

Call for a position of a scientific scholarship holder in an OPUS 25 project

Systems Research Institute Polish Academy of Sciences (SRI PAS) announces recruitment for one scholarship holder in the research project “Mathematical control theory in problems arising in flow-structure interactions”, financed by the National Science Centre (NCN) (grant no. UMO-2023/49/B/ST1/04261).

Type of NCN Project: OPUS25 – ST1.

Project title: Mathematical control theory in problems arising in flow-structure interactions

Principal Investigator: Professor Irena Lasiecka

Position in the Project: scientific scholarship holder

Institution: Systems Research Institute, Polish Academy of Sciences

Requirements:

1. Master’s degree in mathematics or applied mathematics or automatic control
2. Interest in and some familiarity with the theory of PDE and control theory
3. Interest in and some familiarity with differential geometry
4. Good command of English
5. Some research experience in the area related to the project’s topics
6. The candidate should also meet the formal requirements regarding scholarships in accordance with the regulations for awarding research scholarships in research projects financed by the National Science Center, **in particular it is required that a candidate does not hold a PhD degree and is a PhD student of a doctoral school.**

Selection process

A scholarship committee will be established to evaluate the candidates based on the applications submitted and to select the one admitted. The candidates may be requested to take part (remotely) in an interview, if needed. The final evaluation will take into account:

- candidate's scientific achievements, including publications in reputable scientific publishers/journals,
- achievements resulting from scientific research, scholarships, awards and scientific experience gained in Poland or abroad, scientific workshops and trainings, participation in research projects
- competence to carry out specific tasks in the research project

The decision of the scholarship committee cannot be appealed.

General description of the project:

This project deals with coupled model of gas and structure with an interface. Gas is described by unstable linearization of Euler equation, while the structure corresponds to a system of nonlinear dynamic elasticity such as plate or shell models.

The interaction between two environments is accomplished via aeroelastic potential (acting on the structure) and downwash (acting on the boundary of gas domain).

Literature related to the project:

- I. I. Lasiecka, J. Webster, Feedback stabilization of a fluttering panel in an inviscid subsonic potential flow, *SIAM Journal Mathematical Analysis*, Vol 48, Nr 5, pp 1848-1891, 2016.
- II. M. Ignatova, I. Kukavica, I. Lasiecka, A. Tufaha, Small data global existence for a fluid-structure model, *Nonlinearity*, vol 30, nr 2, 848-898, 2017.
- III. I. Lasiecka, K. Szulc, A. Zochowski, Boundary control of small solutions to fluid-structure interactions arising in coupling of elasticity with Navier Stokes equation under mixed boundary conditions, *Nonlinear Analysis: Real World Applications*, vol 44, pp 54-85, 2018.
- IV. H. Cavit, I. Lasiecka, T. Levajkovic, A. Tufaha, The stochastic linear quadratic control problem with singular estimates, *SIAM Journal on Optimization*, 55 (2017), no. 2, 595-626.
- V. I. Lasiecka, R. Monteiro, Ma To Fu, Global smooth attractors for dynamics of thermal shallow shells without vertical dissipation, *Transactions of AMS*, vol 371, nr 11, pp 8051-8096, 2019.
- VI. I. Lasiecka, M. Pokojovy, X. Wan, Long-time behavior of quasilinear thermoelastic Kirchhoff-Love plates, *Nonlinear Analysis*, 186, pp 219-258, 2019.
- VII. L. Bociu, L. Castle, I. Lasiecka, A. Tufaha, Minimizing drag in a moving boundary fluid-elasticity interaction, *Nonlinear Analysis*, vol 197, 2020.
- VIII. I. Lasiecka, B. Priyasad, R. Triggiani, Uniform stabilization of 3D Navier-Stokes equations in low regularity Besov spaces, *Archives of Rational Mechanics and Analysis*, 241, 1575-1654, 2021.
- IX. D. Bonheur, F. Gazzola, I. Lasiecka, J. Webster, Long-time dynamics of an extensible hinged-free plate driven by a non-conservative force, *Annales de l'Institut Henri Poincaré. Annales: Analyse Non Lineaire/Nonlinear Analysis, NonLin*, 39 (2), 2022, pp. 457--500.

