



About the role

We are seeking a Postdoctoral Researcher (Adiunkt) to join the research group at the Center for Theoretical Physics PAS, led by Dr. Eng. Patryk Lipka-Bartosik, within the project “*Thermodynamics of Information Processing: From Theory to Applications*”.

The project aims to bridge fundamental research with potential technological applications in information thermodynamics — an interdisciplinary field at the intersection of information theory, stochastic thermodynamics, and quantum physics. The research will focus on three main directions:

- Thermodynamic computing: developing physics-inspired alternative models of computation that aim to reduce energy consumption in information processing and machine learning (e.g., arXiv:2308.15905);
- Quantum phenomena in information processing: exploring how quantum effects can be utilized to process information with improved energetic efficiency (e.g., arXiv:2408.06418);
- Optimization of thermodynamic protocols: designing thermal machines that exploit collective quantum phenomena to achieve higher energy efficiency (e.g., arXiv:2411.00944).

Main responsibilities:

- Designing independent research projects;
- Developing and performing analytical calculations and numerical simulations;
- Coordinating collaborations with other research groups;
- Writing and publishing scientific papers;
- Presenting research results at conferences;
- Mentoring MSc and PhD students.

Additional responsibilities may include assisting with maintaining the group’s website or organizing seminars.

Enquiries regarding the role or the recruitment process can be addressed to Dr. Patryk Lipka-Bartosik (lbartosik@cft.edu.pl).

If you require reasonable adjustments or a more accessible format to apply for this position online, please contact recruitment@cft.edu.pl.



About you

Essential qualifications, experience and knowledge

- PhD degree obtained not earlier than in 2019 (or planned defense before the contract start date);
- Good knowledge of analytical methods and/or numerical simulations;
- Very good command of English, both written and spoken.

Essential skills and abilities

- Experience in machine learning;
- A strong publication record in high-impact scientific journals;
- Experience in international collaboration.

Desirable skills and abilities

- Experience in stochastic and/or quantum thermodynamics and/or machine learning.

What we offer

- Full-time fixed-term employment contract (2 years, renewable)
- Salary: approx. PLN 10,889.60 gross/month (approx. PLN 8,041 net/month);
- The scientifically stimulating research environment,
- Friendly and flexible work environment,
- Sharing knowledge and experience,
- Flexible working hours,
- Diverse and inclusive culture where mutual support, team work and respect are highly valued,
- Multisport card subsidy,
- Holiday subsidy
- Nursery and kindergarten subsidy

We will consider applications to work on a part-time and flexible basis wherever possible. We encourage you to discuss your flexible working needs during the interview process.

How to apply

Applications should be sent to: recruitment@cft.edu.pl, by 2025-12-01, with the reference number ("PLB/27/2025") in the subject line.

Required documents:

1. Scientific CV including academic background and achievements (publications, participation in research projects, conference presentations), with the clause:
"I consent to the processing of my personal data for the purposes necessary for the recruitment process, in accordance with the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (GDPR)."
2. Motivation letter (max. 2 pages), including a short description of past achievements and planned future research.



3. Copy of the PhD diploma or a statement from the supervisor confirming the planned defense date (the candidate must hold a PhD degree at the time of signing the contract).
4. Copies of documents confirming scientific or professional achievements.
5. Two letters of recommendation from independent researchers (with at least a PhD degree) evaluating the candidate's scientific activity.
6. Signed Data Privacy Statement  EN + PL - GDPR clause

Only shortlisted candidates will be contacted.

How we recruit

We carefully review every submitted application. Those whose experience and competencies align with our needs and requirements are invited to an interview (usually held online).

We stay in touch with candidates throughout the entire process, ensuring that interviews take place in a friendly atmosphere, and providing feedback after the interviews. We approach each candidate individually, also considering the needs of people with disabilities.

We appreciate all feedback received after the recruitment process. It motivates us to improve our recruitment efforts.

Our commitment to Equality, Diversity and Inclusion

The CTP PAS operates in an all-inclusive environment irrespective of personal, physical, or social characteristics. Teamwork is highly valued, individual strengths are recognised and appreciated, and we are committed to advancing the careers of everyone.

Equality, respect, and openness are fundamental values in an academic environment, where diversity is essential. We strive to provide a safe and inclusive space for everyone who is part of our scientific community.

The CTP PAS has regulations for reporting violations of law and protection of whistleblowers.

