

Swedish Neutron Education for Science & Society

SwedNess

- Swedish national graduate school in neutron scattering
- Collaboration between 6 of Sweden's biggest academic institutions:

CHALMERS



LUND
UNIVERSITY



UPPSALA
UNIVERSITET



Linköping
University



Stockholm
University



- Fully funded by the Swedish Foundation for Strategic Research (SSF), which main goal is to strengthen Sweden's future competitiveness in science, engineering and medicine.
- Bridge between fundamental research and industry).
- Budget 120 MSEK (+100 MSEK) with 20 (+20) PhD Students



SWEDISH FOUNDATION *for*
STRATEGIC RESEARCH



SwedNess - Aims

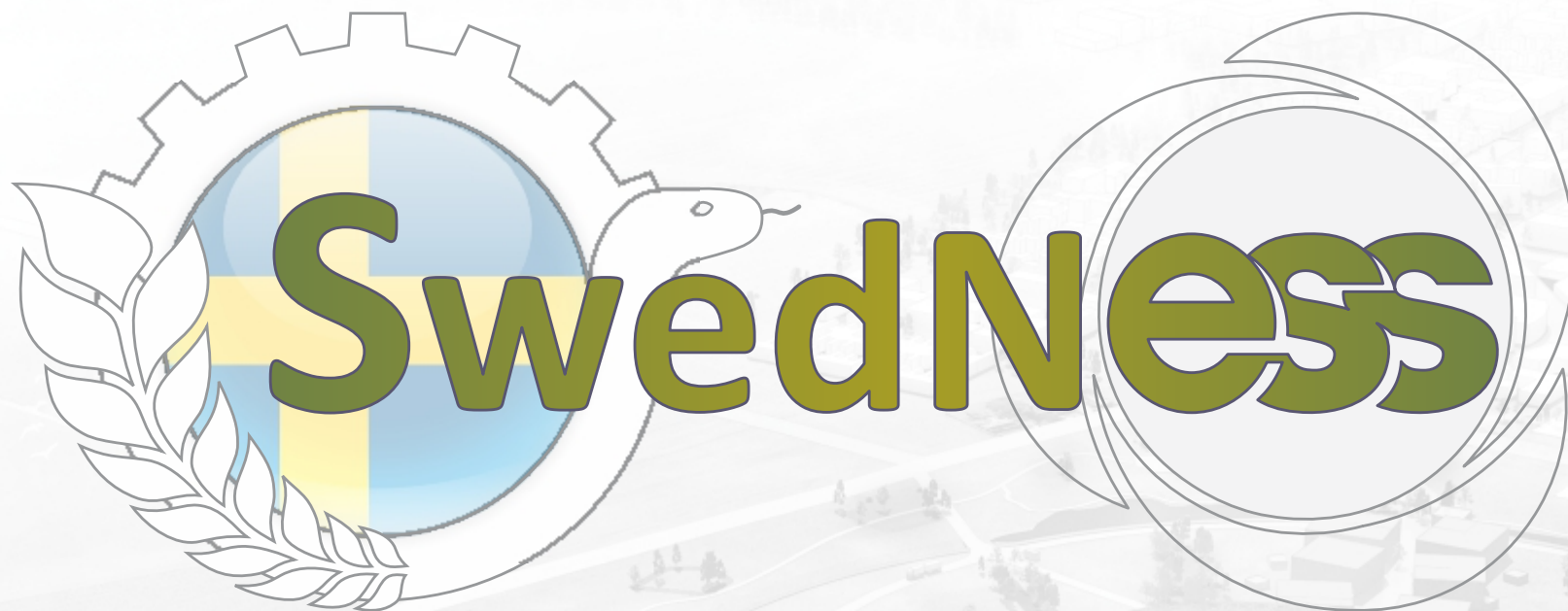
- To expand and broaden the **Swedish neutron scattering community**.
- To support the six participating universities to take **full advantage of the ESS**
- To broaden the national scientific impact by involving **universities outside the alliance** in courses and research projects within SwedNess.
- To perform **excellent research** using NS within four research themes: Functional Materials, Life Sciences, Engineering and Basic Physics/Chemistry
- To promote **interdisciplinary** activities between such research themes.
- To create a strong academic collaboration & networking with **Swedish industry** in the use of neutron scattering.



