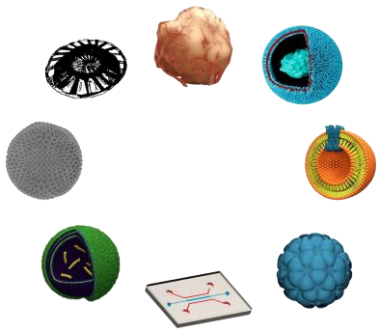
Tiny Machines Working to Elucidate Mechanisms of Cerebrovascular Pathologies

14 Doctoral Candidate Positions

Project ID	101227628
Project Title	Tiny Machines Working to Elucidate Mechanisms of Cerebrovascular Pathologies
Project Short Title	**C**erebro**M**achines**T**rain **D**octoral **N**etwork
Project Acronym	CMT-DN
Project Start Date	01 Jan 2026
Project Duration	48 months
Project Website	https://cmt-dn.eu/
Project Email	CMT-DN@universityofgalway.ie
Location & Project Details	See below
Application Portal	Access here
Application Deadline	20th May, 17:00 (Irish time)



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CMT-DN is hiring 14 Doctoral Candidates

Applications are invited for 14 doctoral candidate positions to pursue PhD education as part of CMT-DN. The positions are available for 36 months at 1.0 FTE and are funded through Horizon Europe MSCA DN Grant Agreement number 101227628.

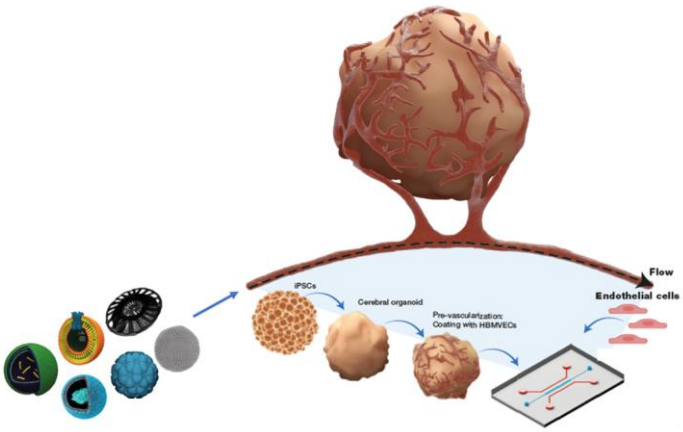
CMT-DN Overview

CMT-DN will train 14 Doctoral Candidates (DCs) in the state-of-the art of Tiny Machines (TMs) and Vascularized bRAIN (ORGanoids)-on-chip models (VRAINORGs) for CerebroVascular Diseases (CVDs).

Tiny machines (TMs) offer precise drug delivery, enhancing bioavailability while protecting healthy cells. However, their application in the complex brain environment requires innovative designs. Supported by the Marie Skłodowska-Curie Actions programme, the CMT-DN project aims to advance drug delivery systems by training researchers to PhD level. These future experts will focus on engineering TMs and developing brain-on-chip devices to improve treatments for cerebrovascular diseases. The project will then test the engineered TMs in 3D microphysiological non-animal technologies with integrated vascularised brain organoids (both healthy and diseased). These approaches promise to reduce the cost and time of pre-clinical animal studies while accelerating therapeutic development.

Overall, CMT-DN is a highly interdisciplinary, intersectoral, and international programme aiming to:

- ➔ Fabricate and characterise brain-compatible TMs
- ➔ Create VRAINORG platforms as healthy and CVD models
- ➔ Elucidate disease mechanisms through the action of TMs on VRAINORGs platforms.
- ➔ Provide advanced research skills training and career development through a range of relevant activities and networking opportunities, including annual summer schools, online seminars, conferences, and secondments.



CMT-DN DC Roles & Responsibilities – applicable for all DC applicants

- ➔ Complete an original research project on their assigned topic
- ➔ Participate in network-wide training events and consortium meetings in the course of the project and complete any additional training required to successfully carry out the research project
- ➔ Adhere to and develop materials for CMT-DN reporting and personal training requirements
- ➔ Prepare and disseminate research findings and activities in academic journals and for relevant stakeholders including the CMT-DN website, social media accounts and other forms of public engagement.
- ➔ Register as a doctoral student and prepare a manuscript for submission as a PhD thesis in accordance with the policies and procedures of their academic institution
- ➔ Complete the required project-associated secondment
- ➔ Complete training in and adhere to policies and procedures in both the host and secondment organisation including those related to health and safety, intellectual property protection, and research integrity
- ➔ Work with the Supervisors in preparing funding proposals related to the DC's area of research
- ➔ Continue to update knowledge and develop skills.
- ➔ Any other duties assigned commensurate to this level of post.

CMT-DN Essential Requirements – applicable for all DC applicants

- ➔ Fellows must comply with the ***Mobility Rule***: Applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting institution (beneficiary) for more than 12 months in the 36 months immediately before their recruitment date. Date of Recruitment means the first day of the employment of the researcher for the purposes of the action (i.e. the starting date indicated in the employment contract). *For refugees under the Geneva Convention (1951 Refugee Convention and the 1967 Protocol), the refugee procedure (i.e. before refugee status is conferred) will not be counted as 'period of residence/activity in the country of the beneficiary'.*
- ➔ A Master's degree in a relevant discipline based on project-specific requirements
- ➔ Applicants must **not** already be in possession of a doctoral degree or registered as a doctoral student at the date of the recruitment.
- ➔ English proficiency that enables doctoral candidates to understand and express themselves in both written and spoken English. Non-native English speakers are required to provide evidence of competency and an IELTS score of minimum 6.5 (or equivalent). The language certificate should not be older than two years.
- ➔ Hands-on experience with lab techniques
- ➔ Willingness to travel for secondments, training events, and consortium meetings.

CMT-DN Desirable Requirements – applicable for all DC applicants

- ➔ Demonstrated hands-on laboratory experience in project-specific conceptual and characterisation techniques.
- ➔ Experience preparing scientific reports, presentations, or publications.
- ➔ Candidates should have excellent written, oral, interpersonal and organisational skills
- ➔ Be highly motivated and passionate about developing new concepts.
- ➔ The candidate should be able to work independently and as part of a team.
- ➔ Experience of working in international, multidisciplinary, or industrial research environments.

