

# Announcement

The Project manager announces the competition for the position  
Post-doc/assistant professor offer

within the NCN OPUS 25 scientific project (UMO-2023/49/B/ST8/00773) entitled: "Identification of the low-frequency unsteadiness nature in the atmospheric air flows at the supersonic to subsonic flow transition"

in the Department of Power Engineering and Turbomachinery of the Silesian University of  
Technology in Gliwice

## Job description:

- 1) the competition for the position of Nuclear reactor technology expert is open to persons who meet the requirements specified in the Act of 20 July 2018 – Law on Higher Education and Science (Journal of Laws of 2023, item 742 as amended) and the Statute of the Silesian University of Technology of 3 June, 2019 (Legal Monitor of SUT of 2020, item 339 as amended),
- 2) estimated work commencement date: 09.2024,  
workplace and type of contract: Department of Power Engineering and Turbomachinery, Faculty of Energy and Environmental Engineering, Silesian University of Technology in Gliwice, 18 Konarskiego St., contract of employment
- 3) period of employment: from 09.2024 to 09.2027 (36 months).
- 4) realization of tasks in the research project entitled: " Identification of the low-frequency unsteadiness nature in the atmospheric air flows at the supersonic to subsonic flow transition ", project selected under the 25 competition OPUS, financed by the National Science Centre Poland in Krakow in accordance with agreement no. UMO-2023/49/B/ST8/00773 dated 02.07.2024.

## Plan of research

Within this project we will try to find answers to the following questions related to the unsteadiness in the supersonic flow in shock waves:

- What is the nature of the flow unsteadiness?
- What is the role of coherent structures in the upstream boundary layer and "breathing" of the separation bubble?
- Do upstream and downstream fluctuations coexist independently, creating the shock wave motion, or are they coupled?
- What are the frequency and the amplitude of fluctuations in the outlet boundary conditions responsible for?
- What are the frequency and the amplitude of fluctuations in the air quality responsible for?
- What are the frequency and the amplitude of fluctuations in the wall conductivity responsible for?
- How do the big water droplets impacting on the shock wave change the shock wave position and behaviour?

## Requirements

- documented PhD degree
- documented deep knowledge in the field of Gas Dynamics and Computational Fluid Dynamics
- knowledge of mechanics of compressible gas transonic flows with shock waves interactions



- practical knowledge of OpenFOAM software
- advanced numerical skills (C++, Matlab, Python)
- at least 2 publications as the first or corresponding author in scientific journals from JCR list from 2022 until now
- motivation and skills to carry scientific work
- fluent English
- is available.

#### **The terms of employment:**

- Funding: around 11000 PLN monthly (taxes will be deducted from this amount – for pension, health insurance and income tax; after subtraction of all taxes the income will be around 9400 PLN per month)
- Duration: 36 months

#### **Recruitment process**

1. The post-doc position is awarded according in Annex to NCN Council Resolution No 76/2018 of September 6, 2018, amending the Regulations on awarding funding for research tasks funded by the National Science Centre as regards research projects, post- doctoral fellowships and doctoral scholarships:

[https://www.ncn.gov.pl/sites/default/files/pliki/regulaminy/2018\\_09\\_ncn\\_regulations\\_en.pdf.pdf](https://www.ncn.gov.pl/sites/default/files/pliki/regulaminy/2018_09_ncn_regulations_en.pdf.pdf)

2. NCN post-doc position may be awarded to a person, who meets all of the following criteria:
  1. has been selected by means of the open competition procedure, carried out by a three- person recruitment committee appointed by the head of the project's host institution, composed of the project's principal investigator as its chair and at least two other persons selected by them, who have all the necessary scientific or professional qualifications. The assessment of the candidates is carried out pursuant to the criteria outlined in the call announcement, and the results are made public by posting on the website of the project's host institution;
  2. will be employed for a period not shorter than 6 months;
  3. for two years before employment in the project has not been employed by the host entity pursuant to a contract of employment
  4. at the time of receiving this remuneration, they are not receiving any other remuneration paid from the resources granted as direct costs under NCN calls;
  5. in the period of receiving the salary they are not employed pursuant to another contract of employment
  6. the doctoral degree was obtained in 2016 or later (with the exceptions specified on page 29, footnote 16 of

