FAroGels

MSCA Doctoral Network

DOCTORAL CANDIDATE POSITION

DC[13] – Aerogels Integrated into Electrospun Fibers for Innovative Food Solutions

Position	DC13 - Aerogels Integrated into Electrospun Fibers for Innovative Food Solutions
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	Faculty of Metals Engineering and Industrial Computer Science / Department of Metal Science and Powder Metallurgy / Electrospun fibers Group, Krakow, Poland
PhD awarding institution	AGH University of Krakow, Material Science discipline
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	March 2027 (earliest)

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 AGH University of Krakow and will be required to enroll as a PhD student at the Doctoral School at AGH University of Krakow, in accordance with the relevant admission and enrolment requirements.

The doctoral project will focus on:

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- The doctoral project will focus on the development of hybrid electrospun fiber–aerogel systems that combine the structural benefits of nanofibrous mats with the high porosity and functionality of biopolymer aerogels. The main scientific challenge is to achieve precise control over material architecture while ensuring mechanical stability and functional performance relevant to food packaging applications.
- Food-grade polymers will be processed via electrospinning to produce high-surface-area fibers with tunable porosity and flexibility. Key processing parameters, including applied voltage, flow rate, tip-to-collector distance, and environmental humidity, will be systematically optimized to tailor fiber morphology and network structure. These fibrous materials will be integrated with aerogel matrices to form hybrid systems with enhanced properties.
- The resulting materials will be comprehensively characterized to establish structure–function relationships. Morphology will be analyzed using scanning electron microscopy (SEM), while chemical properties will be

examined using Fourier-transform infrared spectroscopy (FTIR). Mechanical behavior and barrier performance, including water vapor transmission rate (WVTR) and oxygen permeability, will be evaluated.

- The project will deliver hybrid systems with controlled morphology and validated structural integrity, supported by complete characterization data. It will also demonstrate the incorporation and controlled release of bioactive compounds. Ultimately, the research will enable the development of packaging-relevant prototypes with improved barrier properties and active functionality, alongside a predictive framework linking processing conditions to material performance for industrial application.
- 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. Urszula Stachewicz	AGH University of Krakow (AGH)	Poland
Academic co-supervisor	Dr. Joanna KnapczykKorczak	AGH University of Krakow (AGH)	Poland
Industry supervisor	Dr. Isaac 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
Agencia Estatal Consejo Superior de Investigaciones Cientificas (CSIC)	Academic	Spain	2 months
The Nottingham Trent University (TNTU)	Academic	United Kingdom	2 months
BKEA LTD. (BKEA)	Non-academic	Malta	2 months
Sunar Misir Entegre Tesisleri A.S. (SM)	Non-academic	Türkiye	1 month

Main Responsibilities

The Doctoral Candidate will be expected to:

- Conduct research on electrospinning and characterization of electrospun fibers
- 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 a relevant field, e.g., chemistry, materials science, food technology, or chemical engineering.
- **Skills**: Strong laboratory and analytical skills in electrospinning and polymer chemistry
- **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 Poland 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 AGH University of Krakow; applicants must therefore meet its admission requirements.
- **Institution-specific requirements:** English language certificate, minimum level of B2, master's degree certificate. The doctoral school at AGH University takes 4 years, which requires continuation as a PhD student for 1 year after finishing the employment contract.

→ **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 AGH University of Krakow.
- A competitive salary and employment conditions in accordance with the MSCA Doctoral Networks funding provisions, applicable national legislation and the policies of AGH University of Krakow.
- 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 = 74.1%] (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

Country	CCC	Living allowance	+ mobility (EUR 710)	+ family (EUR 660)
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 successful candidate must fulfil the admission and enrolment requirements of AGH University of Krakow.

Item	Information
Doctoral programme / doctoral school	AGH University of Krakow
Relevant faculty / department	Discipline: Materials Science
PhD admission and enrolment requirements	All information on the website provided below. The enrollment will happen only after successful outcome for the employment for the PhD position at AGH University.
Official PhD admission / enrolment webpage	https://sd.agh.edu.pl/en/
Separate PhD application or enrolment procedure	Yes.
Recognition of foreign qualifications	By email to ustachew@agh.edu.pl
Additional requirements	- A motivation letter including a description of scientific interests (in English) - A CV in English (detailed CV including a list of achievements, academic degrees, publications, technical skills, research stays, and other relevant experience) - Contact details of two referees - Scans of diplomas (including the Master's degree diploma) and other certificates confirming qualifications - Transcript of records from Master's studies, including the grade point average

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 for two referees and reference letters, according to the requirements of AGH University of Krakow.
- Proof of English-language proficiency, if required by the PhD awarding institution.
- Incomplete applications may not be considered.

How to Apply

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

1. **Method of application: by email.** Please send applications to: ustachew@agh.edu.pl (Prof. Urszula Stachewicz). Please include "PhD FAroGels" in the subject line of the email. The position is advertised at https://fibers.agh.edu.pl/news/ https://www.metal.agh.edu.pl/ and EURAXESS Jobs Portal for AGH University of Krakow.
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:** March 2027 (earliest)

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 AGH University of Krakow.*

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 AGH University of Krakow 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 AGH University of Krakow exclusively for recruitment purposes and in accordance with the applicable data-protection legislation and institutional privacy policies.

Contact Information

- **Scientific questions about the project:**

Prof. Urszula Stachewicz, Electrospun Fibers Group, email: ustachew@agh.edu.pl

- **Application process and PhD admission:**

Doctoral School ate AGH University of Krakow
https://sd.agh.edu.pl/en/candidates
email: sdbiuro@agh.edu.pl

- **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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