MSCA Benefits and Salary

The MSCA-DN programme offers a highly competitive and attractive salary and working conditions. The successful candidates will receive a salary and a full-time employment contract in accordance with the MSCA regulations for early-stage researchers. In general, the offer will be based on:

- ➔ a Living Allowance of €4010/month to be paid in the currency of the country where the DC is recruited and *with a country-correction factor to be applied according to the EU rules.*
- ➔ Mobility allowance of €710/month to be paid to all DCs recruited for the full duration of the project.
- ➔ Additionally, researchers may also qualify for a family allowance of €660/month, depending on family situation. 'Family' means persons linked to the researcher by marriage (or a relationship with equivalent status to a marriage recognised by the legislation of the country where this relationship was formalised) or dependent children who are actually being maintained by the researcher.

Please note that each Doctoral Candidate position includes the specific gross salary, which is the amount before any salary-related tax deductions (such as income tax and employee social security contributions). The salary takes into account the applicable Country Correction Coefficient, which adjusts the living allowance based on the cost of living in the country of the recruiting beneficiary.

Taxation and Social Contribution deductions based on National and Institutional regulations will apply and will be deducted from the gross salary. Doctoral Candidates will also be responsible for ensuring their compliance with taxation and other relevant legislation.

In addition to their individual scientific projects, all Doctoral Candidates will benefit from further continuing education, which includes the opportunity to register for a PhD degree, scientific skills courses, transferable skills courses, active participation in workshops and conferences, and secondments to partner labs, along with other institution-specific employee benefits available to the DCs.

DC1 - Metal-organic frameworks (MOFs) for cerebrovascular diseases (Ireland)

JOB ADVERTISEMENT
Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the **Galway Porous Materials** research group, School of Biological & Chemical Sciences, University of Galway, Ireland.

This position is available from September 2026 for 36 months.

The Galway Porous Materials Research Group, led by Dr. Constantina Papatriantafyllopoulou, is focused on pioneering efforts in synthetic inorganic chemistry, specialising in metal-organic frameworks (MOFs).

Gross salary: €52,727 (without family allowance) - €59,199 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions, e.g., deduction of PRSI (Pay-related social insurance) and income taxes. For more information about tax entitlements, please go to https://www.revenue.ie.

This post is eligible for a Hosting Agreement through the University of Galway.

JOB DESCRIPTION
The successful candidate will pursue a PhD in the Galway Porous Materials Research Group, focused on designing therapeutic metal-organic frameworks (MOFs or **TM1**), with validation through organ-on-a-chip microfluidic platforms (**VRAINORG 1**).

Host institution: University of Galway (Ireland)
PhD enrolment: University of Galway (Ireland)
Secondment: Microfluidic Innovation Centre (France)
Primary supervisor: Dr. Constantina Papatriantafyllopoulou (University of Galway
Co-supervisors: Prof. Nico Bruns (Technische Universität Darmstadt), Dr. Lisa Muiznieks (Microfluidic Innovation Centre)

Duties:
- To synthesize **TM1** using optimal conditions (molar ratio of the reactants, solvents, metal sources, and temperature) for tunable porosity;
- To identify and characterise the optimal conditions for the **TM1** activation, entrapment and release of the baseline therapeutic, followed by the intended therapeutic (i.e., vasodilator, neuroprotector);
- To investigate the effect of **TM1** (e.g., toxicity, neuronal response, impact on vascularisation) in the **VRAINORG 1** platform.
- To implement the CMT-DN DC Roles & Responsibilities – applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Chemistry, Materials Science or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience in synthetic inorganic chemistry (e.g., synthesis, air/moisture-sensitive techniques: Schlenk line, glovebox).
- Experience with characterisation methods such as XRD (single-crystal/powder), NMR, IR/UV-vis, TGA, BET, SEM, TEM etc.

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see HERE for further information.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact Dr. Constantina Papatriantafyllopoulou, Email: c.papatriantafyllopo@universityofgalway.ie
- University's Strategic Plan
- Working in Research at University of Galway
- Moving to Ireland (Euraxess)
- University of Galway is an equal opportunities employer.

DC2 - Mechanosensitive gated polymersomes (Ireland)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the **CerebroMachines Lab**, School of Biological & Chemical Sciences, University of Galway, Ireland.

This position is available from September 2026 for 36 months.

The **CerebroMachines Lab** led by Dr Mihai Lomora is focused on three research pillars: I) Synthesis of Biomimetic Therapeutic Systems for Drug Delivery; II) Vascularized miniature versions of the real human organs (organoids); III) Microfluidic devices for the testing of drug delivery systems or for the integration of drug delivery systems with vascularised mini-human organs. The lab collaborates closely with the Institute for Health Discovery and Innovation (**IHDI**), and **CÚRAM** - Research Ireland Centre for Medical Devices.

Gross salary: €52,727 (without family allowance) - €59,199 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions, e.g., deduction of PRSI (Pay-related social insurance) and income taxes. For more information about tax entitlements, please go to https://www.revenue.ie.

This post is eligible for a Hosting Agreement through the University of Galway.

JOB DESCRIPTION

The successful candidate will pursue a PhD in the CerebroMachines Lab, focused on designing therapeutic mechanosensitive-gated polymersomes (**TM2**), with validation through an organ-on-a-chip microfluidic platform (**VRAINORG 1**).

Host institution: University of Galway (Ireland)
PhD enrolment: University of Galway (Ireland)
Secondment: Microfluidic Innovation Centre (France)
Primary supervisor: Dr. Mihai Lomora (University of Galway)
Co-supervisors: Dr. Siobhan Crilly (University of Galway), Dr. Annalisa Tirella (University of Trento), Dr. Lisa Muiznieks (Microfluidic Innovation Centre)

Duties:

- To express and purify engineered mechanosensitive ion channels with facilitated valve opening control.
- To identify the optimal conditions for the fabrication of **TM2** containing the incorporated engineered mechanosensitive valves and the encapsulation and controlled release of the baseline therapeutic, followed by the intended therapeutic.
- To investigate the effect of the **TM2** empty versus therapeutic in the **VRAINORG 1** platform.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants

- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in polymer chemistry, materials science, chemical engineering or supporting fields

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Hands-on expression and purification of membrane proteins
- Experience in soft matter self-assembly, membrane mechanics, or stimuli-responsive nanomaterials
- Experience with relevant characterisation techniques like DLS, TEM, and permeability assays.

