

Swedish Neutron Scattering Society - Annual Report 2020

It is our pleasure to present the 2020 Swedish Neutron Scattering Society (SNSS) Annual Report. As in the rest of the world, 2020 has been a very special year due to the entry of covid-19. However, although at the moment the bottom is not yet in sight, the neutron community has shown to be very flexible and rapidly turned into other modes of operation. Most scientists are working effectively from home, and most experiments are done remotely. The construction of the European Spallation Source (ESS) has moved forward and ESS is now approaching 80% completion. 20 new PhD projects, which have been evaluated by an international scientific panel, have received funding for SwedNess II. These students will start in 2021, meaning that, in addition to the first bunch of 24 SwedNess students that are now roughly half-way their studies, there will be a large pool of young neutron experts to use the facilities at ESS when it is up in running in a few years from now.

With a view towards ESS and due to the limitations of the current pandemic, SNSS has launched a seminar series that focuses on the science facilitated by the first ESS beamlines; the first seminar was held on November 17 and centered on neutron imaging. This seminar series aims to strengthen the community by fostering new collaborations and showcasing the excellent science already taking place. To further showcase some of the excellent research done within our community, the publication of research highlights in the SNSS Monthly News Letter has been a natural, highly appreciated, part (see next page for a list of all research highlights in 2020). Furthermore, the SNSS home page <http://www.snss.se> has been improved and a bibliometric survey of the Swedish neutron community has been initiated. This survey will be available to the public in 2021. Finally, SNSS has funded the participation at beamtime last summer for one master student.

In May, the SNSS Annual Business meeting – including the election of a new SNSS Board – was held on Zoom, while the Swedish Neutron Week was postponed to May 10-12, 2021. Several of the board members have represented SNSS at various meetings and workshops, arranged by *e.g.* ENSA, VR, VINNOVA, and ESS. Specifically, SNSS has had strategic discussions with VR about Swedish in-kind contributions to ESS.

In May, continuing VR funding of 250 000 SEK/year for the years 2020-2022 was granted. The support from VR is highly appreciated and means that we can continue with our activities to meet the objectives of the society – this is likely to be even more important in this pandemic. Hopefully, by the time that the Annual Report for 2021 is being written, we are back to normal life again.

With best wishes for the New Year,

SNSS Board



SNSS Research Highlights

1. Local structure and vibrational dynamics of proton-conducting $\text{Ba}_2\text{In}_2\text{O}_5(\text{H}_2\text{O})_x$, Adrien Perrichon *et al.*
2. Following protein dynamics in real time during crystallization, Felix Roosen *et al.*
3. Virtual material science platform for organic magnets, Johan Hellsvik *et al.*
4. Structure and composition of highly viscoelastic (α -CD)/anionic surfactant films investigated by neutron reflectivity, José Compos-Terán *et al.*
5. Spontaneous formation of cushioned model membranes promoted by an intrinsically disordered protein, Marie Skepö *et al.*
6. Tackling antibiotic resistance using cubosomes, Maja Hellsing *et al.*
7. Effect of formulation method, lipid composition, and PEGylation on vesicle lamellarity: a small-angle neutron scattering study, Margaret Holme *et al.*
8. Quantum entanglement in low-energy neutron-proton scattering and its possible consequences, Erik Karlsson *et al.*
9. Resolving the microscopic origin of viscoelasticity in polymers, Max Wolff *et al.*
10. Bone nanostructure studied by small-angle neutron and x-ray scattering, Elin Törnquist *et al.*
11. How to tailor surfactant self-assembly in deep eutectic solvents using hydrotropes, Adrian Sanchez-Fernandes *et al.*
12. Neutron reflection reveals how lipoproteins cannot exchange fats when both saturated fats and cholesterol are present in model membranes, Marité Cárdenas *et al.*