

Call for applications for an Early Stage Researcher position (PhD position) in the NANOSTEM Initial Training Network (Marie Skłodowska-Curie-ITN)

H2020 - MSCA - ITN - 2017, NANOSTEM : New Nanomaterials for Neural Stem Cells Drug Delivery

PhD position at Artois University

Our laboratory (LBHE), located at Université d'Artois (UA) in Faculté des Sciences Jean Perrin in Lens (North of France) is looking for a highly motivated student with a major in cell biology and who has a strong interest to do research in the blood brain barrier (BBB) field. The project research is embedded in the Marie Curie ITN (Initial Training Network) called NANOSTEM. The international consortium of this network involves academic partners, one hospital, industrial teams and other partner organisations who will offer a wide variety of scientific training and complementary skills training.

The NANOSTEM project

This Network plans to explore the development of advanced nanostructured materials designed to transport drugs across the BBB, target neural stem cells (NSCs), deliver their payload at cell cytoplasm or activate efficiently membrane receptors. This new avenue of research requires the development of *in vitro* human BBB models to screen formulations able to cross the barrier and the study, at molecular level, of the processes to enhance the intracellular transport. Finally, it requires a better knowledge of how to target NSCs, to control NSC biological activity (proliferation, mobilization and differentiation) and to demonstrate the effect of a potential inductive platform in an *in vivo* setting. To achieve these objectives, NANOSTEM network combines the expertise ranging from organic and polymer chemistry to stem cell biology and clinical research and offers a superior training opportunity.

Aim

The recruited ERS will be in the LBHE laboratory that has about 30 years of experience in the Blood brain barrier modelling. Animal (bovine, mouse, rat) BBB *in vitro* models have been first set up and widely used to study transport mechanisms across the BBB, interaction between cells of the neurovascular unit (pericytes, endothelial cells, glial cells) and BBB properties under physiological and pathological

conditions (acute or chronic drug exposure, Alzheimer disease, Stroke, Cancer). More recently, thanks to a collaboration with Professor Lino Ferreira (Coimbra University) the laboratory successfully developed a human *in vitro* BBB model using human stem cells isolated from umbilical cord blood.

In the NANOSTEM project we bring our expertise in the modelling of the BBB and the objective of the student's thesis will be the optimisation of the *in vitro* models allowing improved screening and toxicity analysis of compounds (BBB permeability studies, phenotype characterization, cell viability).

Two short secondments (in Germany and in United Kingdom) are planned for the student who will work on this project. One longer secondment (9 months) will take place in HCS Pharma in Lille accessible in 45 minutes by train from our laboratory.

Your profile

- Master degree in cell biology with experience in cell culture and molecular biology.
- Ability and motivation to work independently as well as collaboratively in an interdisciplinary team
- Exceptional communicative and intercultural skills
- Excellent English writing and presenting skills
- Willingness for significant mobility throughout Europe and stakeholder interactions.

The main responsibilities of the candidate will be:

- To manage and carry out an independent, cell biology based, research project in close collaboration with partners in NANOSTEM.
- To actively participate in research and training activities within the NANOSTEM network
- To contribute to writing articles for scientific journals
- To disseminate research results in the scientific community (*via* international conferences) and in the non-scientific community (*via* outreach and public engagement).

Additional Marie Curie criteria that you should meet are:

- * You cannot have more than 4 years fulltime research experience (and do not yet have a PhD)
- * You cannot have lived for more than 12 months in France over the last 3 years.

Conditions

You apply for a 3 year PhD. You will mainly work in the LBHE laboratory in Lens, France. Two short secondments in Germany and in United Kingdom and a longer stay in Lille are planned in the project.

How to Apply

**Only complete applications will be considered.
Submission deadline is May 15th, 2018.**

Please submit a complete application as a single PDF FILE (<10MB) named "surname_name_.pdf" and containing the required following documents:

- A meaningful letter of motivation allowing understanding the motivation for the application and the choice of the research project chosen if two projects are chosen the priority choice should be explained.
- A complete and detailed CV (including the countries of residence from September 2015 onwards)
- Copies of the university Master Certificates for the respective University degrees or alternatively a certified copy confirming the enrolment and the date of finalization of the master program of the candidate.
- Names and full contact details of two referees.

You can send these documents in pdf format to Marie-Pierre Dehouck : mpierre.dehouck@univ-artois.fr **mentioning "NANOSTEM PhD" in the subject.** For inquiries you can send a message to this same address. The deadline for application is May 15th, 2018. Interviews by Skype will take place in June 2018. The starting date of this position is September 2018.

SUMMARY

ORGANISATION/COMPANY : Artois University

LABORATORY: LBHE (laboratoire de la barrière Hémato-encéphalique), Faculté Jean Perrin

Rue Jean Souvraz, 62307 SP18, LENS, France

RESEARCH FIELD : Cell Biology

RESEARCHER PROFILE : First Stage Researcher (R1)

APPLICATION DEADLINE : 15/05/2018

LOCATION : France › LENS (Three secondments are planned during the PhD)

SECONDMENTS: Lon stay in Lille (France), United Kingdom and Germany.

TYPE OF CONTRACT : Temporary

JOB STATUS : Full-time

HOURS PER WEEK : 37,5

OFFER STARTING DATE : 01/09/2018

EU RESEARCH FRAMEWORK PROGRAMME : H2020 / Marie Skłodowska-Curie Actions

MARIE CURIE GRANT AGREEMENT NUMBER: 764958