu.se/upload/LUPDF/natvet/FU/Studieplan/E.Physics.pdf>.

Documented proficiency with the English language is required. The successful applicant will be expected to spend periods of up to a month at a time at accelerator and neutron facilities outside Sweden, in particular (but not limited to) Europe and the United States.

Regulations for employment

Regulations for employment as a postgraduate student can be found in the Swedish Statute Book (SFS 1998:80). Only those admitted to postgraduate studies can be appointed to such a position. When appointing applicants to such a position, first and foremost, their ability to benefit from postgraduate studies must be taken into consideration. In addition to pursuing postgraduate studies, the doctoral student may also perform other duties, including research, teaching and administration, according to the specific regulations.

A strong interest in experimental techniques is a prerequisite for consideration. Technical competence and hands-on mechanical and electrical proficiency will be considered very strong merits. Experience with the LINUX operating system as well as with computer programming, in particular with the languages C++, C, and to a lesser extent FORTRAN, is an asset. In addition, experience with computer simulations of detectors using codes such as STANTON, GEANT, and MCNP is an asset, as well as data analysis using codes such as ROOT.

Duration & Location

The position is time limited, 4 years of full-time studies. Your work place will be The Division of Nuclear Physics at Lund University (DNPLU).

Start date

The position will be filled as soon as possible.

Application & Contact

Please provide your curriculum vitae and covering letter in English by entering https://dfs.adm.lu.se/E-rek_CV/Login.aspx?Dnr=405083 and following the instructions. Reference number of the position (diarienummer) is NPA 2011/341. The deadline for applications is July 31, 2011.

For further information please contact Kevin Fissum, Scientist,
kevin.fissum@nuclear.lu.se or www.lth.se/fysik/avdelningar/kaernfysik/

The European Spallation Source ESS AB will design, build and operate a multi-disciplinary, large-scale research infrastructure based on the world's most powerful neutron source. ESS will provide scientists with unique and powerful neutron scattering instruments for the study of a large range of materials – from polymers and pharmaceuticals to membranes and molecules. The ESS project is partnered by 17 European countries, and hosted by Sweden and Denmark. The ESS will be built in Lund, Sweden, by a collaboration of European scientists and engineers. ESS is planned to produce the first neutrons by 2019. When the facility is in full operation 2025, ESS has around 450 employees.

ESS aim to ensure that staff are employed on the basis of ability and the requirements of the job, and that no applicant or employee receives less favourable treatment because of race, religion, ethnic origin, gender, sexual orientation or disability.

.....
Charlotta Olsson
HR Administrator

European Spallation Source ESS AB
P.O Box 176, SE-221 00 Lund, Sweden
Visiting address: Stora Algatan 4, Lund

Mobile: +46 767 72 67 07
Phone: +46 46 222 67 07
E-mail: charlotta.olsson@esss.se
www.esss.se