FAroGels

MSCA Doctoral Network

DOCTORAL CANDIDATE POSITION

DC[3] – Magnetic Resonance-Based Characterization of Aerogel Systems

Position	DC3 - Magnetic Resonance-Based Characterization of Aerogel Systems
Project	FAroGels – Food-Grade Aerogels for Sustainable Food Systems
Funding programme	Horizon Europe – Marie Skłodowska-Curie Actions Doctoral Networks (HORIZON-MSCA-2025-DN-01-01)
Grant Agreement number	101312450
Recruiting/Host organisation	The Nottingham Trent University (TNTU), United Kingdom
PhD awarding institution	The Nottingham Trent University (TNTU), United Kingdom
Type of contract	Fixed-term employment contract, 36 months
Job status	Full-time (100%)
Application deadline	09 December 2026, 23:59 (CET)
Expected start date	April 2027

About FAroGels

FAroGels – Food-Grade Aerogels for Sustainable Food Systems is a Marie Skłodowska-Curie Actions Doctoral Network funded by the European Union under Horizon Europe. The network brings together academic and non-academic partners with complementary expertise in food science and technology, materials science, biopolymer science, biotechnology, process engineering, analytical characterization, packaging and sustainable innovation. **FAroGels** aims to develop, characterize and validate food-grade, bio-based and biodegradable aerogels for sustainable food systems. The network will investigate how these highly porous materials can support more efficient food processing, improved food quality and safety, nutritional and sensory functionality, protection and delivery of bioactive compounds, and sustainable packaging solutions.

Position Description

This position forms part of the **FAroGels** research program on food-grade, bio-based, and biodegradable aerogels and their application in sustainable food systems. The selected candidate will be employed by Nottingham Trent University and will be required to enroll as a PhD student at The Nottingham Trent University, in accordance with the relevant admission and enrolment requirements.

The doctoral project will focus on:

- Creating advanced magnetic-resonance (MR) tools to characterise internal structure, hydration dynamics, and functional behaviour of food-grade aerogels, and to translate these into better processing and quality control. This will involve the use of Magnetic Resonance Imaging including protocol development, and the creation of bench-top magnetic time domain nuclear magnetic resonance (TD-NMR) device for use in different laboratory spaces.
- Nottingham Trent University has a platform TD-NMR technology utilising low-cost electronics with combinations of magnets and radiofrequency coils to create systems optimised for specific applications. Using different formulations of aerogels and with different target applications in mind, a small number of bespoke TD-NMR analytical tools will be created.
- This project links to the work of a number of other doctoral candidates who will be optimising formulation, managing drying and seeking applications of the aerogels. This project will provide an analytical toolkit to all project partners.
- The position will involve laboratory-based research, data analysis, scientific communication and close collaboration with other FAroGels Doctoral Candidates, supervisors and partner organizations.

Supervisory Team

The Doctoral Candidate will be supervised by a team combining academic and non-academic expertise:

Role	Name	Organisation	Country
Main supervisor	Dr. Rob Morris	The Nottingham Trent University (TNTU)	United Kingdom
Academic co-supervisor	Dr. Edward Breeds	The Nottingham Trent University (TNTU)	United Kingdom
Industry supervisor	Dr. Nazende Günday-Türeli	MyBiotech GmbH (MyB)	Germany

Planned Secondments

As part of the training programme, the Doctoral Candidate will complete planned secondments at FAroGels partner organisations:

Host organisation	Sector	Country	Duration
Technische Universitat Hamburg (TUHH)	Academic	Germany	2 months
University of Santiago de Compostela (USC)	Academic	Spain	1 month
Perfat Technologies Oy (PT)	Non-academic	Finland	2 months
Superex	Non-academic	Türkiye	2 months

Main Responsibilities

The Doctoral Candidate will be expected to:

