

## **The Machine Directorate at the European Spallation Source (ESS) in Lund, Sweden, invites applications for a PhD in Accelerator Physics position.**

### **Description of directorate and the position**

The Accelerator Division is responsible for the design, construction, commissioning and operation of the ESS accelerator. The pulsed superconducting linac, to be built in Lund, will produce a 5 MW average power proton beam, driving the world's most powerful neutron source. This project is to be carried out at Lund University, at the European Spallation Source in Lund and at LASA (Laboratory of Accelerators and Applied Superconductivity) in Milan, Italy. Two years of the project time will be spent at LASA in Milan. The student will collaborate with a group at LASA that is leading the world in the design of superconducting cavities for accelerators.

### **Description of main responsibilities**

The thesis work covers the domain of multi-cell elliptical cavity design, manufacturing, and testing, for the high intensity proton linac of the ESS. The student will study the performance of the currently proposed cavity design, including developing estimations of the efficiency, peak fields, higher order modes, and the many mechanical properties that combine to determine the successful performance of these cavities. In addition, the student will develop and follow-through the quality control methodologies to ensure that the cavities meet requirements. Known manufacturing technologies will have to be included in the assessment to ensure optimal yield.

### **Qualifications**

To be successful and perform well in this position, the right candidate has:

- A masters degree in Electrical Engineering, Engineering Physics, or related subject
- Good knowledge in electromagnetics
- Experience of microwave theory and accelerator physics and technology is an advantage
- Experience of working in an international environment is essential
- Excellent oral and written English skills are a prerequisite; knowledge of other European languages would be an advantage

In the selection of the candidate, the following aspects are taken into account:

- Grades from Master courses
- Quality of Master thesis and possibly other projects
- Previous experience in the area of microwave technique and accelerator physics and technology
- Technical interview with the candidate

We truly believe that to enjoy and perform in this position, you consider these following competencies as a significant part of your character: You are initiative, creative and a teamplayer.

The position is a time limited position, of 4 years of full-time studies. Your work place will be at LASA in Milan, ESS and Lund University in Lund. Two years of the project time will be spent at LASA in Milan.

### **What ESS can offer**

At ESS we offer people with talent and passion a unique opportunity to be involved in the development and building of a world leading facility for materials research. Besides attractive employment and relocation conditions, the flexibility to balance work life with private life and good opportunities to further enhance your skills; you will also enjoy being part of an organizational culture that promotes and supports internal career growth. We pride ourselves in having successful collaboration across different functions, and as the facility continues to grow we will keep nurturing the international and vibrant environment welcoming people from all across the world.

### **Application & Contact**

Please apply on our homepage; <http://europeanspallationsource.se/vacancies> and provide your curriculum vitae and covering letter in English. *Please note we only accept applications via the ESS website.*

The deadline for applications is **15<sup>th</sup> of February 2015**. For further information regarding the position please contact Mats Lindroos at ESS/Lund University, mats.lindroos[at][esss.se](mailto:mats.lindroos@esss.se), Carlo Pagani at LASA carlo.pagani[at][mi.infn.it](mailto:carlo.pagani@mi.infn.it) and for further information regarding the recruitment process, please contact HR Officer, Kristina Bacos, kristina.bacos[at][esss.se](mailto:kristina.bacos@esss.se).

We look forward to receiving your application.

Med vänlig hälsning / Kind regards

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#### **Kristina Bacos**

HR Business Partner  
European Spallation Source ESS AB  
P.O Box 176, SE-221 00 Lund, Sweden  
Visiting address: Tunavägen 24  
Mobile: +46 72 179 22 76  
Phone: +46 46 888 32 76  
E-mail: [kristina.bacos@esss.se](mailto:kristina.bacos@esss.se)  
[www.esss.se](http://www.esss.se)

The European Spallation Source is a Partnership of 17 European Nations committed to the goal of collectively building and operating the world's leading facility for research using neutrons by the second quarter of the 21st Century