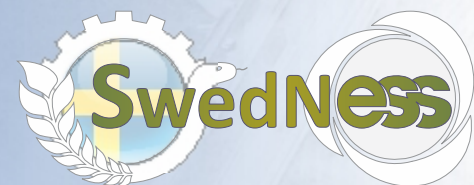
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- To be a strong partner in the **Nordic neutron scattering community**





NNSP

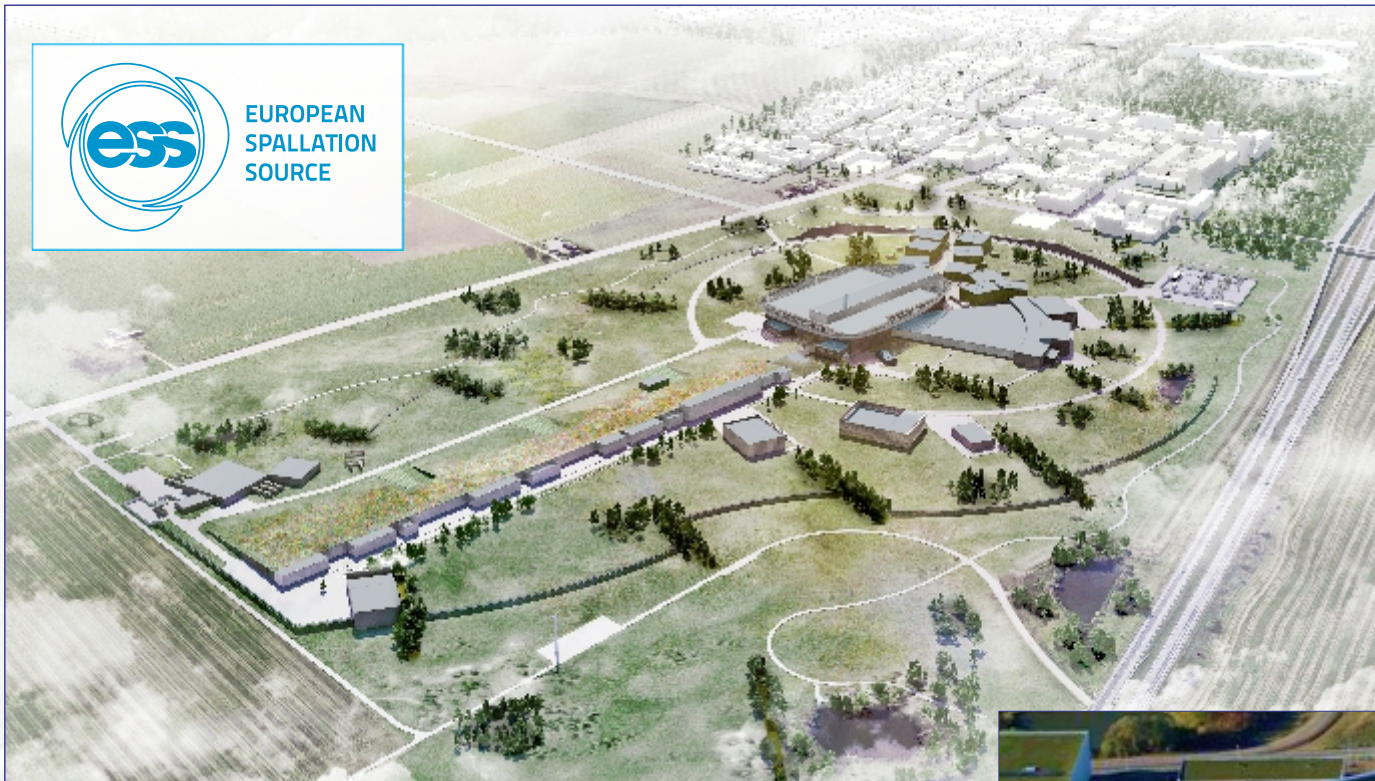


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- To be a strong partner in the **Nordic neutron scattering community**
- To broaden the international scientific impact by collaborating with **Baltic & international institutions**.
- To promote and plan for the complimentary use of **neutrons and x-rays**, especially in relationship to the co-location of **ESS and MAX IV**.