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see HERE for further information.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact Dr. Mihai Lomora, Email mihai.lomora@universityofgalway.ie
- University's Strategic Plan
- Working in Research at University of Galway
- Moving to Ireland (Euraxess)
- University of Galway is an equal opportunities employer.

DC3 - Phytoplankton-based micromotors as carriers for cerebrovascular drugs (Ireland)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the CerebroMachines Lab, School of Biological & Chemical Sciences, University of Galway, Ireland.

This position is available from September 2026 for 36 months.

The **CerebroMachines Lab** led by Dr Mihai Lomora is focused on three research pillars: I) Synthesis of Biomimetic Therapeutic Systems for Drug Delivery; II) Vascularized miniature versions of the real human organs (organoids); III) Microfluidic devices for the testing of drug delivery systems or for the integration of drug delivery systems with vascularised mini-human organs. The lab collaborates closely with the Institute for Health Discovery and Innovation (IHDI), and CÚRAM - Research Ireland Centre for Medical Devices.

Gross salary: €52,727 (without family allowance) - €59,199 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions, e.g., deduction of PRSI (Pay-related social insurance) and income taxes. For more information about tax entitlements, please go to https://www.revenue.ie.

This post is eligible for a Hosting Agreement through the University of Galway.

JOB DESCRIPTION

The successful candidate will pursue a PhD in the CerebroMachines Lab, focused on designing therapeutic phytoplankton-based micromotors as carriers for cerebrovascular drugs (**TM3**), with validation within a MIVO® 3D neurovascular unit on-a-chip model (**VRAINORG 3**).

Host institution: University of Galway (Ireland)
PhD enrolment: University of Galway (Ireland)
Secondment: React4Life (Italy)
Primary supervisor: Dr. Mihai Lomora (University of Galway)
Co-supervisors: Dr. Siobhan Crilly (University of Galway), Dr. Silvia Scaglione (React4Life)

Duties:

- To culture phytoplankton and isolated carrier scaffolds;
- To functionalise the surface of phytoplankton scaffolds with micromotor-activating agent, baseline therapeutic, followed by the intended therapeutic (i.e., vasodilator, neuroprotector);
- To investigate the effect of **TM3** phytoplankton micromotor with CVP drugs on the designated **VRAINORG 3** platform.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Materials, Nanoscience/Nanotechnology, Chemical, or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with microalgae/phytoplankton culturing
- Experience with surface functionalization techniques
- Characterization: Microscopy (confocal, SEM), DLS, zeta potential
- Programming: MATLAB/Python/R for microswimmer trajectories, hydrodynamics modeling, or data analysis

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see HERE for further information.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact: Dr. Mihai Lomora, Email: mihai.lomora@universityofgalway.ie
- University's Strategic Plan
- Working in Research at University of Galway
- Moving to Ireland (Euraxess)
- University of Galway is an equal opportunities employer.

DC4 - Layer-by-layer (LbL) capsules release on demand cerebro-protective drugs (Spain)

JOB ADVERTISEMENT
Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate at **POLYMAT**.

This position is available from September 2026 for a duration of 36 months.

POLYMAT is an internationally recognized research center specializing in the synthesis, assembly, and processing of polymers to address 21st-century challenges in energy, electronics, healthcare, and sustainability. Within POLYMAT, the *Polymers for Health* research area focuses on the development of smart polymeric (nano)materials with therapeutic potential. Three pillars within this area are particularly relevant to the **CMT-DN** framework:

1. **Responsive Polymers for Therapeutics** (led by Prof. Marcelo Calderón), which focuses on controlling synthetic parameters to produce functional polymeric materials.
2. **Multifunctional Protein–Polymer Hybrids** (led by Prof. Ana Beloqui), dedicated to the design and development of protein–polymer biohybrids with controlled configurations and therapeutic potential.
3. **Multilayer and Soft Polymers for Biomedicine** (led by Prof. Aitor Larrañaga), centered on the formulation of therapeutic polymer capsules via the layer-by-layer methodology.

Gross salary: €40,692.84 per annum (without family allowance) – €48,612.84 per annum (with family allowance), aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

This amount includes the living allowance and mobility allowance. The family allowance will be applied only if the researcher fulfils the eligibility criteria defined by the European Commission. Salaries are subject to applicable taxes and social security deductions under Spanish legislation.

JOB DESCRIPTION
The successful candidate will pursue a PhD at POLYMAT and University of the Basque Country (EHU), focusing on designing Layer-by-layer (LbL) capsules with cerebro-protective capabilities (**TM4**) with validation in an Organ-on-chip (OOC) microfluidic platform (**VRAINORG 1**)

Host institution: Basque Center for Macromolecular Design and Engineering (POLYMAT, Spain)
PhD enrolment: The University of the Basque Country (EHU, Spain)
Secondment: Microfluidics Innovation Center (France)
Primary supervisor: Prof. Aitor Larrañaga, Prof. Ana Beloqui, Prof. Marcelo Calderón (POLYMAT, EHU)
Co-supervisors: Dr. Maria Valentina Dinu (Petru Poni Institute of Macromolecular Chemistry), Dr. Lisa Muiznieks (Microfluidic Innovation Center)

Duties:

- To identify the optimal conditions for the fabrication of TM4 based on polyelectrolytes containing therapeutic agents;
- To perform physico-chemical characterization, biocompatibility and release studies to fully characterize the LbL capsules as delivery vehicles for therapeutic agents (i.e., vasodilator, neuroprotector);

- To investigate the effect of TM4 on the designated VRAINORG 1 platform;
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in (Bio)Chemistry, (Bio)Materials, Biomedical engineering, or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- **Experience in the synthesis and characterization of nanomaterials**, including techniques such as dynamic light scattering (DLS), scanning electron microscopy (SEM), and transmission electron microscopy (TEM).
- **Experience with in vitro cell–biomaterial interactions**, including cytocompatibility assays as well as gene and protein expression analyses.

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at POLYMAT and the University of the Basque Country (EHU) benefit from a wide range of training and career development opportunities, including transferable skills training, scientific workshops, and international networking activities within the MSCA Doctoral Network. Researchers are encouraged to actively engage in these programmes to support their career development within and beyond academia.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact Prof. Aitor Larrañaga – Email: aitor.larranagae@ehu.eus
- For more information about POLYMAT: https://www.polymat.eu
- For information on living and working in Spain: https://euraxess.ec.europa.eu/spain
- POLYMAT is an equal opportunities employer and holds the HR Excellence in Research Award since 2017

DC5 - Tailored responsive nanogels for cerebro-vascular diseases (Spain)

JOB ADVERTISEMENT
Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate at **POLYMAT**.

