

Lead Scientist: Centralised Polarisation System for Neutron Scattering Instruments

Description of the Directorate / Division / Group

The Instrument Technologies Division is part of the Science Directorate, which executes the Neutron Scattering Systems (NSS) project. The NSS scope is to design, build and commission neutron scattering instruments, and the Instrument Technologies Division, together with its in-kind partners, is dedicated to providing and supporting key components not only during construction but also during operation of the facility's scientific instruments.

Description of main responsibilities

The expected high brightness of ESS is ideally suited to using polarised beams and polarisation analysis on the neutron scattering instruments, which are currently being designed and built by partners involving the majority of neutron scattering facilities in Europe. The use of polarised beams and polarisation analysis allows the unambiguous separation of structural, magnetic and incoherent scattering contributions, which has applications throughout biology, soft matter, chemistry and condensed matter physics taking advantage of the inherent strengths of neutrons in being able to see hydrogen atoms and investigate magnetism in novel materials. Whereas the scientific capabilities of many of the first 15 neutron instruments would benefit from polarisation of incident beams and polarisation analysis of scattered beams, few have this in their current scope of construction. ESS will provide polarisation and polarisation analysis capabilities to the instruments via a central service through the Instrument Technologies Division.

The successful candidate will initially report directly to the Head of the Division but work closely with other scientists and engineers within the Directorate. She/he will need to define the scope and detailed project plan, which will deliver a centralised polarisation system for the neutron scattering instruments by December 2023. She/he will be setting up and executing the project, which will require to liaise with instruments construction teams, ESS Scientific and Technical Advisory Panels and other stakeholders to ensure that technical solutions fulfil not only long-term availability and reliability criteria for systems, sub-systems and components but equally so the high-level scientific requirements of the neutron scattering instruments.

Once the Directorate starts operating the instruments it is foreseen to transfer the position into one of the technical groups within the division to provide support and technical assistance during the operation of instruments.

The successful candidate will need to

- lead in the definition of requirements and technical specifications for polarisation systems based on high-level scientific requirements
- participate in the development of strategies, techniques and methods to ensure optimised systems in performance, reliability and cost
- support in-kind partners in the design and procurement of prototype systems for management of polarisation devices
- support in-kind partners and/or commercial suppliers during testing and installation of systems
- commission a centralised polarisation system on site
- ensure safe operation, performance and maintainability of systems
- support the User Programme during facility operation and maintenance during shutdown periods

Technical competencies

The nature of the position and the changing environment of a complex project requires an agile and flexible person with experience in developing scientific equipment, project management, appreciation of stakeholder requirements, and ideally operational and hands-on experience.

Qualifications

We are looking for a self-motivated person with a PhD degree in one of the natural sciences with Physics being preferred, as well as 5+ years of work experience, preferably at a facility similar to ESS.

Additional skills and competencies would include:

- Being precise, attentive to detail, striving for the upmost quality, always looking to refine methods and techniques to improve the deliverable
- Being able to multi-task and to work to deadlines
- Having experience leading and managing a team of people with different competencies

The candidate should be able to demonstrate experience in:

- Developing scientific requirements of system with due consideration of scientific requirements of neutron scattering instruments
- Developing scope, budget, schedule and associated risks description that will allow project execution
- Participation in development of complex mechanical systems and assemblies
- Manufacturing considerations in the context of prototype developments incl quality assurance

Additional experience would include:

- Track record of project management
- Experience in stakeholder involvement and stakeholder's expectation management
- Experience of working in an international environment

Excellent oral and written English skills are a prerequisite; knowledge of other European languages would be an advantage.

Duration & Location

The position is permanent with six months probation period. The position is to be filled as soon as possible. Your work place will be situated in Lund, Sweden.

Application & Contact

Please provide your curriculum vitae and cover letter in English by clicking on "apply" and following the instructions. Please note we only accept applications via the ESS website.

The deadline for applications is **December 30th, 2018**.

For more information regarding the ESS recruitment process, please follow this link <https://europeanspallationsource.se/ess-recruitment-process>. For further information regarding the position, please contact the Recruiting Manager, Oliver Kirstein oliver.kirstein@esss.se. For further information regarding the recruitment process, please contact HR Officer, Sara Margaryan, sara.margaryan@esss.se

For trade union information please contact Unionen / Michela Dell'Anno Boulton at +46 46 888 30 72 or SACO / Swedish Association of Graduate Engineers/ Riccardo Bevilacqua +46 46 888 32 28.

We look forward to your application!