- Conduct research on magnetic resonance analysis of aerogels for quality assurance and to support formulation.
- Use our MRI scanner to understand diffusion, porosity, hydration patterns, and structural variation across different aerogel formulations, and develop a deep understanding of the links between structural information and performance.
- Create a compact benchtop TD-NMR device tailored to aerogels with a combination of simulation and practical construction. This will be experimentally verified against the MRI results. Using CPMG sequences with inverse Laplace transform analysis, the instrument will be used to quantify pore-scale water mobility, hydration states, and structural stability.
- Develop industrial-scale integration and analytical scalability of the time domain system towards the end of the project.
- Plan, perform, document and analyse experimental work using relevant laboratory, analytical, processing and/or modelling methods.
- Participate actively in FAroGels network meetings, workshops, training schools, seminars and transferable-skills activities.
- Undertake planned secondments at FAroGels partner organisations, as specified for the DC project.
- Work collaboratively with academic and non-academic partners across the FAroGels network.
- Prepare scientific reports, project deliverables, presentations, publications and, where relevant, other dissemination or exploitation-related outputs.

Requirements

- **Educational Background**: Master's degree (or equivalent) in physics, electromechanical engineering, food engineering or similar.
- **Skills**: Essential - Strong laboratory and analytical skills in magnetic resonance (imaging or TD-NMR), Desirable - development of magnetic resonance hardware or devices
- **Languages**: Proficiency in English (written and spoken) is required.
- Strong motivation to pursue doctoral research in an international and interdisciplinary environment.
- Ability to work independently while contributing effectively to collaborative research activities.
- Good organization, communication and problem-solving skills.
- Willingness to travel for planned secondments, network meetings and training activities.
- Commitment to responsible research conduct, inclusion, collegiality and professional development.

MSCA Doctoral Network Eligibility Criteria

Applicants of any nationality are welcome to apply. At the date of recruitment, applicants must meet the following MSCA Doctoral Network requirements:

- **Doctoral candidate status:** Applicants must not already hold a doctoral degree. Applicants who have successfully defended their doctoral thesis but have not yet been formally awarded the doctoral degree are not eligible.
- **Mobility rule:** Applicants must not have resided or carried out their main activity (work, studies, etc.) in the United Kingdom for more than 12 months in the 36 months immediately before the recruitment date. Compulsory national

service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention or EU temporary protection are not taken into account. **Compliance is verified before the start of employment, on the basis of the candidate's passport and, where necessary, other documents.**

- **PhD enrolment:** Doctoral Candidates must be enrolled in a doctoral programme leading to the award of a doctoral degree in at least one EU Member State or Horizon Europe Associated Country. For this position, this is the doctoral programme at The Nottingham Trent University; applicants must therefore meet its admission requirements.
- **Institution-specific requirements:** Applicants will need an overall IELTS (International English Language Testing System) score of 6.5 with minimum sub-scores of 6.0 in all component sections (writing, reading, listening and speaking) and the equivalent of a first or upper second class honours degree (you may need a Statement of Comparability).

→ **Visa and residence permit:** a visa or residence/work permit is not required at the application stage and is not a selection criterion. Where needed, it will be arranged after selection and before the start of employment, with the support of the recruiting organisation. Candidates from non-EU countries are equally welcome to apply.

What FAroGels Offers

- A full-time doctoral position funded through the FAroGels MSCA Doctoral Network.
- A fixed-term employment contract for 36 months at The Nottingham Trent University.
- A competitive salary and employment conditions in accordance with the MSCA Doctoral Networks funding provisions, applicable national legislation and the policies of TNTU.
- Social-security coverage and other employment-related benefits in accordance with the applicable national and institutional framework.
- A Personal Career Development Plan (PCDP), prepared with the supervisory team and reviewed and updated during the project.
- Access to research facilities, infrastructure, training and support services at the Host Institution and within the FAroGels network.
- Participation in a structured doctoral training programme including scientific and technical training, transferable skills, career development and innovation-oriented activities.
- Planned secondments at FAroGels partner organizations, offering complementary scientific, technical and cross-sectoral experience.
- An international research environment and opportunities to build a professional network across academia and non-academic organizations.

