

Open call for PhD student

We are looking for a PhD student for the realization of the project OPUS 21, no 2021/41/B/NZ7/01654, „Correlations between supramolecular structure, molecular dynamics, physico-chemical stability, and solubility in neat Active Pharmaceutical Ingredients (APIs) and API-excipient binary systems”, financed by the National Science Center.

Position: PhD student

Number of available positions: 1

Place of work: Uniwersytet Śląski w Katowicach,
Wydział Nauk Ścisłych i Technicznych, Instytut Fizyki
ul. 75 Pułku Piechoty 1, 41-500 Chorzów

Website: <https://us.edu.pl/en/>

Qualification requirements:

- 1) Master's degree in physics, chemistry, materials science, pharmacy or related fields.
- 2) Basic knowledge of condensed matter physics and molecular physics.
- 3) Basic experience in studying the structure of materials at the atomic/molecular level by the X-ray diffraction and pair distribution function analysis. Knowledge of the basics of modeling the structure of molecular systems as well as Matlab/Python programming will be an advantage.
- 4) Experience in laboratory work.
- 5) Good knowledge of English.
- 6) Motivation for scientific work.

Key responsibilities:

Participation in research work under the project, in particular:

- 1) Preparation of pure pharmaceutical systems and their binary mixtures with excipients by various methods (vitrification, compression, milling).
- 2) X-ray diffraction measurements of the investigated pharmaceutical systems under various temperature and pressure conditions and analysis of the results using the tools of the pair distribution function and molecular modeling.
- 3) Analysis of the influence of the manufacturing method and thermodynamic conditions on the formation of the supramolecular structures, recrystallization, phase transitions, molecular dynamics, and physico-chemical stability of the studied systems.
- 4) Moreover, the PhD student will take part in planning experiments and writing scientific publications, and will be obliged to actively participate in scientific conferences.

Required documents:

- 1) Cover letter
- 2) CV with description of scientific/research achievements
- 3) Copy of MSc diploma or a confirmation of MSc degree
- 4) Opinion of scientific supervisor/master's thesis supervisor

Submission deadline: 28th of October 2022 (11:59 p.m. CET)

Conditions of employment:

Scholarship: 3200 PLN before taxation/month

PhD status is obligatory

Starting date: 11/2022

Duration of scholarship: from 12 up to max 42 months

Contact: dr. Karolina Jurkiewicz (project main-investigator)

e-mail: karolina.jurkiewicz@us.edu.pl

Please send the documents to the above-mentioned e-mail address, with the title: "PhD student-scholarship", and include the following content in the message:

"I hereby give consent for my personal data included in the application to be processed for the purposes of the recruitment process".

Candidates will be selected and involved in the project implementation in accordance with the Regulations on awarding research scholarships in research projects funded by the National Science Center as defined by the resolution of the NCN Council No. 25/2019 of March 14, 2019. The research scholarship from the OPUS project is independent of the doctoral scholarships. Applications will be assessed by the Competition Committee appointed by the project manager. The Competition Committee reserves the right to interview selected candidates (the candidates will be informed about the place and time of the interview by e-mail). The decision of the commission cannot be appealed against. The Faculty reserves the right not to adjudicate the competition if the selection board decides that none of the Candidates meets the requirements specified in the competition.