EUROPEAN
SPALLATION
SOURCE



1.843 billion €uro

0.7 billion €uro



MAX IV
LABORATORY

NNSP







Specialized Courses - SwedNess Course Catalogue (1.0)

- Neutron Diffraction 👍
- Neutron Reflectometry - *Intro + Two tracks (soft matter / bio & hard matter)* 👍
- Small-Angle Neutron Scattering (SANS) - *Two tracks?* 👍
- Neutron Spectroscopy (INS + QENS) 👍
- Real Space Techniques - Imaging/tomography [also x-rays] 👍
- Neutrons for Magnetism + Polarized neutron scattering 👍
- *Neutrons for Engineering* ✍️
- *Neutrons for Life-science* ✍️
- *Neutrons for Energy / Electrochemistry* ✍️
- *Modeling* ✍️
- The course catalogue is dynamic and can always be expanded !!!

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+ Nordic Network

Neutron Sources of the World



EUROPE

ILL, Grenoble, France
ISIS/RAL, UK
SINQ, PSI, Switzerland
FRM-II, Germany

BER II, HZB, Berlin, Germany (closing !!!)
LLB, Saclay, France (closing 2019 !!!)
IFE, Kjeller, Norway

OTHER EXAMPLES

HFIR/SNS, Oak Ridge, USA
J-PARC, Japan
ANSTO, Bragg Institute, Australia

UNDER CONSTRUCTION

Lund, Sweden



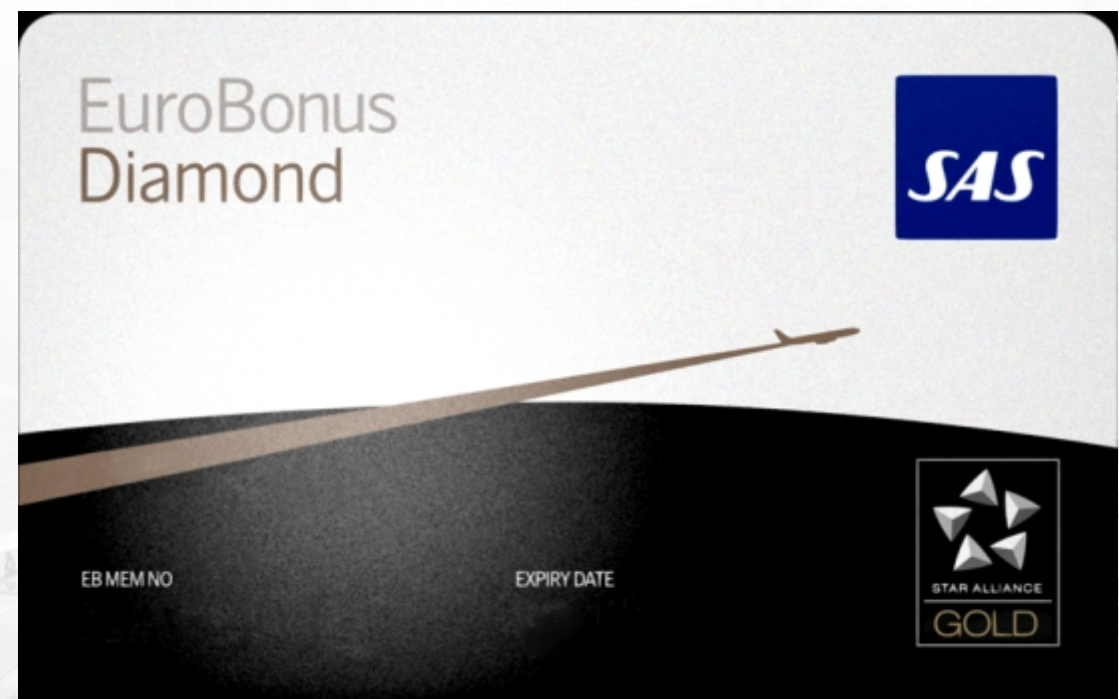
Dongguan, China

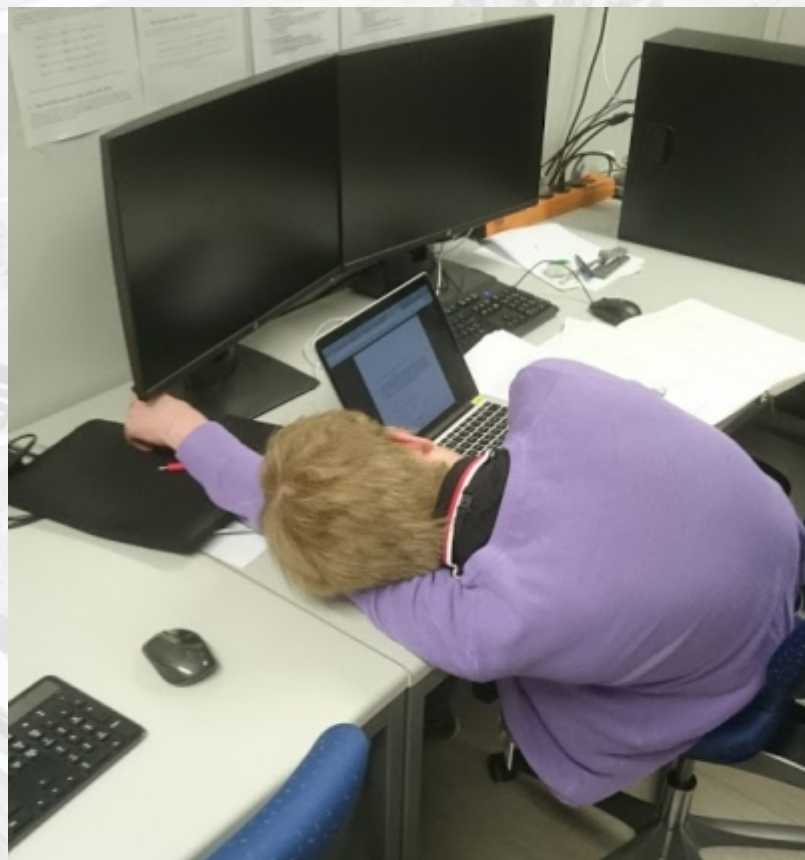
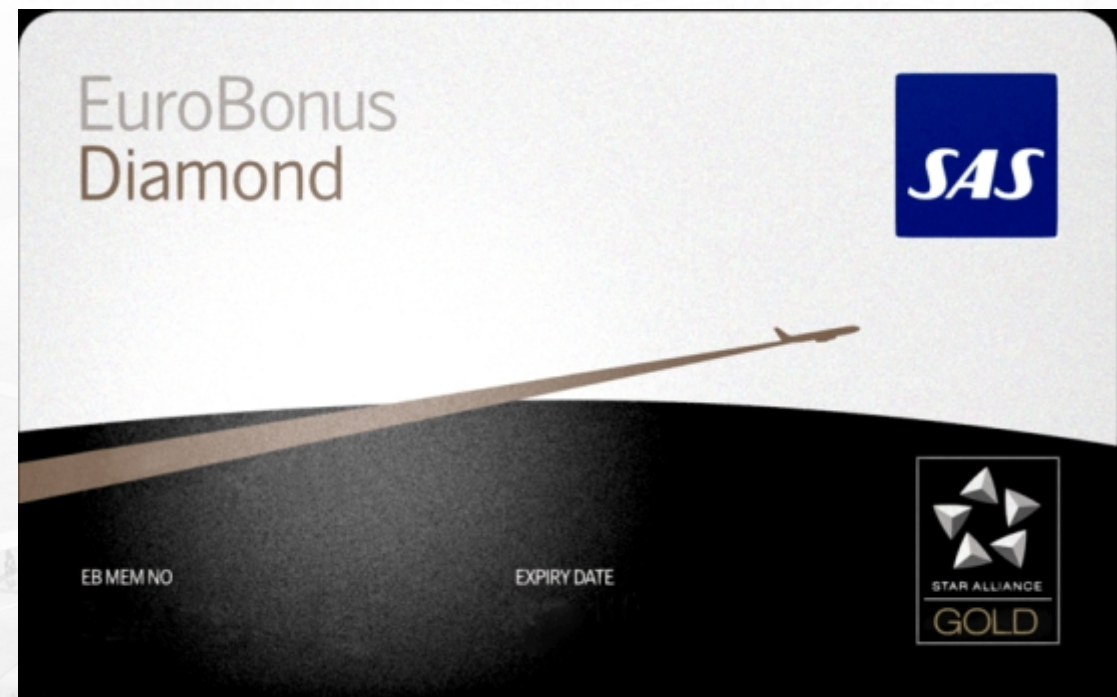


