



Institute of Physics of the Polish Academy of Sciences

Scholarship for a PhD Student



Job ID: #JOB 39/2019

Job Description

Job Title: PhD student to perform numerical simulations pertaining to intrinsically disordered proteins

Job Summary:

The research project is about the multiscale and multiphase molecular dynamics of intrinsically disordered proteins and proteinaceous liquid droplets

Job Description:

Requirements:

- Good knowledge of numerical programming
- Good analytical skills
- Experience in theoretical research
- Good knowledge of English, in speech and writing
- The ability to work independently

Project objectives: The goal of the research is to perform systematic studies of single- and many-chain IDPs through a combination of coarse-grained and all-atom simulations to understand the mechanisms of aggregation and structural biases. The focus of the research will be on proteins related either to neurodegeneration (alpha-synuclein, tau) or with the memory consolidations (hCPEB3, Orb2). The ultimate goal of the research involving the coarse-grained model is to study systems of many IDPs, including the proteinaceous droplets. The droplets arise under the conditions of large molecular densities through the liquid-liquid separation. This results in compartmentalization into droplets that are necessary for the organization of vital processes. Examples include stress bodies, P-granules, nucleoli signaling complexes, and centrosomes. These so called membraneless organelles typically consist of many proteins and nucleic acids that are combined at a higher density than in the surrounding fluid, but they may also consist of just one kind of IDPs, especially in *in vitro* studies. The surface tension involved in the phase separation is generally small. The droplets undergo shape fluctuations and may combine through fusion. The purpose of the research is to understand the properties of the droplets consisting of one kind of proteins, in collaboration with biologists in Madrid. In particular, the goal is to calculate the coexistence curves and the fluid parameters (surface tension, viscosity) for droplets made of different IDPs.

Main research field: Physics

Sub Research Field: Biophysics

Career Stage: postgraduate

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

Type of Contract: 36 months

Status: full time

Salary: 4500 PLN per month (untaxed scholarship).

Contact

More information can be obtained from
prof. Marek Cieplak (e-mail: mc@ifpan.edu.pl).

Application details

Application deadline: 18.09.2019 Later applications will be not considered.

Required materials:

- Curriculum Vitae
- List of publications
- Consent to process your personal data

Scan of M.Sc. diploma

All materials should be submitted in electronic form to the address: jobs@ifpan.edu.pl with
Job ID in the subject.

Information clause in the process of recruitment for studies

Under Art. 13 sections 1 and 2 of the Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), EU OJ L 119 of 04.05.2016, page 1, as amended, hereinafter referred to as "GDPR", we hereby inform as follows:

1. The Data Controller, i.e. the entity deciding how your personal data are used, is the Institute of Physics of the Polish Academy of Sciences, represented by the Director, with its registered office in Warsaw Al. Lotników 32/46. You can contact the Data Controller using one of the contact forms available at: phone (22) 116-2111, e-mail director@ifpan.edu.pl.
2. The Director of the Institute of Physics of the Polish Academy of Sciences has appointed a Data Protection Officer (DPO) with whom you may contact in matters regarding your personal data. You may contact the Officer sending an e-mail to: iodo@ifpan.edu.pl
3. Your personal data shall be processed in order to perform the process of recruitment for studies;
4. The basis for processing of your personal data are provisions of the Act on Higher Schools and Education (consolidated text: Journal of Laws of 2018, item 1668);
5. Your personal data shall be processed for the period of 6 months upon completion of the recruitment process and in case of admission to studies, according to the course of the studies, and then they shall be archived according to the applicable provisions;
6. Your personal data shall not be made available to any other entities save for entities authorised under the provisions of the law. Employees and members of the university recruitment committees authorised by the Data Controller will have access to your personal data;
7. Providing personal data by you is voluntary, but failure to provide them precludes participation in the recruitment process;
8. You have the right to access the contents of your personal data and you have the right to rectify them, erase them and restrict their processing;
9. You can submit a complaint to the Inspector General for the Protection of Personal Data if you find that their processing violates provisions of the General Data Protection Regulation.

Consent for processing:

I grant my consent for processing of my personal data by the Institute of Physics of the Polish Academy of Sciences in order to ensure conditions of full participation in the process of recruitment for studies. I provide the personal data voluntarily and declare that they are true. I have familiarised myself with the content of the information clause, including the information about the purpose and methods of processing of personal data and right to access the content of my data and the right to rectify them.

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Date, candidate's signature