



KStyp(NCN)-1/21

Lublin, 13/07/2021

INSTITUTE OF AGROPHYSICS, POLISH ACADEMY OF SCIENCES IN LUBLIN
IS SEARCHING FOR HIGHLY MOTIVATED CANDIDATES INTERESTED IN SCIENTIFIC WORK
FOR:

PhD FELLOWSHIP (f/m) in the Project:

„The role of the metabolic, morphological and genetic properties of *Neosartorya* spp. fungi in shaping their resistance to preservatives, chemicals and natural plant extracts” no. 2020/39/O/NZ9/03421, financed by The National Science Centre within the funding scheme Preludium BIS 2

1. Requirements:

- Candidate cannot be a student of PhD school and cannot hold a doctoral degree
- Master's degree in biotechnology, biology or related
- Good command of English for professional purposes
- Experience in laboratory, especially with using microbiology and molecular biology techniques or in bioinformatics

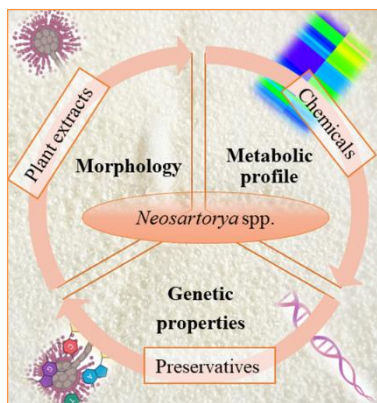
2. Job description in the Project:

The Institute of Agrophysics, Polish Academy of Sciences, Department of Soil and Plant System is looking for PhD student in the Interdisciplinary Doctoral School of Agricultural Sciences.

PhD thesis proposal:

The role of the metabolic, morphological and genetic properties of *Neosartorya* spp. fungi in shaping their resistance to preservatives, chemicals and natural plant extracts.

- The PhD project will take place for 48 months (**from 01.10.2021**) at the Department of Soil and Plant System, Institute of Agrophysics, Polish Academy of Sciences, Lublin, Poland under PhD supervision of Prof. DSc Magdalena Frąc (m.frac@ipan.lublin.pl, www).
- The PhD project is conducted and financed within the NCN project PRELUDIUM BIS 2 reg. no. 2020/39/O/NZ9/03421. Scholarship is ensured during the PhD project for 48 months.
- Language of PhD course and thesis: English or Polish.
- The condition for the candidate's involvement and payment of the scholarship under the PRELUDIUM BIS 2 project is his admission to the doctoral school. For application details (documents, procedures, deadlines) please go to website of the Doctoral School.**



Keywords: heat-resistant fungi, plant extracts, metabolic profile, chemical sensitivity, genome, transcriptome, microbiome

The soft fruit sector, in particular the production of strawberries, play a very important role in global agricultural and horticultural production. Poland is one of the largest strawberry producers in Europe, that is why the production of high quality raw materials is critical to both national and international food processing. Therefore, the research proposed for the project is related to the search for preservatives and natural plant extracts which could be used as alternative to the active compounds of chemical agents in agriculture for controlling the occurrence of these organisms in plant crops. The changes in the metabolic profile and morphological features during exposure to food preservatives, chemicals and plant extracts, that can be used in organic farming are very important in a control



of these organisms in crop production, especially taking into account new regulation of European Union with European Green Deal and Biodiversity Strategy for 2030, which include increase of the organic farming area and reduction of chemicals use in agriculture. The PhD project will focus on the evaluation of the sensitivity of *Neosartorya* spp. isolates on preservatives and plant extracts; chemical sensitivity, metabolic properties and morphological features of isolates with various susceptibility to preservatives and plant extracts; the determination of plant extracts influence on phenotype, including metabolic profile and morphological features of fungi; as well as performing genome and transcriptome analysis of selected isolates belonging to *Neosartorya* genus. **The main scientific objective of the project is the determination of the role of metabolic, morphological and genetic properties of *Neosartorya* spp. fungi in shaping their resistance to preservatives, chemicals and natural plant extracts.**