Salary and Financial Package

This position is funded by the FAroGels MSCA Doctoral Network (HORIZON-MSCA-2025-DN-01-01, Grant Agreement No. 101312450). The salary is based on the following monthly MSCA allowances:

- **Living allowance:** EUR 4,010, adjusted **by the country correction coefficient** of the country of the recruiting organisation to ensure equal treatment and comparable purchasing power for all researchers.
- **Mobility allowance:** EUR 710, contributing to mobility-related costs such as relocation and travel.
- **Family allowance (if applicable):** EUR 660, paid for the months in which the Doctoral Candidate has a family during the project, including where family obligations arise after recruitment. 'Family' means persons linked to the researcher by marriage (or a relationship with equivalent status recognised by the legislation of the country where it was formalised) or dependent children actually being maintained by the researcher. The allowance is paid in accordance with the rules of the recruiting organisation, and supporting documents may be requested.

Monthly MSCA allowances for this position

Component	Calculation (per month)
Living allowance	EUR 4,010 × [country correction coefficient = 141.7%] (see guidance below)
Mobility allowance	Fixed amount = EUR 710.00
Total without family allowance	Living + mobility allowance
Total with family allowance	Living + mobility + EUR 660

Please note: *the amounts above represent the total employment cost, from which the employer's and the employee's compulsory social-security contributions and taxes are deducted in accordance with national law. Unless the recruiting organisation provides additional funding, the gross salary paid to the Doctoral Candidate is therefore lower than these amounts, and the net salary depends on personal circumstances.*

Country correction coefficients of the FAroGels beneficiaries

Country	CCC	Living allowance	+ mobility (EUR 710)	+ family (EUR 660)
Türkiye	64.5%	2,586.45	3,296.45	3,956.45
Poland	74.1%	2,971.41	3,681.41	4,341.41
Italy	95.3%	3,821.53	4,531.53	5,191.53
Spain	95.6%	3,833.56	4,543.56	5,203.56
Germany	101.2%	4,058.12	4,768.12	5,428.12
Finland	118.0%	4,731.80	5,441.80	6,101.80
United Kingdom	141.7%	5,682.17	6,392.17	7,052.17

Employment conditions: the Doctoral Candidate will be hired full-time (100%) by the recruiting organisation on a 36-month employment contract, with social-security coverage under national law that continues during secondments.

- This Doctoral Candidate position is funded by the FAroGels MSCA Doctoral Network for a maximum period of 36 months.
- The overall period required to complete a PhD degree may, depending on the regulations of the PhD awarding institution and applicable national requirements, extend beyond the 36-month FAroGels funding period.

Please note: *any employment, scholarship or other financial support beyond the 36-month FAroGels funding period is not covered or guaranteed by FAroGels. Any potential continuation of employment or funding would need to be considered separately between the relevant institution and the Doctoral Candidate, subject to institutional regulations and the availability of funds.*

About the Host and PhD Awarding Institution(s)/Organizations

The physics team at Nottingham Trent University delivers diverse fundamental and applied research, working internationally, across disciplines, to create and embed new knowledge and ideas. In the latest research excellence framework, 98% of the research submitted (Unit B12) was recognised as world-leading or internationally excellent in terms of originality, significance and rigor. Within the school of physical sciences there is a wide array of state of the art instruments and equipment including high field NMR, MRI, SEM, TEM, confocal microscopy, X ray diffraction, micro-CT alongside a suite of bespoke instrumentation.
The successful candidate must fulfil the admission and enrolment requirements of

