PhD position (Doctoral Candidate 10) in 'Frontier Research Competences for Neuro-modulation and Oscillations in Pain'

Apply for EU funded support to undertake cutting edge research within a high-level European Training Network consortium of seven research intensive institutions and universities. You will benefit from a team approach, integrated international mobility, high level subject and transferable skills development oriented to your future employment in research and the wider economy. Frontier Research Competences for Neuro-modulation and Oscillations in Pain (FRESCO4NoPain) is an EU-funded Doctoral Network (DN) under the Marie Sklodowska-Curie Actions (MSCA) - (Grant number 101167856 - HORIZON-MSCA-2023-DN-01). More information about the project can be found on www.fresco4nopain.com. FRESCO4NoPain offers 17 Doctoral Candidates positions to begin on 1st of September 2025 or soon before and a list of all available position can be found here. Please consult the 'Guide for Applicants' document for further details.

This specific PhD/DC position is for Individual Research Project (IRP) 10: '*Using tRNS to modulate cortical excitability and the experience of pain'*. Doctoral Candidate (DC) 10 will investigate the potential of transcranial random noise stimulation (tRNS) to modulate cortical excitability and reduce pain perception in experimental settings. TRNS is an increasingly used variant of tACS, during which alternating currents at a random mix of amplitudes and frequencies are applied. This approach does not aim at entraining oscillatory brain activity, but at *modulating cortical excitability*, thereby indirectly modulating brain oscillations. Doctoral Candidate 10 will explore whether tRNS over the motor and dorsolateral prefrontal cortex can modulate the experience of pain. Moreover, in collaboration with other doctoral candidates, DC 10 will assess the effects of tRNS on cortical excitability as assessed by oscillatory brain activity, the recently established 1/f signal, and transcranial magnetic stimulation (TMS).

Supervisory team: Main supervisor Professor Markus Ploner, Technical University of Munich, Germany. Co-supervisor: Professor Nadine Attal, Institut National de la Santé et de la Recherche Médicale (INSERM), France. Mentor: Dr.-Ing Aureli Soria-Frisch, StarLab, Spain.

Workplace: The primary workplace will be the PainLabMunich at the Klinikum rechts der Isar of the Technical University of Munich (TUM), Germany. Two secondments are planned for the Institut National de la Santé et de la Recherche Médicale (INSERM) of the U987 Ambroise Paré Hospital, France, and at the company StarLab, Spain.

Candidate eligibility

The DC position is open for highly motivated candidates holding a master's degree. Applicants should not be in possession of a doctoral degree at the time of the call deadline. Furthermore, applicants must not have resided or carried out your main

activity (e.g. work, studies) in the country where you have been recruited, for more than 12 months in the 3 years immediately before the recruitment date. Applicants must demonstrate that their ability to understand and express themselves in both written and spoken English is sufficiently high for them to derive the full benefit from the network training.

Application deadline

7th of April 2025.

How to apply

The application is only to be submitted online. Please send your application to the FRESCO4NoPain office, fresco4nopain@hst.aau.dk, and be aware, that your application must include the following:

- Motivation letter (max. 2 pages) including the following:
  - Brief presentation of the DC
  - The main reasons for choice of DC project
  - General knowledge on the research topic
  - Main research and training goals
  - Future plans
  - Complimentary skills
- Curriculum Vitae:
  - A CV (e.g. using the EU model) which states your educational background, experience, techniques, language skills and other skills or experiences relevant for this position. In accordance with mobility rules, it is crucial to provide detailed information about your employment and academic history, including residence details for at least the past three years.
- Certificate of academic degree:
  - A copy of the original master's degree with full transcripts. In case the master's degree has not been obtained at the call closing date applicants must upload their BSc degree/diploma in English and upload the transcript of the exams sustained so far during their master course, with a clear indication of the conclusion of the studies.
- Recommendation letter:
  - Attesting to the academic standing and potential of the applicant. Must be from an academic supervisor or collaborator, line manager, and/or company CEO. Must contain referees' contact details (will only be contacted upon prior agreement) and name of applicant.

Selection process

The Selection Committee will oversee and manage the entire selection process to ensure fairness, transparency, and compliance with the established criteria and MSCA

guidelines. This committee is responsible for reviewing applications, shortlisting candidates, and conducting interviews. The Selection Committee will consist of the supervisory team.

By 5th of May 2025, the candidates will be shortlisted based on their applications. The evaluation criteria for shortlisting applications can be found in the 'Guide for Applicants'. Shortlisted candidates will be invited for an online interview which will take place in the period 5th of May to 2nd of June 2025. Please refer to the 'Guide for Applicants' for details on the process and evaluation criteria for the interview.

About the workplace

The PainLabMunich, situated at the University Hospital (TUM-MED) of the Technical University of Munich, offers an inspiring environment at the intersection of neuroscience, engineering, and medicine dedicated to tackling critical challenges in pain research. Our team uses cutting-edge technology to investigate how the human brain generates and processes pain, focusing on developing innovative treatments for chronic pain.

We assess and influence brain rhythms associated with pain using advanced electroencephalography (EEG) and non-invasive neuromodulation techniques such as sensory entrainment, transcranial alternating current (tACS), and neurofeedback. We prioritize transparency and rigor in science, with practices like preregistration, open access, and sharing of data and code being core principles of our research.

PainLabMunich is a dynamic, diverse, and highly interdisciplinary team that brings together experts from neuropsychology, biomedical engineering, and clinical medicine. The language spoken in the lab is English, and you will also write your thesis in English. The lab is closely linked to the Center for Interdisciplinary Pain, providing an ideal setting for translating basic research into clinical applications.

The team spirit is critical to us. We believe that motivation and success are built on the foundations of individual encouragement, a sense of humor, and respectful communication.

Joining PainLabMunich means becoming part of a supportive, innovative research group addressing timely questions in basic science and pain medicine.

Terms of employment and salary

DC will receive a competitive salary and additional resources to support wider networking and academic development including opportunities to take part in international conferences and collaborations. Pay is standardised by the EU, is ample by local standards, and allows for comfortable living. All researchers will be recruited under an employment contract that includes social security coverage. The salary

includes a living allowance, a mobility allowance and a family allowance (if applicable). The guaranteed PhD funding is for 36 months.

Contact

FRESCO4NoPain office, fresco4nopain@hst.aau.dk