This position is available from **September 2026** for a duration of **36 months**.

POLYMAT is an internationally recognized research center specializing in the synthesis, assembly, and processing of polymers to address 21st-century challenges in energy, electronics, healthcare, and sustainability. Within POLYMAT, the *Polymers for Health* research area focuses on the development of smart polymeric (nano)materials with therapeutic potential. Three pillars within this area are particularly relevant to the **CMT-DN** framework:

1. **Responsive Polymers for Therapeutics** (led by Prof. Marcelo Calderón), which focuses on controlling synthetic parameters to produce functional polymeric materials.
2. **Multifunctional Protein–Polymer Hybrids** (led by Prof. Ana Beloqui), dedicated to the design and development of protein–polymer biohybrids with controlled configurations and therapeutic potential.
3. **Multilayer and Soft Polymers for Biomedicine** (led by Prof. Aitor Larrañaga), centered on the formulation of therapeutic polymer capsules via the layer-by-layer methodology.

Gross salary: €40,692.84 per annum (without family allowance) – €48,612.84 per annum (with family allowance), aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

This amount includes the living allowance and mobility allowance. The family allowance will be applied only if the researcher fulfils the eligibility criteria defined by the European Commission. Salaries are subject to applicable taxes and social security deductions under Spanish legislation.

JOB DESCRIPTION
The successful candidate will pursue a PhD at POLYMAT and University of the Basque Country (EHU), focusing on designing synthetic cerebrovascular pathology (CVP)-responsive nanogels (**TM5**), with validation using an organ-on-a-chip microfluidic platform (**VRAINORG 1**).

Host institution: Basque Center for Macromolecular Design and Engineering (POLYMAT)
PhD enrolment: The University of the Basque Country (Spain)
Secondment: Microfluidic Innovation Centre (France)
Primary supervisors: Prof. Marcelo Calderón, Prof. Ana Beloqui, Prof. Aitor Larrañaga (POLYMAT, EHU)
Co-supervisors: Dr. Mihai Lomora (University of Galway), Dr. Lisa Muiznieks (Microfluidics Innovation Center)

Duties:
- To design and fabricate **TM5** that enable the entrapment and release of cerebro-protective drugs upon triggering conditions;
- To characterize the drug protective nature, the entrapment and release of nanogels as delivery nanocarriers containing baseline therapeutic, followed by the intended therapeutic;
- To investigate the effect of TM5 polymeric nanogels on the designated **VRAINORG 1** platform.

- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in (Bio)Chemistry, (Bio)Materials, Biomedical engineering, or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience in the synthesis and characterization of nanomaterials, including techniques such as dynamic light scattering (DLS), scanning electron microscopy (SEM), and transmission electron microscopy (TEM).
- Experience with design and study of drug delivery systems, including characterization techniques such as High-performance liquid chromatography (HPLC), Fast Protein Liquid Chromatography (FPLC), Gel permeation chromatography (GPC), Franz diffusion cells, among others.

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at POLYMAT and the University of the Basque Country (EHU) benefit from a wide range of training and career development opportunities, including transferable skills training, scientific workshops, and international networking activities within the MSCA Doctoral Network. Researchers are encouraged to actively engage in these programmes to support their career development within and beyond academia.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact Prof. Marcelo Calderon, Email marcelo.calderon@polymat.eu
- For more information about POLYMAT: https://www.polymat.eu
- For information on living and working in Spain: https://euraxess.ec.europa.eu/spain
- POLYMAT is an equal opportunities employer and holds the HR Excellence in Research Award since 2017

DC6 - Injectable nano/micro hydrogels for the delivery of brain-therapeutics (Italy)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate at the University of Trento, Italy.

This position is available from 1 November 2026 for 36 months.

Gross salary: €44,084.51 (Living + mobility allowance, without family allowance) - €50,505.23 (Living, mobility + family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions.

JOB DESCRIPTION

The successful candidate will pursue a PhD Programme in Materials, Mechatronics and Systems Engineering focusing on designing Micro/nano injectable hydrogels (**TM6**) and validating them using ibidi® microfluidic chip platforms (**VRAINORG 5**).

Host institution: University of Trento (Italy)
PhD enrolment: University of Trento (Italy)
Secondment: ibidi (Germany)
Primary supervisor: Dr. Annalisa Tirella, Dr. Luca Tiberi (University of Trento)
Co-supervisors: Dr. Siobhan Crilly, Dr. Mihai Lomora (University of Galway), Dr. Zeno Guttenberg (ibidi)

Duties:

- To design and fabricate nano/micro hydrogels that enable the capture and release of brain-therapeutics upon triggering conditions;
- To characterize the hydrogels as delivery nano/micro-carriers for baseline therapeutic, followed by the intended therapeutic (i.e., vasodilator, neuroprotector);
- To investigate the effect of **TM6** injectable nano/micro hydrogels (e.g., toxicity, neuronal response, impact on vascularisation) on the designated **VRAINORG 5** platform.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Chemistry, (Bio)Materials, or related discipline, obtained no more than six years before the deadline of the call;

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with hydrogels and biopolymer systems (e.g., collagen, polysaccharides, ECM-based materials)
- Knowledge of polymer synthesis, functionalisation, and crosslinking strategies
- Familiarity with nano-/microgel fabrication techniques
- Experience with characterization methods such as:
  - Rheology
  - Swelling/degradation studies
  - Microscopy (SEM, TEM)
  - Particle dimensions (DLS)
- Understanding of drug delivery systems or biomaterials for biomedical applications
- Basic knowledge of cell culture or biological evaluation methods is an advantage

CONTINUING PROFESSIONAL DEVELOPMENT

See University of Trento's PhD Guide 2025-2026.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact please contact Dr. Annalisa Tirella - Email annalisa.tirella@unitn.it, or Dr. Luca Tiberi - Email luca.tiberi@unitn.it
- University's Strategic Plan
- Research at University of Trento
- Moving to Italy (Euraxess)
- University of Trento is an equal opportunities employer.

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the Functional Polymers Laboratory, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania.

This position is available from October 2026 for 36 months.

