Faculty
of Physics

Warsaw University
of Technology

Doctoral Student position
in the field of Experimental Heavy-Ion Physics
within the ALICE experiment

Warsaw University of Technology (WUT) is a technical research university with traditions in education dating back to the 19th century, being the oldest of its kind in Poland. It is a forward-thinking institution where high-quality education meets world-class research and innovation. WUT is ranked number one among all technical universities and number three among all universities in the country.

Warsaw University of Technology participates in two LHC experiments: ALICE (physics and computing) and CMS (electronics) as well as several non-LHC experiments (including NA61/SHINE or STAR at RHIC). The ALICE group at WUT consists of 10 staff members (including 2 full professors) and a number of Ph.D., M.Sc., and B.Sc. students working in the group during realization of their diploma theses. We are active in the physics analysis of ALICE data including femtoscopy and angular correlations. The group also closely cooperates in this field with the STAR team at WUT. Other activities include responsibility for running and maintaining the event display software in ALICE as well as active involvement in machine learning tools and methods to be used in various aspects of the experiment as well as works related to the ALICE fixed-target program.

We are looking for a candidate to take a Ph.D. student position in the field of experimental heavy-ion physics within the ALICE experiment, as a part of the research team of the National Science Center (NCN) grant (SONATA program, grant no 2021/43/D/ST2/02214) of Dr. Łukasz Graczykowski, entitled “Do the mass and flavor matter? Experimental studies towards a better understanding of the hadron production mechanism using angular correlations in the ALICE experiment at the LHC”.

Job Description

The successful candidate will work on the experimental examination of angular correlations involving open-charm mesons D^0 and $D^{\pm}$ (such as pD and DD pairs) and multi-strange baryons (ΞΞ, pΩ and ΩΩ pairs) in the ALICE experiment at the LHC, using data expected to be collected in the upcoming Run 3 data taking period. These studies will allow for a better understanding of the hadron production mechanisms – how do the mass and flavor matter in the mechanism of particle production. Candidates should note that important part of the work would be the development of the new software that will allow the analysis of the newest collision data (using the new O^2 analysis framework, written in C++ programming language).

The successful candidate will be enrolled in the Doctoral School at the Warsaw University of Technology. It is expected that the candidate will defend his/her PhD thesis within 4 years (48 months).

Koszykowa 75
00-662 Warsaw
phone +48 (22) 234 72 67
fax: +48 (22) 628 21 71
dziekan@if.pw.edu.pl
fizyka.pw.edu.pl

Funding

The successful candidate will receive funding from the following sources listed below.

Main scholarship:

1. The full scholarship from the NCN SONATA grant, which is 5,000 PLN/month (gross). The scholarship is tax-free, however social and health insurance fees are deducted from the gross amount, resulting in a net amount of around 3,800 PLN/month.

Additional benefits:

2. The base scholarship is increased by an additional ~500 PLN/month in the first two years and ~100 PLN/month in the last two years from the *Grant Plus* program of the Excellence Initiative – Research University project.
3. In addition, WUT provides supplemental support of a one-time allowance of 4,200 PLN right after the start of the PhD program, called *WUT Start* from the Excellence Initiative – Research University project.

Travels to CERN for up to three months per year are also foreseen with an additional allowance covering the costs of living in the Geneva area.

Please note that funding cannot be extended above the limit of Doctoral studies (48 months).

Requirements

- M.Sc. degree or a foreign equivalent (it must be officially awarded before the 14th Sep. 2022). Please note that degrees obtained in the countries outside the European Union, the European Economic Area and OECD require a "recognition of achievements" document issued by the National Agency for Academic Exchange (NAWA) (more details under this link: https://sd.pw.edu.pl/Szkola-Doktorska-PW/Rekrutacja),
- some experience in particle or nuclear physics,
- strong interests in experimental nuclear physics,
- working knowledge of a modern programming language (e.g. C/C++, Java, Python) and Git,
- fluency in English, both written and verbal.

How to apply

Applications and/or any questions should be sent electronically to: Dr. Łukasz Graczykowski (Lukasz.Graczykowski@pw.edu.pl). Please include the phrase "Candidate for Ph.D. ALICE SONATA – angular correlations" in the subject of your email.

Applications must include:

- CV of a candidate,
- copy of a M.Sc. diploma or equivalent (if available) and transcript of records,

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- list of scientific achievements of the candidate, indicating his/her predispositions for research work (i.e. list of publications and presentations at conferences, information on participation in projects, activities in the student scientific associations, awards, etc.); applicants are also welcome to include programming portfolio or description of programming achievements/completed projects,
- a brief statement of research interests,
- a recommendation letter from a supervisor of the M.Sc. thesis, to be sent directly to: Lukasz.Graczykowski@pw.edu.pl.

Selection process

The final choice of candidates to the project will be made on a competitive basis, based on assessment of research achievements, scientific skills and an interview with the best candidates. The selection procedure will follow the *Regulations for awarding NCN scholarships*.

Please note that the successful candidate will have to go through the official recruitment procedure to the Doctoral School at WUT (https://sd.pw.edu.pl/Szkola-Doktorska-PW/Rekrutacja). Please note that this is an **additional step**, required by the Polish law, independent from the recruitment to the SONATA NCN project.

The final enrollment depends on successful selection both to the SONATA NCN project and to the WUT Doctoral School.

To receive full consideration, applications should be submitted by July 31st, 2022. The final outcome of the recruitment to the project should be known by August 31st, 2022.

The Doctoral Student program starts formally on October 1st, 2022.

Please include in your CV the following statement:
"I hereby give consent to process my personal data included in the offer, for the purposes of the recruitment procedure, in accordance with the Personal Data Protection Act dated 29.08.1997 (Consolidated text: Journal of Laws of the Republic of Poland, 2016, item 922, as amended)."

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Notice on protection of personal data:

Pursuant to Article 13 of the Regulation of the European Parliament and of the Council (EU) 2016/679 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 (hereinafter referred to as: "GDPR"), we inform you that:

- The Warsaw University of Technology, Pl. Politechniki 1, 00-661 Warszawa, Poland (further referred to as the „University"), is the administrator of your personal data. For further details on personal data processing you can contact the data protection officer: iod@pw.edu.pl
- Personal data of the candidates are processed for the purposes of carrying out the recruitment procedure.
- Members of the relevant recruitment committees are recipients of the personal data of the candidates.
- Personal data of the candidates will be processed until the recruitment procedure is concluded. Access to your personal data may have companies that Warsaw University of Technology commissions to perform activities that involve the processing of personal data. Your data will be deleted after 6 months.
- The candidates have the right to request from the University access to their personal data and the right to amend them.
- The candidate may at any moment withdraw the consent to process personal data. The data will then be irretrievably and effectively destroyed, so that they can no longer be accessed or reconstructed by any means, and the candidature shall not be further taken into account in the recruitment procedure.
- In any case, the candidate has a right to file complaint to the Inspector General for the Protection of Personal Data, Stawki 2, 00-193 Warszawa, Poland, phone: (+48) 22 531 03 00, fax: (+48) 22 531 03 01, e-mail: kancelaria@giodo.gov.pl

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