FAroGels

MSCA Doctoral Network

DOCTORAL CANDIDATE POSITION

DC[1] – Valorisation of Seaweed Residues for Food-Grade Aerogels

Position	DC1 - Valorisation of Seaweed Residues for Food-Grade Aerogels
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	Agencia Estatal Consejo Superior de Investigaciones Científicas, M.P. (Spanish National Research Council, CSIC), Institute of Agrochemistry and Food Technology (IATA), Packaging Group - BIOFUN Laboratory, Paterna (Valencia), Spain
PhD awarding institution	Universitat Politècnica de València (UPV), Doctoral School, PhD Programme in Food Science, Technology and Management, Food Technology Department, Valencia, Spain
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	July 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 programme on food-grade, bio-based and biodegradable aerogels and their application in sustainable food systems. The selected candidate will be employed by CSIC and based at IATA in Paterna (Valencia), Spain, and will be required to enrol as a PhD student at the Universitat Politècnica de València (UPV), in accordance with the relevant admission and enrolment requirements.

The doctoral project will focus on developing aerogels from seaweed-derived biomass. Aerogels are among the lightest solid materials ever created: highly porous, versatile and capable of combining properties that are difficult to achieve in conventional materials. Our challenge is to rethink them from a circular perspective.
The PhD project will explore how algae—and particularly fractions and residues generated during their processing—can be transformed into lightweight, porous, and functional materials, taking advantage not only of their polysaccharides but also of the complexity of the whole biomass.
The research will combine biomass fractionation, formulation, structure design, freeze-drying and advanced material characterization, with the goal of understanding how composition and processing determine the final aerogel properties.
But the ambition goes beyond making an aerogel. We want to answer questions such as:

Can we design high-performance materials while using algae more efficiently and generating less waste?

- Can different components of algal biomass work together instead of being extensively purified?
- Can processing residues become the starting point for a new generation of functional materials?
- And can we design these materials for real applications where sustainability actually matters?

The project sits at the intersection of food science, biomaterials, circular bioeconomy and materials engineering, offering plenty of room for creativity and scientific exploration.
These materials will feed other FAroGels projects developing cushioning, thermal-insulation and active absorbent packaging solutions, thereby linking circular biomass valorisation to practical sustainable-food applications.
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. Amparo López Rubio	Agencia Estatal Consejo Superior de Investigaciones Científicas, M.P. (Spanish National Research Council, CSIC)	Spain
Academic co-supervisor	Dr. Isabel Hernando	Universitat Politecnica de Valencia (UPV)	Spain
Industry supervisor	Dr. Benito González	Aerofybers Technologies S.L. (AFyb)	Spain

Planned Secondments

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

Host organisation	Sector	Country	Duration
University of Santiago de Compostela (USC)	Academic	Spain	2 months
Akademia Gorniczo-Hutnicza Im. Stanislawa Staszica W Krakowie (AGH University of Krakow)	Academic	Poland	1 month
Sunar Misir Entegre Tesisleri A.S. (SM)	Non-academic	Türkiye	1 month
MyBiotech GmbH (MyB)	Non-academic	Germany	2 months
aerogel-it GmbH (AIt)	Non-academic	Germany	1 month

Main Responsibilities

The Doctoral Candidate will be expected to:

- Conduct DC1 research on seaweed-residue characterisation and pre-treatment; hydrogel formulation and physical structuring; food-compatible solvent exchange and supercritical CO_2 drying; food-safe hydrophobisation; and physicochemical, structural, moisture-response and mechanical characterisation of the resulting aerogels.
- Plan, perform, document and analyse experimental work using relevant laboratory, analytical, processing and/or modeling 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 Food Science and Technology, Food or Agricultural Engineering, Materials or Polymer Science, Chemistry, Chemical Engineering, Biotechnology or a closely related field that provides access to doctoral studies at UPV.
- **Skills:** Strong experimental and data-analysis skills. Experience in one or more of the following areas is desirable: biomass or seaweed valorisation, biopolymer extraction and characterisation, hydrogel or aerogel processing, rheology, FTIR spectroscopy, microscopy, porous-material characterisation, moisture sorption or mechanical testing.
- **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 Spain 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 Food Science, Technology and Management at UPV; applicants must therefore meet its admission requirements.
- **Institution-specific requirements:** Applicants must satisfy UPV doctoral admission requirements and obtain the endorsement of the proposed thesis supervisor. Before appointment, the successful candidate must provide the documentation required for a CSIC employment contract and, where applicable, obtain the necessary visa and authorisation to reside and work in Spain.

→ **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, full-time employment contract for 36 months at CSIC, based at IATA in Paterna (Valencia), Spain.
- A competitive salary and employment conditions in accordance with the MSCA Doctoral Networks funding provisions, applicable national legislation and the policies of the CSIC.
- 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 = 95.6%] (see guidance below)

Component	Calculation (per month)
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.