References

1. Frąć M., Jezierska- Tys S., Yaguchi T., 2015, Occurrence, detection, and molecular and metabolic characterization of heat-resistant fungi in soils and plants and their risk to human health. *Advances in Agronomy*, 132: 161- 204. <https://doi.org/10.1016/bs.agron.2015.02.003>
2. Panek, J., Frąć, M., Bilińska-Wielgus, N., 2016, Comparison of chemical sensitivity of fresh and long-stored heat resistant *Neosartorya fischeri* environmental isolates using Biolog Phenotype MicroArray system. *PLoS ONE*, 11(1), e0147605, <https://doi.org/10.1371/journal.pone.0147605>
3. Pertile G., Frąć M., Fornal E., Oszust K., Gryta A., Yaguchi T., 2020, Molecular and metabolic strategies for postharvest detection of heat-resistant fungus *Neosartorya fischeri* and its discrimination from *Aspergillus fumigatus*. *Postharvest Biology and Technology*, 161, 111082, <https://doi.org/10.1016/j.postharvbio.2019.111082>

Do not hesitate to contact with Prof. DSc Magdalena Frąć (m.frac@ipan.lublin.pl) with any question related to the PhD project.

3. **Funding scheme:** Preludium BIS 2
4. **NSC panel name (Research field):** NZ9
5. **Deadline for submitting applications:** 07.09.2021
6. **How to apply:** in electronic form via our Recruitment System: <https://career.ipan.lublin.pl/en/announcements/>
7. **Interview:** 13-22.09.2021 with the stipulation the deadline can be changed
8. **Results will be announced by:** 27.09.2021, with the stipulation the deadline can be changed
9. **Terms of employment:**

The successful candidate will receive scholarship for 48 months, under the rules of Act on Higher Education and Science of 20 July 2018 (Journal of Laws [Dziennik Ustaw] of 2021 item 478 as amended), and in accordance with the terms of the PRELUDIUM BIS 2 call for proposals, in the amount of PLN 5,000.00 per month, reduced by ZUS due contributions on the side of the scholarship holder and the Institute up to the month mid-term evaluation, and in the amount of PLN 6,000.00 PLN monthly reduced by ZUS due contributions on the side of the scholarship holder and the Institute after a positive mid-term evaluation result. Please be informed the amount stated above also include contributions and benefits payable by the Institute (total scholarship cost), therefore the gross amount of scholarship will be calculated as the above values being reduced accordingly.

10. Additional information:

- a) The recruitment process is organized as an open competition. A doctoral student is recruited as part of a competition whose rules are pursuant to 2.1.3 Salaries and scholarships for students and PhD students - PRELUDIUM BIS 2 doctoral scholarships, Annex to NCN Council Resolution No



95/2020 of 14th September 2020 amending the Regulations on awarding funding for research tasks funded by the National Science Centre as regards research projects https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2020/uchwala95_2020-zal1_ang.pdf.

- b) After the deadline for submitting applications will expire, the Committee may conduct interviews with candidates. In this case, each candidate will be informed individually about the first stage results, as well as the date of the interview.
- c) The Institute reserves right to award the fellowship to the candidate ranked 2nd, only if the chosen candidate resigns before signing the fellowship agreement.
- d) **In the frame of the project we offer three months internship in very good research institution abroad: Medical Mycological Research Center, Chiba University in Japan. PhD student will be required to apply for a fellowship in the program carried out by Polish National Agency for Academic Exchange (NAWA), under the conditions set out in the Cooperation Agreement between NAWA and the NCN of September 12th, 2019.**

11. Required documents:

- 1) letter of application addressed to the Chairperson of the Committee – Prof. DSc Magdalena Frąc
- 2) Curriculum Vitae with an information about possessed competences, an summary of scientific accomplishments and awards (including in particular: published scientific papers, conference speeches, participation in research projects, internships, training courses as well as other research achievements and scientific distinctions)
- 3) copy of MSc diploma
- 4) recommendation letter issued by the research supervisor
- 5) declaration of availability to work in the Project with the indication of the starting date on **01.10.2021**
- 6) declaration of consent to the processing of personal data contained in the fellowship offer for the needs of the recruitment process in accordance with the example below:

*„I allow my personal data stated in the abovementioned applications to be processed for the purpose of the recruitment by the Institute of Agrophysics of the Polish Academy of Sciences (20-290 Lublin, ul. Doświadczalna 4), in accordance with the General Data Protection Regulation (EU) 2016/679.”**

*) Information clause on personal data is available on the following website:

<http://www.ipan.lublin.pl/wp-content/uploads/2019/02/information-clause-IA-PAS.pdf>

If you are interested in this position please send your application via our Recruitment System by 07/09/2021: <https://career.ipan.lublin.pl/en/announcements/>

We kindly inform that we contact only chosen candidates and also applications that are incomplete, submitted after the deadline or in the different form than required will not be processed.