Dr. Maria Valentina Dinu is Group Leader in the Functional Polymers Laboratory, with research focused on the design of advanced polymeric systems, including nano-/microgels, hydrogels, cryogels, and aerogels. These materials are engineered via conventional and advanced structuring techniques (e.g., cryogelation, templating, and leaching) for applications in **biomedicine** (**drug delivery**, **tissue engineering**), as well as environmental and food-related technologies.

Gross salary: €33,272.16 (without family allowance) - €39,081.48 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions.

JOB DESCRIPTION

The successful candidate will pursue a PhD in the Functional Polymers Laboratory, focusing on designing biopolymer-based nano- /microgels (NMGs) for brain treatment (**TM7**) and validating them using an organ-on-chip (OOC) microfluidic platform (**VRAINORG 1**). The project aims to develop **biocompatible and stimuli-responsive nano-/microgel systems** capable of encapsulating and delivering therapeutic agents across brain-relevant environments, contributing to innovative treatments for cerebrovascular diseases.

Host institution: Petru Poni Institute of Macromolecular Chemistry (Romania)
PhD enrolment: Petru Poni Institute of Macromolecular Chemistry (Romania)
Secondment: Microfluidic Innovation Centre (France)
Primary supervisor: Dr. Maria Valentina Dinu (Petru Poni Institute of Macromolecular Chemistry)
Co-supervisors: Dr. Mihai Lomora (University of Galway), Dr. Lisa Muiznieks (Microfluidics Innovation Center)

Duties:

To fabricate a biopolymer-based NMG for the incorporation of brain-related therapeutic

- To perform physicochemical and biocompatibility characterisation of NMG therapeutics for baseline therapeutic (i.e. tPA), followed by the intended therapeutic
- To assess the performance of the **TM7** brain-related NMG- therapeutic in the **VRAINORG1** model
- To design and fabricate **biopolymer-based nano-/microgels (NMGs)** with controlled architecture and functionality for brain-targeted delivery
- To optimize **encapsulation efficiency and controlled release profiles** of model (baseline) and therapeutic agents
- To perform **physico-chemical characterization** of **TM7**, including: particle size and morphology, swelling behavior and degradation kinetics, and mechanical and rheological properties

- To evaluate **biocompatibility and biofunctionality** using relevant in vitro assays
- To investigate the **interaction of NMGs with vascularised brain organoids** within the **VRAINORG 1** microfluidic platform
- To compare performance of **empty vs. therapeutic-loaded NMG systems**
- To contribute to the **integration of NMGs into organ-on-chip systems** for translational validation
- To disseminate research findings through publications, conferences, and outreach activities
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Chemistry, Biomaterials, Materials Science, Polymer Science, or Materials Engineering

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with hydrogels and biopolymer systems (e.g., collagen, polysaccharides, ECM-based materials)
- Knowledge of polymer synthesis, functionalisation, and crosslinking strategies
- Familiarity with nano-/microgel fabrication techniques
- Experience with characterization methods such as:
  - Rheology
  - Swelling/degradation studies
  - Microscopy (SEM, TEM)
  - Particle dimensions (DLS)
- Understanding of drug delivery systems or biomaterials for biomedical applications
- Basic knowledge of cell culture or biological evaluation methods is an advantage

CONTINUING PROFESSIONAL DEVELOPMENT

- Structured **PhD training programme**
- Participation in **CMT-DN-wide training events**, summer schools, and workshops
- Transferable skills training (communication, grant writing)
- Intersectoral exposure through **secondments and collaborations**
- Career development support within an **international, interdisciplinary research network**

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact please contact Dr. Maria Valentina Dinu - Email vdinu@icmpp.ro
- Working in Research at Petru Poni Institute of Macromolecular Chemistry: https://icmpp.ro/index.php
- Petru Poni Institute of Macromolecular Chemistry is an equal opportunities employer, committed to diversity and inclusion in research.

DC8 - Shear-stressed enabled polymer-based nanoreactors (Germany)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the Research Group Sustainable Functional Polymers (Bruns Lab), at the Department of Chemistry of the Technical University of Darmstadt in Germany.

This position is available from September 2026 for 36 months.

The Sustainable Functional Polymers Research Group led by Prof. Dr. Nico Bruns investigates polymer systems for biotechnology, focusing on enzymatic radical polymerizations, nanoreactor and synthetic cells based on block copolymer vesicles, and amphipilic polymer conetworks.
The lab collaborates closely with the research groups of the Centre for Synthetic Biology.

Gross starting salary: €56,265.96 per annum, based on the payscale E13 of the TU Darmstadt and aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

Salaries are subject to taxes and deductions, e.g., health insurance, unemployment contributions, and income taxes.

This post is eligible for a Hosting Agreement through the Technical University of Darmstadt.

JOB DESCRIPTION

The successful candidate will pursue a PhD in the Bruns Lab, focusing on designing shear-stress-responsive polymersome nanoreactors (**TM8**) and validating them using an OrganoPlate® 3D neurovascular unit on-a-chip model (**VRAINORG 2**).

Host institution: Technical University of Darmstadt (TUDa, Germany)
PhD enrolment: Technical University of Darmstadt (TUDa, Germany)
Secondment: Mimetas (Netherlands)
Primary supervisor: Prof. Nico Bruns (Technical University of Darmstadt)
Co-supervisors: Dr. Aitor Larrañaga (Basque Center for Macromolecular Design and Engineering), Dr. Xandor Spijkers (Mimetas)

Duties:

- To synthesise, functionalise, and characterise block copolymers with stimuli-responsive properties;
- To design a shear-activated nanoreactor capable of local synthesis of baseline therapeutics, followed by the intended therapeutic (i.e., vasodilator, neuroprotector);
- To investigate the effect of the **TM8** nanoreactor on the designated **VRAINORG 2** platform.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Chemistry, Nanotechnology, or a related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with organic synthesis
- Experience with polymer synthesis and characterization, especially using controlled radical polymerization methods
- Experience with polymer self-assembly
- Experience with controlled drug-delivery systems

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at Technical University of Darmstadt are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. TU Darmstadt provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Graduate Organisation INGENIUM and the Graduate School Life Science Engineering upon commencing employment - see HERE and HERE for further information.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact please contact Prof. Nico Bruns - Email nico.bruns@tu-darmstadt.de
- TU Darmstadt's Welcome Center for International Researchers
- Welcome to Germany (Euraxess)
- TU Darmstadt is an equal opportunities employer.

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the **Microfluidic Innovation Center (MIC)**, Paris, France.

This position is available from September 2026 for 36 months.

