



**Institute of Biochemistry and Biophysics PAS in Warsaw announces an open competition for a research scholarship/student position in an Opus 21 grant financed by National Science Centre entitled „Molecular basis of neurodegenerative diseases - the influence of selected metallic nanoparticles (2021/41/B/ST4/03807)”**

### **PROJECT DESCRIPTION**

The aim of this project is to determine the effect of metallic nanoparticles based on zinc and copper and their oxides on the induction of amyloidogenesis processes of selected proteins or peptides (e.g. amyloid beta peptides or human cystatin C) associated with the emergence and development of neurodegenerative diseases (Alzheimer's disease or hereditary cystatin C amyloid angiopathy). The manifestation of pathological processes occurring during the development of these diseases is the formation of amyloid deposits. We want to see what influence has the presence of nanoparticles on this process. The results of these studies will be presented to international conferences and published in renowned research journals.

### **SCOPE OF WORK**

1. Preparation of samples - Synthesis and purification different variants of the Alzheimer peptide ( $A\beta_{1-42}$ ,  $A\beta_{1-40}$ ,  $A\beta_{3-28}$ ,  $A\beta_{1-16}$ ,  $A\beta_{4-16}$ ,  $A\beta_{4-42}$ ), human S100B protein, human cystatin C.
2. Studies the processes of aggregation the amyloid  $A\beta$  peptides induced by the presence of nanoparticles with different morphology and sizes by multidimensional NMR spectroscopy.

**Project coordination team:** Dr Igor Żukow

**Project realization time:** 12 months

**No. of positions:** 1 (research scholarship)

**Position:** research scholarship/student

**Start of position:** 1.03.2022 r.

**Scholarship:** 2 000.00 PLN monthly (brutto brutto)

### **Requirements:**

- Education in the field of chemistry, biochemistry, biophysics or related - BA or engineer in biophysical or biochemical research
- Experience in laboratory work in the field of physical or organic chemistry
- Knowledge of spectroscopic techniques

Candidates are requested to send the following documents (pdf):

- **a copy of the graduation diploma of the 1st degree studies (Bachelor degree) scientific CV** (including the GDRP clause)
- **motivation letter**
- **reference letter** (promoter or supervisor of bachelor's or engineering thesis)
- **list of papers/patents/conference presentations**

Please send your applications by e-mail to: [igor@ibb.waw.pl](mailto:igor@ibb.waw.pl) until **21.02.2022**



**The selection procedure will have two stages:**

1. **Stage 1** – The Qualification Committee (comprising two independent IBB PAS researchers and Principal Investigator) will review the documents. This analysis will lead to selection of candidates to participate in stage 2 of the competition. **We reserve the right to contact only the selected candidates.**
2. **Stage 2** – Qualification interviews of candidates with the Qualification Committee in via an internet communicator including a short presentation of the research performed – **24.02.2022 r.**

Based on the results of the second stage, a research scholarship/student will be selected to implement the project.

All candidates will be informed of the results of the recruitment procedure.