[https://www.ncn.gov.pl/sites/default/files/pliki/regulaminy/2018\\_09\\_ncn\\_regulations\\_en.pdf.pdf](https://www.ncn.gov.pl/sites/default/files/pliki/regulaminy/2018_09_ncn_regulations_en.pdf.pdf)

#### **Required documents**

- Motivation letter (in English)
- CV, including all scientific achievements, publication list, programming skills
- A reference letter written by an experienced scientist and sent by him/her directly to [mekiel@ippt.pan.pl](mailto:mekiel@ippt.pan.pl)
- copy of diploma a PhD diploma or a certificate attesting a PhD degree
- Signed statement: "I agree to the processing of personal data contained in my job offer for the needs necessary to carry out the recruitment process conducted by IPPT PAN with headquarters in Warsaw, ul. A. Pawińskiego 5B, according to art. 13 para. 1 and 2 of Regulation (EU) 2016/679 of the Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and the free movement of such data and the repeal of Directive 95/46 / EC (RODO)".

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### Submission of the applications

- by the day 16/09/2024 at 12 am.,
- electronic version of application should be submitted to the e-mail address: [slawomir.dykas@polsl.pl](mailto:slawomir.dykas@polsl.pl)

*A contractor who submits an offer in electronic form is obliged to send a request to confirm receipt of the electronic message by the ordering party. After receiving the request, the ordering party will confirm receipt of the offer in electronic form. If the offer does not reach the indicated address of the ordering party and in the absence of such confirmation, it is presumed that the offer has not been submitted.*

- documents in paper forms, should be submitted in the Project Office the Department of Power Engineering and Turbomachinery at the Faculty of Energy and Environmental Engineering, Silesian University of Technology, 44-100 Gliwice; 18 Konarskiego St, room 430,
- expected date of the result of the tender enquiry: 18/09/2024 at 3 pm.

Candidates negatively evaluated by the selection committee have the right to appeal against the results of the competition within 7 days of their publication on the BIP website.

### Informative clause:

**According to art. 13 of the Regulation on Personal Data Protection of 27 April 2016, please be informed:**

1. The controller of your personal data is the Silesian University of Technology with its registered office at Akademicka 2A St, 44-100 Gliwice,
2. The Silesian University of Technology has appointed the Data Protection Officer who can be contacted via the email address: [iod@polsl.pl](mailto:iod@polsl.pl),
3. Your personal data will be processed in order to carry out the recruitment process for work at the Silesian University of Technology,
4. the basis for the processing of your personal data is art. 221 of the Labour Code and, if you agree to use your CV in future recruitments at the Silesian University of Technology, art. 6 clause 1 point a of the GDPR Regulation shall apply,
5. only employees authorized to process personal data to the necessary extent will have access to your personal data within the organizational structure of the Silesian University of Technology,
6. Your personal data shall not be disclosed to other entities, except in cases provided for by law,
7. Your personal data shall be stored for the period necessary to carry out the recruitment process or for the next 9 months from the end of the recruitment process, if you authorize the processing of personal data in future recruitment processes,
8. You have the right to request the access to the content of your data and, to the extent provided for by applicable regulations, the right to: rectify, delete, limit processing, raise objections; if you consent to the processing of data, you have the right to withdraw your consent at any time,
9. You have the right to lodge a complaint with the President of the Office for Personal Data Protection if you feel that the processing of your personal data violates the provisions of the General Data Protection Regulation,
10. providing data is voluntary, but necessary to achieve the purposes for which they are collected.

Gliwice, date 06/09/2024

Kierownik projektu  
08/050/PBU24/367  
Prof. dr hab. inż. Sławomir Dykas