<http://www.neutrons.se/>

<http://www.neutronsources.org/>

<http://www.ncnr.nist.gov/nsources.html>





Prepare for Beamtime = Proposal Writing

- Idea for how neutrons can help your research (specific question = piece of the puzzle)
- Talk to an expert (this will soon be You !!!)
- Consider your sample!!! (available size/mass, crystal/powder/thin film).
- Think about if your sample contains elements with low scattering or high absorption
<http://www.ncnr.nist.gov/resources/n-lengths/>
- Select appropriate source and instrument for your experiment (**check deadlines!**)
- Contact instrument responsible to discuss experiment (**before you submit proposal!**)
- Write a proposal and apply for beamtime at your selected neutron source/instrument
- Cross your fingers and wait for the review committee + in some cases "national quota"
- If you obtain beamtime start to prepare your experiments well advance (align crystals, manufacture sample holders etc.)
- Check necessary paperwork (**visa!**) at source and perform the mandatory "safety training"
- If you plan to do experiments at different sources with same samples: consider activation of your samples (active sample transport is complicated and expensive!)

Examination of this Course

- You should all write a proposal for neutron beamtime
- Time during these 2 weeks and dedicated “finish up session” on 21 September.
- Submit to Kim/Ulrich/Martin by end of this course... we let you know!
- More details about this tomorrow (by Ulrich).



DUO PSI Digital User Office

Paul-Scherrer-Institut (PSI) [CH] | https://duo.psi.ch/duo/user_new_prop.php

Hello, Prof. Dr. Martin Månsson | Log out

PSI Digital User Office

DUO | PSI | SLS | SINQ | SpS | LTP | SwissFEL | User Office | Guesthouse | Calendar

User Menu

- New Proposal
- Edit Proposals
- SLS Continuation Proposals
- View all Proposals (PDF)
- Resubmit Proposals
- SpS/SINQ Additional request
- Experimental Reports
- Publications
- Experiment feedbacks
- Badge & Dosimeter (new visit)
- Planned visits
- Account settings
- Logbook
- Logout

Proposal submission

Please select the PSI Facility you want to submit a new proposal:

	Facility	Deadline (CEST)
Create new proposal	SLS - Swiss Light Source (Non PX)	15.09.2017 23:59:59
Create new proposal	SLS - Swiss Light Source (PX)	15.10.2017 23:59:59
Prepare new proposal	SINQ - Swiss Spallation Neutron Source	Currently no open call
Prepare new proposal	SpS - Swiss muon Source	Currently no open call
Prepare new proposal	Joint neutron - X-rays powder diffraction (SINQ and SLS)	Currently no open call

Cancel

Paper Work / Administration / Safety

- Depending on your nationality you might need a visa to visit some of the neutron sources around the world.
- Take this seriously and apply in time !!! Invitation letter from source (talk to respective user office) + letter from head of department. We could possibly also write something from SwedNess / NNSP...
- Always make sure you do the safety training before going to beamtime and follow the rules when you are there! This is your health we are talking about and... radiation safety officers do not usually have a sense of humor!!!
- Talk to your respective university about getting a “dose pass” to keep track of your total radiation dose during all of your experiments.



Photo Shoot !!!



For SwedNess Students

- **Presentations**
- **Select 1-2 student representative(s) to organize yourself and to take part in the DoS group and some of the meetings. Presented on 21 September.**
- **facebook ???**
- **PSI Hands-on: questions ???**
- **Specialized courses: Diffraction course February 2018 + wishes ?!**
- **AOB ?**
- **Photo !!!**