A PhD at MIC is not a typical academic PhD. As a MIC Doctoral Candidate, you will drive scientific research toward a clear product outcome: taking a new microfluidic technology to market by the end of your thesis. You will own end-user-driven research, turning user needs into engineering specifications, building a microfluidic product, and securing the IP at every step.

MIC is a French SME based in Paris, created in 2011 and fully independent since 2024. Our mission is to accelerate the biotech revolution by developing innovative microfluidic prototypes within EU consortia, transforming them into market-ready products, and fostering the creation of deep-tech startups. Ten such startups have been spun out of our technologies to date.

Gross salary: €42,000 (without family allowance) or €48,000 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The value depends on the applicant's eligibility. Salaries are subject to taxes and deductions, e.g., employee social security contributions collected by URSSAF and income tax withheld at source (*prélèvement à la source*). For more information, please visit https://www.impots.gouv.fr.

JOB DESCRIPTION

The successful candidate will pursue a PhD with the Microfluidics Innovation Center (MIC), focusing on designing an Organ-on-chip (OOC) Microfluidic platform validated using cell cultures and brain organoid developments (**VRAINORG 1**), and use this platform for consortium-wide screening of Tiny Machines (**TMs**).

Host institution: Microfluidics Innovation Centre (France)
PhD enrolment: University of Galway (Ireland)
Secondment: University of Galway (Ireland)
Primary supervisor: Dr. Lisa Muiznieks (Microfluidics Innovation Center)
Co-supervisors: Dr. Aitor Larrañaga (Basque Center for Macromolecular Design and Engineering), Dr. Mihai Lomora (University of Galway)

Duties:

- Design and construct a platform for vascularised brain cell perfusion, considering the properties of brain cells (requirement of low shear stress, oxygen levels and pH of culture medium);
- Include sensors for oxygen and pH measurements for real-time monitoring of culture conditions;
- Test and validate system with cell culture / pre-developed brain organoids;

- Use **VRAINORG 1** to test **TM1** & assess potential new findings from other work packages.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Physics, Engineering or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Ideally experience with one or more of the following: cell biology; microfluidics; Python; CFD simulations; 3D CAD
- Strong interest in applying AI-based approaches (experience desirable).
- You are scientifically rigorous, creative and practical.
- You can think “outside the box” to find simple solutions to complicated problems, you are not afraid to tackle complex problems.
- You don’t like routine, and you’re able to quickly adapt to changes in direction.
- You want a job that makes sense, want to see the outcome of your PhD in the real world.
- Knowledge of French is a plus, but not required.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact please contact Dr. Lisa Muiznieks - Email lisa.muiznieks@microfluidic.fr

- About the Microfluidics Innovation Center

- Moving to France (Euraxess)

- MIC is an equal opportunities employer.

DC10 - Vascularised brain-on-chip screen using OrganoPlate® (Netherlands)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with **MIMETAS BV**, the Netherlands.

This position is available from September 2026 for 36 months.

MIMETAS is a rapidly growing company that specializes in human disease modelling using organ-on-a-chip technology. We are on a mission to pioneer the first generation of medicines grounded entirely in human data, using our unique disease modelling platform that is human, comprehensive, and scalable. Our disease models are designed to discover new therapeutic approaches and bring more drugs to patients by reducing attrition, while lowering development costs. MIMETAS has an open culture, where achievements go hand in hand with a fun place to work. Our close-knit team stays successful by maintaining a good atmosphere while working in a highly competitive field. MIMETAS' headquarters are based in Leiden, The Netherlands and our manufacturing facility is based in Enschede, The Netherlands. We have subsidiaries in Gaithersburg, MD, USA, and Tokyo, Japan.

Gross salary: €62,221.92 (without family allowance) - €68,161.92 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions.

This post is eligible for a Hosting Agreement through the Amsterdam University Medical Center.

JOB DESCRIPTION

The successful candidate will pursue a PhD with MIMETAS BV, focusing on the development of an OrganoPlate® 3D neurovascular unit on-a-chip model (**VRAINORG 2**) and use this platform to test mechanosensitive gated polymersomes (**TM2**)

Host institution: MIMETAS BV (Netherlands)
PhD enrolment: Amsterdam University Medical Center (Netherlands)
Secondment: Amsterdam University Medical Center (Netherlands), University of Galway (Ireland)
Primary supervisor: Dr. Xandor Spijkers (MIMETAS BV)
Co-supervisors: Prof. Nico Bruns (Technical University of Darmstadt), Prof. Elga de Vries (Amsterdam University Medical Center), Dr. Mihai Lomora (University of Galway)

Duties:

- Develop and characterize 3D neurovascular unit on-a-chip models comprising brain microvascular endothelial cells, astrocytes, neurons, and immune cells in the OrganoPlate®;
- Model cerebrovascular pathologies, e.g. modelling ischemic stroke using oxygen/glucose deprivation techniques or modelling neuroinflammation using cytokines;

- Develop and validate assays to assess effects of cerebrovascular pathologies in the neurovascular unit on-a-chip model
- Use **VRAINORG 2** to test **TM2** & assess potential new findings from other work packages.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Plan and execute experiments independently;
- Report on a regular basis to internal stakeholders;
- Disseminate your research in peer-reviewed journals
- Write standard operating procedures;
- Contribute to general lab duties.

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- You have a master's degree in biology, pharmaceutical sciences, biomedical sciences, bio-engineering, or a related field;
- You want to work in the lab in multi-disciplinary teams to tackle tough tissue modeling problems
- You are experienced in high quality tissue culture, (confocal) microscopy and image analysis software;
- You have experience with (live) cell-based assays and molecular analysis techniques (incl qPCR, ELISA, IF);
- Your work is of high quality; you work accurately and safely;
- You are a motivated, flexible, and positive team player;
- You have excellent communication skills in English.
- You have a passion to support new therapy discovery and development, and have an affinity to work in an international, fast-growing high-tech environment at the edge of industry and academia

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience or affinity with organ-on-a-chip models or other advanced 3D *in vitro* modeling
- Knowledge of the CNS and its vascular & immune components, neurovascular unit

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at MIMETAS are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. MIMETAS and the Amsterdam UMC graduate school provide continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia.

FURTHER INFORMATION/LINKS

www.mimetas.com

DC11 - Vascularised brain-on-chip screen using MIVO® (Italy)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with React4Life, Genoa, Italy.

