



Institute of Physics of the Polish Academy of Sciences

Scholarship for a PhD Student



Job ID: #JOB18/2021

Job Description

Job Title: PhD student – scholarship holder

Job Summary:

The PhD student will use computational methods to study conformations of partially disordered proteins – both in aqueous solutions and at lipid membranes.

Job Description:

The PhD student will join the Division of Theoretical Physics at the Institute of Physics of the Polish Academy of Sciences. He/she will participate in the research project entitled “Structural and functional analysis of regulation of the lipid-transport protein ORP8”, which is lead by dr hab. Bartosz Różycki, supported by the National Science Centre within the international CEUS-UNISONO program, and carried out in close collaboration with the Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences. The biological function of oxysterol-binding protein (OSBP)-related protein 8 (ORP8) is to transport lipids from the place of their synthesis (i.e. from endoplasmic reticulum) to the plasma membrane, which contributes to maintaining the proper lipid composition of cellular membranes. The ultimate goal of the research project is to obtain a detail molecular model of lipid transport between membranes by the ORP8 protein.

The PhD student will use computational methods to study conformations of partially disordered proteins, i.e. such macromolecules that contain both folded protein domains and intrinsically disordered polypeptide segments. In particular, he/she will use Monte Carlo simulations and ensemble refinement methods to integrate data from X-ray crystallography, small angle X-ray scattering (SAXS) and Förster resonance energy transfer (FRET) experiments to determine molecular conformations of the ORP8 protein.

Requirements:

- MSc in physics or chemistry or a related branch of science, or an equivalent degree that qualifies one for PhD studies in physics in the country of issue;
- Good knowledge of statistical mechanics and of numerical methods in physics or chemistry;
- Interest in molecular biophysics;
- Communicativeness and good command of spoken and written English;
- Diligence at work and consistency in achieving results;
- Additionally, programming skills within the Linux environment (including scripting languages) as well as prior experience in application of numerical methods (such as molecular dynamics simulations) in physics or chemistry will be considered strong assets.

- To be employed, the candidate must be accepted into the PhD school in which the Institute of Physics participates. Applications for the position are through recruitment to the School, online at warsaw4phd.eu.

Main research field: physics

Research subfield: theoretical biophysics

Career Stage: early stage researcher or 0-4 yrs (Post-graduate)

Research Profile ([details](#)): First Stage Researcher (R1)

Type of Contract: fixed term (30 months)

Status: full-time

Salary: grant funding of 5000 PLN per month, before subtracting obligatory employer and employee social security contributions (~15%).

Contact

More information can be obtained from

Bartosz Różycki

e-mail: rozycki@ifpan.edu.pl

<https://sites.google.com/view/bartosz-rozycki-biomembranes>

Please make contact.

Application details

Application deadline: 06.06.2021 Later applications will not be considered.

Required materials:

- Scientific CV
- Cover letter
- Scan of MSc diploma or an equivalent degree or an explanation of when one is expected
- Academic record (for finalized semesters)
- Recommended: recommendation letters from academics or their contact emails

All materials should be submitted in electronic form by application to the PhD school warsaw4phd.eu, choosing the project entitled “Computer simulations of partially disordered proteins”. The application system will be active from 24 May 2021.

Results regarding the position will be made available by 9 July 2021.