Funding Duration and PhD Completion

- 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 Spanish National Research Council (CSIC) is Spain's largest public research organisation. The Doctoral Candidate will be based at the Institute of Agrochemistry and Food Technology (IATA-CSIC), a multidisciplinary food-research institute located in Paterna, Valencia. Within IATA's Packaging Group, the BIOFUN laboratory investigates structure-function relationships in food biopolymers and develops bio-based materials and ingredients from waste and alternative resources. The candidate will have access to facilities for biomass processing, hydrogel and aerogel preparation, supercritical CO_2 drying, high-pressure processing, rheology, spectroscopy, microscopy, thermal and mechanical analysis, moisture sorption and biodegradability/compostability testing. The PhD degree will be awarded by the Universitat Politècnica de València through its Doctoral School and PhD Programme in Food Science, Technology and Management, which recognises IATA as a collaborating research institution. DC1 will be supervised by Dr Amparo López-Rubio (CSIC) with Isabel Hernando as tutor from UPV, and industrial supervision from Dr Isaac Benito González (Aerofybers Technologies).

The successful candidate must fulfill the admission and enrolment requirements of the Universitat Politècnica de València (UPV).

Item	Information
Doctoral programme / doctoral school	PhD Programme in Food Science, Technology and Management, UPV Doctoral School
Relevant faculty / department	Food Technology Department, Universitat Politècnica de València

Item	Information
PhD admission and enrolment requirements	Applicants must meet the general access requirements for official doctoral studies and the programme's specific criteria. The usual route is an official bachelor's degree plus an official master's degree, or equivalent qualifications, comprising at least 300 ECTS in total. The recommended profile includes a master's degree in Food Science, Food Technology, Food Engineering, Food Safety or Food Quality. Related profiles may be admitted with up to 20 ECTS of complementary training. Supervisor endorsement is required; academic English at approximately B2 level is recommended.
Official PhD admission / enrolment webpage	https://www.upv.es/entidades/edoctorado/en/doctoral-program-in-food-science-technology-and-management/ https://www.upv.es/admision/admision-doctorado/index-en.html
Separate PhD application or enrolment procedure	Selection for the FAroGels position and admission to the UPV doctoral programme are separate procedures. The successful candidate must submit an online UPV pre-registration application and, after admission, complete enrolment. Because the FAroGels selection is expected to conclude after the standard 2026/2027 pre-registration deadline, the applicable timing must be coordinated with the UPV Doctoral School and the programme's Academic Committee.
Recognition of foreign qualifications	Degrees from EHEA countries may provide access without formal recognition if they correspond to EQF level 7 and grant access to doctoral studies in the issuing country. For degrees from outside the EHEA, UPV must verify equivalence to a Spanish master's-level qualification and that the degree grants doctoral access in the issuing country. Details: https://www.upv.es/entidades/edoctorado/en/information-for-holders-of-official-degree-issued-outside-spain/
Additional requirements	Documents issued outside the EU/EEA may require legalisation or an apostille and an official translation into Spanish. Applicants are responsible for any UPV equivalence-study and enrolment fees. Non-EU/EEA candidates may require a visa and residence/work authorisation; the selected candidate should begin these procedures promptly after receiving the formal offer.

Application Documents

Applicants are strongly advised to read the position description and the eligibility criteria carefully before applying. Each application must include:

- A detailed curriculum vitae (education, research experience, technical skills and relevant achievements), including the dates and countries of residence, studies and employment for the last 36 months.
- A motivation letter explaining your interest in this position and your suitability for the project.
- Copies of Bachelor's and Master's diplomas and academic transcripts, or evidence that the Master's degree will be completed before the recruitment date.
- Contact details of two referees and reference letters.
- Proof of English-language proficiency, if required by the PhD awarding institution.
- A completed MSCA eligibility declaration covering doctoral status and country of residence/main activity during the 36 months preceding recruitment; a copy of a passport or national identity document; and, where applicable, certified translations and documentation required by UPV to assess a foreign degree.
- 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** – to apply, please e-mail the required documents in PDF format to amparo.lopez@iata.csic.es, using the subject line **"FAroGels DC1 application – SURNAME"**. Applications must be received by 9 December 2026. The vacancy will also be advertised through EURAXESS and the FAroGels website. The successful candidate will subsequently be required to complete the applicable formal CSIC recruitment procedure, including registration in the CSIC Job Bank if requested by CSIC Human Resources.
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:** July 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 CSIC.*

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 CSIC 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 CSIC 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:**

Dr Amparo López-Rubio, DC1 Supervisor
Packaging Group - BIOFUN Laboratory, Institute of Agrochemistry and Food Technology (IATA)
Spanish National Research Council (CSIC)
Email: amparo.lopez@iata.csic.es

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

PhD Programme in Food Science, Technology and Management / UPV Doctoral School
Universitat Politècnica de València (UPV)
Email: doctor.aliment@upv.es
Website: https://www.upv.es/entidades/edoctorado/en/doctoral-program-in-food-science-technology-and-management/

- **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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