This position is available from 1st of November 2026 for 36 months.

React4Life is an Italian deep-tech/biotech company revolutionising preclinical research through its groundbreaking MIVO® organ-on-chip technology, developed over more than two decades of academic research. Their MIVO® human-on-chip platform overcomes the limitations of traditional in vitro cell-based assays and animal models, delivering greater reliability and predictivity across drug testing, personalised medicine, immuno-oncology, and beyond. With a growing global client base and a distinctly Italian flair for innovation, React4Life turns complex biotech challenges into customised, cutting-edge solutions.

Gross salary: €44,544 (without family allowance) - €52,464 (with family allowance) per annum, **plus daily lunch ticket of €7** aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions.

Information for University of Milano-Bicocca's Visa Permit and Stay.

JOB DESCRIPTION

Job Description:

The successful candidate will pursue a PhD with React4Life, focusing on designing a MIVO® 3D neurovascular unit on-a-chip model (**VRAINORG 3**) and use this platform to test metal organic frameworks for cerebrovascular pathologies / CVPs (**TM 1**)

Host institution: React4Life (Italy)

PhD enrolment: University of Milano-Bicocca (Italy)

Secondment: University of Galway (Ireland), University of Milano-Bicocca (Italy)

Primary supervisor: Dr. Silvia Scaglione (React4Life)

Co-supervisors: Dr. Maria Valentina Dinu (Petru Poni Institute of Macromolecular Chemistry), Dr. Mihai Lomora (University of Galway), Prof. Laura Cipolla (University of Milano-Bicocca)

Duties:

- Develop and characterize 3D neurovascular unit on-a-chip models comprising brain microvascular endothelial cells, astrocytes, neurons, and circulating immune cells in the MIVO® OOC;
- Model neuroinflammation using cytokines and immune cells infiltration and interplay;

- Develop and validate assays to assess effects of cerebrovascular pathologies in the neurovascular unit on-a-chip model (immunostaining, PCR, ATP production, production of reactive oxygen species, mitochondrial assays, immune cell adhesion/migration);
- Use **VRAINORG 3** to test **TM1** & assess potential new findings from other work packages.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Cell biology, Biotechnology, Bioengineering, or similar degrees

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with cell cultures
- Experience with NAMS

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact please contact Dr. Silvia Scaglione - Email s.scaglione@react4life.com

- Doctoral Research at the University of Milano-Bicocca

- Moving to Italy (Euraxess)

- React4Life is an equal opportunities employer.

DC12 - Vascularised brain-on-chip screen using in-house 3D brain models (Italy)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate at the University of Trento, Italy.

This position is available from November 2026 for 36 months.

CIBIO is the Department of Cellular, Computational and Integrative Biology at the University of Trento. Cellular and molecular biology are integrated with synthetic biology in an interdisciplinary environment encompassing chemistry, computer science, mathematics, physics, and engineering. The research conducted at CIBIO is divided into four principal areas: i) Genomics and Cancer Biology; ii) Cellular and Molecular Biology; iii) Microbiology and Synthetic Biology; iv) Developmental Biology and Neurobiology. Equal importance is given to fundamental research and new therapeutic methods.

Gross salary: €44,084.51 (Living + mobility allowance, without family allowance) - €50,505.23 (Living, mobility + family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions.

JOB DESCRIPTION

The successful candidate will enrol in a PhD Programme in Biomolecular Sciences, focusing on designing 3D Vascularized brain models (**VRAINORG 4**) used to validate metal-organic frameworks (**TM1**).

Host institution: University of Trento (Italy)

PhD enrolment: University of Trento (Italy)

Secondment: Ibidi (Germany), University of Galway (Ireland)

Primary supervisor: Dr. Luca Tiberi, Dr. Annalisa Tirella (University of Trento)

Co-supervisors: Dr. Siobhan Crilly, Dr. Mihai Lomora (University of Galway), Dr. Zeno Guttenberg (ibidi)

Duties:

- Develop and characterize in-house 3D brain models with vasculature;
- Model neuroinflammation using cytokines and immune cells infiltration and interplay;
- Develop and validate assays to assess effects of cerebrovascular pathologies in the 3D vascularised brain models (immunostaining, PCR, ATP production, production of reactive oxygen species, mitochondrial assays, immune cell adhesion/migration);
- Use **VRAINORG 4** to test **TM1** & assess potential new findings from other work packages.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in in Biomedical Engineering, Microfluidics, or related discipline, obtained no more than six years before the deadline of the call

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with hydrogel matrices (ECM, collagen)
- Hands-on iPSC/stem cell differentiation, cell co-culture optimization
- Related characterisation: cytotoxicity, barrier integrity assays (TEER, immunofluorescence), confocal microscopy

CONTINUING PROFESSIONAL DEVELOPMENT

See the University of Trento's PhD Guide 2025-2026.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact Dr. Luca Tiberi Email luca.tiberi@unitn.it, or Dr. Annalisa Tirella, Email annalisa.tirella@unitn.it
- University's Strategic Plan
- Research at University of Trento
- Moving to Italy (Euraxess)
- University of Trento is an equal opportunities employer.

DC13 - Vascularized brain-on-chip screen using ibidi® chip platform technology (Germany)

JOB ADVERTISEMENT
Applications are invited from suitably qualified candidates for a full-time, fixed-term position as Doctoral Candidate with ibidi.

This position is available from September 2026 for 36 months.

ibidi is a leading supplier for functional cell-based assays and advanced products for cellu microscopy. ibidi is located in Gräfelfing, Germany, close to Munich. Our comprehensive portfo includes a wide range of µ-Slides, µ-Dishes, and µ-Plates, offering robust solutions for both standa cell culture applications and complex biological assays such as angiogenesis, chemotaxis, wou healing, shear stress, and flow dynamics. In addition to consumables, ibidi provides advanc instrumentation, including precision heating and incubation systems, as well as a unique perfusi system that simulates physiological flow conditions, such as those found in blood vessels. All ib products are designed with high-end microscopy in mind, ensuring optimal results for phase contra DIC, fluorescence, and confocal imaging.

Gross salary: €57,217.44 (without family allowance) - €63,157.44 (with family allowance) per annu aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deduction.

This post is eligible for a Hosting Agreement through the Technical University of Darmstadt.