Responsibilities of the candidate:

- Analysis of the decay estimates for flat models subjected to boundary dissipation.
- Analysis of stability in time of weak solutions in the case of shallow shell models.
- Working closely with project team members under the supervision of the Principal Investigator.

Location of the workplace: Systems Research Institute, Polish Academy of Sciences, Newelska street 6, 01-447 Warsaw, Poland

What we offer:

1. Scholarship contract.
2. Work in a leading scientific group in friendly atmosphere.
3. Aiming in publishing articles in high impact journals.
4. Possibility of participation at the conferences on topics of PDE's financed from the project.
5. The scientific scholarship will be paid initially for 6 months in the monthly amount of: 5000 PLN gross (before taxation and all the other compulsory deductions) with the possibility of extension of the contract for up to two years.

Conditions of employment:

Scientific scholarship: 5000 PLN gross per month (before taxation and all the other compulsory deductions), scholarship contract for 6 months with the possibility of extension.

Expected position starting date: 1.08.2024.

Application deadline: 30.06.2024, 23:59 CET.

Potential interviews with candidates: 3-5.07.2024

Results to be announced by: 15.07.2024.

How to apply

Please submit the following documents via email to: il2v@ibspan.waw.pl and jan.owsinski@ibspan.waw.pl with subject "OPUS 25 – scholarship application".

Documents required:

1. Motivation letter (in English).
2. CV (in English) containing information on:
 - a. education,
 - b. scientific achievements, including scientific publications, popular science articles, conference presentations,
 - c. achievements resulting from conducting scientific research, including scholarships, awards, scientific experience, workshops, and scientific training as well as participation in research projects,
 - d. competences to carry out the tasks envisaged in the project.
3. A copy of Master thesis and diploma with transcript.
4. List of scientific publications, if any.
5. Certificate of having the status of a doctoral student.

In your CV, please include the following consent clause for the processing of personal data in the recruitment process:

"I consent to the processing of my personal data for the purposes necessary for the recruitment process (in accordance with the Act of 10 May 2018 on personal data protection (Journal of Laws of 2018, item 1000) and in accordance with the Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 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 (RODO)). Data will be processed by the Systems Research Institute of the Polish Academy of Sciences, Newelska 6 street, 01-447 Warsaw, Poland, in order to carry out the recruitment process and publishing the full results of the competition on the Institute's website".

The assessment of candidates' applications will be carried out by the competition committee in accordance with the regulations for awarding research scholarships in NCN projects.

Information clause for the recruitment process

- 1) the controller of the personal data processed in the course of the recruitment process is the Systems Research Institute Polish Academy of Sciences, with its registered office at 6 Newelska Street, 01-447 Warsaw, Poland,
- 2) contact with the data protection officer is possible at the e-mail address iod@ibspan.waw.pl,

- 3) personal data will be processed for the purpose of the current recruitment procedure, on the basis of the consent given (Article 6(1)(a) and (Article 6(1)(c) of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 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 (General Data Protection Regulation - GDPR),
- 4) the data subject has the right to withdraw consent at any time, without affecting the lawfulness of processing based on consent before its withdrawal,
- 5) data collected in the course of recruitment processes shall be stored for a period not longer than one year,
- 6) the data subject has the right to access their personal data, and to request that they be rectified or erased. If erasure of personal data is requested, this shall be equivocal to resignation from participation in the recruitment process carried out by the Systems Research Institute Polish Academy of Sciences in Warsaw.
- 7) the data subject has the right to file a complaint to the President of the Personal Data Protection Office (PUODO) with regard to unlawful processing of personal data. PUODO will be the authority competent to review the complaint, with the proviso that the right to complain applies solely to the processing personal data and not to the course of the recruitment process.