



Warsaw 20.07.2020

## Recruitment No 043-2020

### Group name Soft and Condensed Matter Research Group

PhD student – scholarship position. Number of positions available: 1

#### Job summary:

PhD-student position available in the Institute of Physical Chemistry PAS within National Science Center (NSC) **OPUS 17 Project No. UMO-2019/33/B/ST4/00557** entitled "*CHANGES OF INTRACELLULAR TRANSPORT DURING CELL DEATH*" (leader **dr Karina Kwapiszewska**).

#### Job Description:

The concepts of life and death accompany people from the beginning of history. Defining these concepts, however, is difficult, because there are no clear premises separating these two states, and there are even organisms that do not fit into most definitions of living systems (eg viruses). Similarly, it is problematic to determine the unambiguous boundary between life and death at the level of individual cells. In this project, we present the hypothesis that the **limiting factor, determining cell death is inhibition of intracellular transport** - and hence – majority of biochemical reactions

In the course of the project, the cytoplasmic nanoviscosity will be examined during programmed cell death: apoptosis and necroptosis. Cells of different ages and origins will be subjected to these processes in order to observe phenomena universal for various types of tissues. We will study nanoviscosity at various length scales (1-100 nm) and the movement of particles at different time scales (from microseconds to seconds). We will apply correlation techniques: fluorescence correlation spectroscopy (FCS) and raster image correlation spectroscopy (RICS), which are successfully developed in our laboratory. In addition, we will use a new, complementary to FCS, analysis of slow movements of biomolecules - BiWEC (developed from scratch in our group). The result of these works will be a systematic analysis of the mobility changes of intracellular components at all length scales during apoptosis and necroptosis. We will follow the movement of known fluorescent probes as well as native autofluorescence components. This second strategy - the use of fluorescence naturally occurring in cells - may result in **a new technique for determining cell viability**,

**which does not require the use of a dye (a label-free assay).** Such techniques are sought after to simplify procedures and reduce costs and waste in toxicological studies.

### **Responsibilities:**

- Experiment planning
  - Preparation of biological samples
  - Performance of experiments
  - Data analysis
  - Reporting
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- **Research Profile:** First Stage Researcher (R1)
  - **Main Research Field:** physical chemistry, biophysics
  - **Career perspectives:** Opportunity to work in an interdisciplinary and international research group, with strong support in chemistry and physics; participation in international conferences on drug development and biophysics; Institute provides opportunity to participate in ERASMUS + programme.
  - **For additional job details:** contact [kkwapiszewska@ichf.edu.pl](mailto:kkwapiszewska@ichf.edu.pl)
  - **Benefits:** We offer 3 000 PLN per month stipend financed from the NSC OPUS 17 Project No. UMO-2019/33/B/ST4/00557 The position is for a period of 35 months + over 2 000 PLN per month stipend from PhD School (parallel recruitment – see below).
  - **Application Details:**
    - **Envisaged Job Starting Date:** 01.10.2020
    - **Application Deadline:** 13.08.2020
    - **How to Apply:** Send application directly to [rekrutacja@ichf.edu.pl](mailto:rekrutacja@ichf.edu.pl);  
**IMPORTANT:** email title “**Rekrutacja nr 043-2020**”
  - **Required Languages:** English, **Language level:** good
  - **Additional requirements**
    1. MSc in Biophysics, Chemistry, Physics, Biology, Biotechnology, Pharmacy (or related fields).
    2. Experience/interest in topics related to the project.
    3. Ability to read and analyze scientific publications.
    4. An additional advantage will be experience in fluorescence correlation spectroscopy, biochemistry, analytical chemistry or molecular biology.

### **Recruitment procedure:**

Complete application should include the following items:

- scientific curriculum vitae, including a list of scientific achievements (scholarships, publications, patents, conference presentations, etc.).
- motivation letter

- copy of a master diploma
  - copy of a document confirming course of a study
  - reference from previous supervisor
- Additionally, if the applicant does not have a status of PhD student in Poland according to NCN regulation “Regulamin przyznawania stypendiów naukowych w projektach badawczych finansowanych ze środków narodowego centrum nauki”, to be eligible, the applicant is required to submit simultaneously their application to the online recruitment system of **Warszawska Szkoła Doktorska Nauk Ścisłych i BioMedycznych** [Warsaw Doctoral School “Warsaw-4-PhD” <http://warsaw4phd.pl> ] **between 5th and 18th of August 2020** (follow updates within the Candidates → Admission section). The project entitled: **“Study of nanoviscosity changes during cell death” (R.Hołyst, K.Kwapiszewska)**.

The best applicants will be invited for an interview (on-site or online).

The scholarship will be awarded in accordance with the NSC regulations: „Regulamin przyznawania stypendiów naukowych ncn w projektach badawczych finansowanych ze środków narodowego centrum nauki”

[https://ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25\\_2019-zal1.pdf](https://ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25_2019-zal1.pdf)

and in accordance with the Employment policy of the Institute of Physical Chemistry PAS ( [http://ichf.edu.pl/employment\\_policy.pdf](http://ichf.edu.pl/employment_policy.pdf) )

- The Commission will take into account the following criteria:
  - a) competences of candidates for specific tasks in a research project,
  - b) previous scientific achievements of candidates,
  - c) awards and distinctions of the candidate resulting from the conducted research.
- The commission evaluates applications on a point scale.
- The scholarship will be awarded to the person who obtains the highest number of points.
- The results of the competition are made public.
- The results of the recruitment will be announced on **21.09.2020**.
- Scheduled date of starting work within the Project: **01.10.2020**.
- Successful candidate need to have the status of PhD student before starting work within the Project. Failure to oblige with this condition will result in not signing the scholarship agreement.

By submitting the application you consent to the processing of your personal data in the recruitment process.

The controller of your personal data is the Institute of Physical Chemistry of the Polish Academy of Sciences with its registered office in Warsaw, NIP: 5250008755 (the "Institute"). The Institute will process your data for the purpose of carrying out scientific and research activities, providing services and contact with the Institute, on the basis of a

contract (in connection with the performance of the contract or in order to take action on your request before the contract is concluded - Article 6, paragraph 1, letter b) of GDPR), the legitimate interest of the Institute (Article 6, paragraph 1, letter f) of the GDPR) and legal provisions (Article 6, paragraph 1, letter c) of the GDPR) - depending on the circumstances.

You have the right to: request access to your data, receive a copy of it; rectify (correct) it; delete it; limit its processing; transfer it; lodge a complaint to the supervisory body; withdraw your consent for processing at any time (withdrawal of consent does not affect the lawfulness of the processing carried out prior to its withdrawal) or to lodge an objection to data processing. More information is available on the Institute's website.

[http://ichf.edu.pl/gen\\_inf/gen\\_en/GDPR%20-%20General%20Information%20Clause.pdf](http://ichf.edu.pl/gen_inf/gen_en/GDPR%20-%20General%20Information%20Clause.pdf)