Item	Information
Doctoral programme / doctoral school	The Nottingham Trent University
Relevant faculty / department	Department of Physical Sciences
PhD admission and enrolment requirements	Applicants will need an overall IELTS (International English Language Testing System) score of 6.5 with minimum sub-scores of 6.0 in all component sections (writing, reading, listening and speaking) and the equivalent of a first or upper second-class honours degree (you may need a Statement of Comparability).
Official PhD admission / enrolment webpage	https://www.ntu.ac.uk/study-and-courses/postgraduate/phd/how-to-apply
Separate PhD application or enrolment procedure	Yes – The successful candidate will need to enrol through the Nottingham Trent University portal above and demonstrate how they meet the competencies here: https://www.ntu.ac.uk/__data/assets/pdf_file/0019/2315413/Postgraduate-Researcher-Competency-Based-Admissions-Framework-and-Guidance.pdf.
Recognition of foreign qualifications	You may require a statement of comparability (https://www.enic.org.uk/individuals/statement-of-comparability). NTU will let you know if this is the case, you do not need to request one before applying.

Application Documents

Please submit the following documents:

- A detailed curriculum vitae, including education, research experience, technical skills and relevant achievements.
- A motivation letter explaining your interest in this specific DC position, your relevant background and your suitability for the project.

- Copies of Bachelor's and Master's diplomas and academic transcripts, or evidence that the relevant degree will be completed before the recruitment date.
- Contact details for two referees and reference letters, according to the requirements of Nottingham Trent University.
- Proof of IELTS English-language proficiency above 6.0 in all subscores with an overall average of 6.5 or higher.
- Incomplete applications may not be considered.

How to Apply

Applications for this position must be submitted through **both** of the following channels:

1. **Direct application to the recruiting organisation:** please read the guidance and submit your application here https://www.ntu.ac.uk/study-and-courses/postgraduate/phd/how-to-apply. You will need to select the self-funded option when asked.
2. **FAroGels online application form** – in addition, please complete the application form at https://farogels.eu/apply/ and upload the same documents there.

Indicative timeline

- **Application deadline:** 09 December 2026, 23:59 (CET)
- **Interviews:** January 2027
- **Evaluation:** February 2027
- **Selection outcome:** February 2027
- **Expected start of employment:** April 2027

Please note: *Applicants should ensure that all required documents are submitted before the stated deadline. Please note that a separate PhD admission and/or enrolment procedure may apply at TNTU.*

Selection Process

FAroGels follows an open, transparent and merit-based recruitment process in line with the European Charter for Researchers:

- Eligibility check by the FAroGels Project Manager.
- Evaluation of the eligible applications by an Interview Committee (primary supervisor, co-supervisor(s) and a representative of a non-academic partner) with a standardised scoring matrix; the three to five best-ranked candidates are shortlisted.
- Online interview with the shortlisted candidates.
- Approval of the selection by the FAroGels Supervisory Board, after which an offer is made.

All applicants are informed of the outcome and receive feedback on request.

Equal Opportunities and Data Protection

FAroGels and TNTU are committed to equal opportunities, diversity and inclusion. Applications from all qualified candidates are welcome, irrespective of gender, gender identity or expression, sexual orientation, ethnic or social origin, nationality, disability, age, religion or belief.

Personal data submitted with applications will be processed by TNTU exclusively for recruitment purposes and in accordance with the applicable data-protection legislation and institutional privacy policies.

Contact Information

- **For scientific questions regarding the DC project, please contact:**

Professor Rob Morris
Physical Sciences
Nottingham Trent University
Email: rob.morris@ntu.ac.uk

- **For questions regarding the application process and/or PhD admission and enrolment, please contact:**

Post Graduate Research Administration
Nottingham Trent University
Email: pgr.admin@ntu.ac.uk
Website: https://www.ntu.ac.uk/study-and-courses/postgraduate/phd/how-to-apply

- **General questions about FAroGels and the recruitment process:** FAroGels Project Management Team, Middle East Technical University (METU), Ankara, Türkiye – farogels@metu.edu.tr
- **General information on FAroGels:** https://farogels.eu/



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