NEUTRONS FOR SOCIETY

UNIVERSITY OF GRAZ

Department of Molecular Biosciences

UNI GRAZ

November 2025

PhD position

Integrating Mesoscale Membrane Dynamics into the Analysis of Lipid Vesicles

Lipid vesicles are pivotal model systems for membrane biopyhisics and drug-delivery research. Current small-angle scattering (SANS/SAXS) analyses capture nanoscopic structure but overlook mesoscale membrane dynamics. **The central aim of this PhD project** is the developing of multiscale scattering model that bridges nanoscopic and mesoscopic structure and dynamics. The model will be validated with combined SANS, SAXS, and neutron-spin-echo (NSE) experiments on ILL beamlines and released as open-source software.

Desired profile:

- ✓ MSc (or equivalent) in (Bio-)Physics, Chemical Physics or related fields;
- ✓ Background in scattering techniques (SANS/SAXS) and/or data modelling is a plus;
- ✓ Experience with programming (e.g. Python) is a plus;
- ✓ Familiarity with membrane biophysics or soft matter physics is advantageous;
- ✓ Strong written and oral communication skills in English;
- ✓ Ability to work independently and collaboratively in an international environement;
- ✓ Scientific commitment, creativity and team spirit.

What we offer:

- ✓ **A unique research environment**: Employment in a top-notch international and interdisciplinary setting at the interface of physics, chemistry and biology;
- ✓ **Duration and location**: 3 years (full-time), with the first year spent at the University of Graz, Department of Molecular Biosciences, Austria, and the remaining two years at the Institut Laue-Langevin (ILL) in Grenoble, France;
- ✓ **PhD enrollment**: The successful candidate will enroll in the PhD program at the University of Graz. During the first year, the succesful candidate will be supported and encouraged to foster collaboration and early integration into the research environment at ILL;
- ✓ **Skill-development opportunities:** Gain hands-on experience with cutting-edge experimental techniques, advanced scattering-modelling methods, and open-source software development.

Application procedure and contact:

Applications and informal enquiries must be addressed via e-mail to Dr. Enrico F. Semeraro (enrico.semeraro@uni-graz.at), Prof. Georg Pabst - Pabst Lab (georg.pabst@uni-graz.at), and Dr. Sylvain Prévost (prevost@ill.fr).

To submit the application, please provide the following documentation in **PDF** format:

- ✓ Cover letter stating your motivation and expertise (max one page);
- ✓ Curriculum vitae, detailing your academic and professional background;
- ✓ Copies of Master of Science diplomas/transcripts;
- ✓ Up to two letters of recommendation (max one page).

In the subject line of your email, please state "UniGraz-ILL PhD - [Your Name]".

The deadline for applications is: January 15th, 2026.

Preferred start date for the PhD project: Spring 2026 (*depending on the number of applications, only shortlisted candidates for the interview will be informed of the outcome of their application*).