Swedish Foundation for Strategic Research

2015-10-15

SSF Call for Proposals:

National Graduate School in Neutron Scattering (GS*n*)

SSF announces MSEK 120 for a National Graduate School in Neutron Scattering (GS*n*), which meets the highest international scientific standards. The graduate school will be funded during 5-6 years and is expected to train and graduate about 20 PhD:s, holding a broad competence in neutron scattering-based research, during this period.

SSF further plans to offer the graduate school to apply for a continuation grant, corresponding to MSEK 100, after three years of operation for the graduation of an additional 20 PhD:s, pending a successful half time evaluation.

Background

One of the biggest European research infrastructure projects is being realized in Sweden. The European Spallation Source (ESS) will, according to plan, be up and running in less than 10 years. This facility is a long-term investment, which will strengthen the European Research Area (ERA) and will secure the world-leading position for European neutron scattering based science. Neutron scattering can be applied to a range of scientific questions, spanning the realms of physics, chemistry, geology, biology, and medicine. With a neutron tool kit, the structure and dynamics of materials can be probed over a wide range of length- and time-scales.

The ESS is a unique opportunity for Swedish science and it also holds many industrial opportunities. Presently, however, the planned instruments at ESS have too little Swedish participation. Thus, the Swedish user and knowledge base needs to be both broadened and deepened in order to take full advantage of this new prospect. With the present Call, SSF announces support for a national graduate school in neutron scattering with the aim to strengthen Sweden's long-term competence and competitiveness within this area.

The present SSF initiative weaves into what Nordforsk together with government funding bodies from Norway, and Denmark, and Sweden are planning for a Nordic Neutron Program.

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Scope

The aim of the present Call is to strengthen Sweden's long-term competence and competitiveness within the area of neutron scattering science and technology via the establishment of a national graduate school in neutron scattering. The graduate school is to

- create an educational structure for training a new generation of researchers and research leaders,
- promote a vivid and strong research environment with added scientific value,
- strengthen the recruitment basis and quality,
- encourage national and international networks,
- and stimulate interdisciplinary research.

within applied neutron science, neutron science diagnostics and corresponding fields that can make large advantages from state of the art neutron scattering sources.

Non-exclusive examples of important research and training areas are:

- Sources, Instrumentation, and Software
- Hard and Soft Condensed Matter
- Life Sciences, and Life Science Technologies
- Chemistry and Materials for Energy
- Basic Physics, such as Magnetic and Electronic Phenomena
- Engineering and Geosciences.

The Graduate School should be a close collaboration between a number of Swedish universities, coordinated by a highly respected research leader (PI) at a Swedish university - the latter serving as the host and the administrative organization. Each participating university (node) have co-PI:s who are also excellent scientists in the field. The GS*n* is to develop a state of the art common curricula, with true involvement from all the PI:s, in favor of the prospective PhD students in the graduate school.

SSF envisions 4-6 participating universities in the GS*n*. SSF further anticipate receiving few, but well elaborated, applications in this Call, preferably one application that has adequate coordination between universities for the governance and operation of the graduate school.

The GS*n* must demonstrate connection to the international leaders of the field and include comprehensive use of existing state of the art neutron scattering facilities. For example, it is considered natural that each participating PhD student conducts research exchange with projects at existing state-of-the-art neutron sources around the world.

It is also preferable that the graduate school demonstrates good Nordic and Baltic co-operation. Interaction with industry for engineering and application is also encouraged.

Eligibility

The PhD students should be employed by the participating Swedish universities, but recruited in open competition from all over the world.

The application must be elaborated jointly by all the PI:s in the project and submitted by a PI (main applicant). The main applicant must be a prominent researcher employed by a Swedish university and must be prepared to assume operative responsibility for the project during the entire grant period. Co-applicants are the researchers employed by the

collaborating universities (nodes). The research plan must clearly demonstrate the roles and complementarity of all the co-applicants in the Graduate School. International organisations (partners) may participate on their own budget.

The GS*n* should have a board consisting of five persons, a majority being non-Swedish based experts in the field, with extensive experience of large neutron scattering infrastructures. At least one of the board members should represent the industry sector. The board must be approved by SSF prior to project start and for any personnel changes during the course of operation. The board will have the mandate to recommend SSF to terminate the funding, if they are not satisfied with the performance or development of the GS*n*, or to change the management of the GS*n*.

Each applicant (PI/co-PI) can only be represented in one application to SSF.

The grant must be used for salaries for PhD students and corresponding running costs. Maximum MSEK 20 can be used for development of graduate courses and its conjunct administration, such as salary to a Director of Studies ("studierektor"). The grant is not to be used for salaries for the PI, co-PI:s, or supervisors, but may be used for inviting guest lecturers.

The GS*n* will be evaluated midterm with regard to scientific, curricula, and managerial aspects. For all instances related to the GS, gender equality has to be considered (composition of board, applicants, PhD students, etc.).

Proposal and submission

Being a call of the type "highly elaborated but few applications", vice chancellors are welcome to take initiatives to meet with the management of SSF before submission of proposals to discuss co-ordination.

A complete application must contain, among other data specified in the portal, a full description of the prospected graduate school and full details of the relevant expertise of the participating PI:s, the environments in which they work and their complementarity. Each proposal shall clearly describe the state of the art within the area(s) addressed. It is also important for the proposal to give a clear picture of the resources available and to demonstrate that the proposed constellation of PI:s and GS*n* administration will be effective in view of its objectives.

The application must be signed the vice chancellors of all the participating universities (host and nodes). Furthermore, a support letter from the ESS is required, which attests to their interest and preparedness to interact with the GS*n* for the training of the graduate students, throughout the duration of the graduate school.

The proposal must be written in English and submitted via the SSF portal at: http://apply.stratresearch.se. Note that in order to get a complete view of all data required for submission it is necessary to consult the portal. Please log on to the portal well in advance of the deadline. Please also submit the application in due time before the deadline. When the application is submitted, the system will reject it if some data field is missing. As long as this is done before the application deadline it is possible to submit and re-submit as many times as necessary.

Applications must be submitted by **14:00 hours (2:00 pm CET) on March 15, 2016**. No additional material will be considered after this deadline.

Evaluation

Applications will be assessed by an evaluation committee consisting of external experts.

The applications will be reviewed using the following criteria:

- Conformity to the scope and eligibility as outlined above
- Strengthening of present expertise, building complementary knowledge, and adopting new fields of research
- Governance and management (GSn management structure, student enrolment, common projects, interaction between host and nodes, internationalization, use of existing neutron scattering sources, etc)
- Realistic, feasible, and true collaboration, including complementarity between host and each node
- GS*n* curricula, education and training programme
- Scientific quality; originality, strengths, weaknesses, degree of interdisciplinarity, and feasibility of the plan for the graduate school
- Qualifications of the applicants, previous scientific achievements, international experience and networks, and leadership/management of research teams
- Number of enrolled PhD students, their intended distribution between the different partners (host/nodes), and plan for their graduation.

Timetable

- Last date for applications: **March 15, 2016**, 14:00 CET at the latest
- Review and interaction between SSF and applicant: March – May, 2016
- Decision by the SSF Board: June 21, 2016
- Contract negotiations with SSF
- Project start: September 1, 2016.

No additional material submitted after deadline will be considered.

Please note that the Foundation is subject to the Principle of Public Access to Official Records (Offentlighetsprincipen). Thus, applicants should avoid submitting material that they do not wish to be made public, e.g., information that could prevent patenting.

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