JOB DESCRIPTION
The successful candidate will pursue a PhD at ibidi, focusing on designing a vascularised brain-on-ch platform using ibidi® chip technology (**VRAINORG 5**) for testing phytoplankton swarming devic (**TM3**)

Host institution: ibidi (Germany)
PhD enrolment: Technical University of Darmstadt (Germany)
Secondment: University of Galway (Ireland)
Primary supervisor: Dr. Zeno Guttenberg (ibidi)
Co-supervisors: Dr. Annalisa Tirella (University of Trento), Dr. Mihai Lomora & Dr. Siobhan Crilly (University of Galway)

Duties:
- Develop and characterize **VRAINORG 5** using the ibidi® chip platform technology;
- Model neuroinflammation using cytokines and immune cells infiltration and interplay;
- Develop and validate assays to assess effects of cerebrovascular pathologies on
- established ibidi® chip platform (immunostaining, PCR, ATP production, production of reacti oxygen species, mitochondrial assays, immune cell adhesion/migration);
- Use **VRAINORG 5** to test **TM 3** and assess potential new findings from other work packages.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Biophysics, Biotechnology, Biology, or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with hydrogel matrices (ECM, collagen)
- Experience with cell culture, light microscopy, fluorescent staining, 3D cell culture,
- organ-on-chip
- Experience with Microfluidics, 3D printing, CAD design

CONTINUING PROFESSIONAL DEVELOPMENT

Researchers at ibidi are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. Additionally, t University of Darmstadt provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact please contact Dr. Zeno Guttenberg –
- Email zguttenberg@ibidi.de

- Mission & Principles

- Idibi at a glance

- Moving to Germany (Euraxess)

- Ibidi GmbH is an equal opportunities employer.

DC14 - 3D Brain-on-a-chip screen using in-house 3D brain models (Ireland)

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed-term position as a Doctoral Candidate with the CerebroMachines Lab, School of Biological & Chemical Sciences, University of Galway, Ireland.

This position is available from September 2026 for 36 months.

The **CerebroMachines Lab** led by Dr Mihai Lomora is focused on three research pillars: I) Synthesis of Biomimetic Therapeutic Systems for Drug Delivery; II) Vascularized miniature versions of the real human organs (organoids); III) Microfluidic devices for the testing of drug delivery systems or for the integration of drug delivery systems with vascularised mini-human organs. The lab collaborates closely with the Institute for Health Discovery and Innovation (IHDI), and CÚRAM - Research Ireland Centre for Medical Devices.

Gross salary: €52,727 (without family allowance) - €59,199 (with family allowance) per annum, aligned with the EC rules Marie Skłodowska-Curie Doctoral Networks grants.

The range depends on the applicant's eligibility. Salaries are subject to taxes and deductions, e.g., deduction of PRSI (Pay-related social insurance) and income taxes. For more information about tax entitlements, please go to https://www.revenue.ie.

This post is eligible for a Hosting Agreement through the University of Galway.

JOB DESCRIPTION

Job Description:

The successful candidate will pursue a PhD in the CerebroMachines Lab, focused on designing and characterising 3D neurovascular unit on-a-chip models using ibidi® chips (**VRAINORG6**), which will serve for the validation MOFs (**TM1**).

Host institution: University of Galway (Ireland)

PhD enrolment: University of Galway (Ireland)

Secondment: ibidi (Germany)

Primary supervisor: Dr. Mihai Lomora (University of Galway)

Co-supervisors: Dr. Luca Tiberi (University of Trento), Dr. Zeno Guttenberg (ibidi), Dr. Constantina Papatriantafyllopoulou (University of Galway)

Duties:

- Develop and characterize 3D neurovascular unit on-a-chip models comprising brain microvascular endothelial cells, astrocytes, neurons, and circulating immune cells in the custom ibidi® chips;
- Model neuroinflammation using cytokines and immune cells infiltration and interplay;

- Develop and validate assays to assess effects of cerebrovascular pathologies in the neurovascular unit on-a-chip model (immunostaining, PCR, ATP production, production of reactive oxygen species, mitochondrial assays, immune cell adhesion/migration);
- Use **VRAINORG 6** to test **TM1** & assess potential new findings from other project workpackages.
- To implement the CMT-DN DC Roles & Responsibilities - applicable for all DC applicants
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- See CMT-DN Essential Requirements – applicable for all DC applicants
- A Master's degree in Biomedical Engineering, Microfluidics, or related discipline

Desirable Requirements:

- See CMT-DN Desirable Requirements – applicable for all DC applicants
- Experience with hydrogel matrices (ECM, collagen)
- Hands-on iPSC/stem cell differentiation, cell co-culture optimization
- Related characterisation: cytotoxicity, barrier integrity assays (TEER, immunofluorescence), confocal microscopy

CONTINUING PROFESSIONAL DEVELOPMENT

Continuing Professional Development/Training:
Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see HERE for further information.

FURTHER INFORMATION/LINKS

- For informal enquiries, please contact Dr. Mihai Lomora, Email mihai.lomora@universityofgalway.ie
- University's Strategic Plan
- Working in Research at University of Galway
- Moving to Ireland (Euraxess)
- University of Galway is an equal opportunities employer.

How to Apply

The application portal is now available here. Applications are only accepted through the application portal. **We cannot accept applications by email.**

You will need to **download and complete the Mobility Declaration form**, which is available here. The Mobility Declaration does not need your exact address. Please only include the country and major city/region.

Ensure you have **renamed your CV, Mobility Declaration form, and cover letter/research statement** using the following format:

- ➔ Lastname_firstname-CV.pdf. (e.g. Curie_Marie-CV.pdf)
- ➔ Lastname_firstname-CoverLetter.pdf. (e.g. Curie_Marie-CoverLetter.pdf)
- ➔ Lastname_firstname-MobilityDeclaration.pdf. (e.g. Curie_Marie-MobilityDeclaration.pdf)

Ensure that your CV and Cover Letter demonstrate your suitability for the programme and chosen DC project and explain your motivation for applying.

You are strongly advised not to use AI to write your Cover Letter. We want to hear from you, not an AI bot. We want to see your individual writing style; we are not interested in receiving hundreds of applications that all sound the same.

Closing date for receipt of all applications is 17:00 (Irish Time) on May 20, 2026. It will not be possible to consider applications received after the closing date.

Please ensure that you allow sufficient time to make your online submission in advance of the closing date.

Please note that closing dates/ times will not be extended for user error.

Late applications will not be accepted.

We reserve the right to re-advertise or extend the closing date for this post.

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency-based recruitment.