

Research fellowship on: Development high added-value products from fish industry waste, PNRR iNEST Project, Interconnected North-East Innovation Ecosystem - Implementing Entity: University of Padua, - CUP: H43C22000540006

The present document in English is to be considered as a mere summary of the main provisions of the notice of competition which is available in Italian at the following ([link](#)) The text in Italian is the official text of the notice of competition for all legal intents and purposes and, in the event of non-conformity with the present document, it shall prevail.

Description

The “Centro temporaneo Progetto Ecosistema dell’Innovazione” at Università Ca' Foscari Venezia, in charge of the administrative management of the above mentioned project, invites applications for a fellowship in:

Title: Development high added-value products from fish industry waste

SSD or Research sector: CHIM06 – CHIM07

Scientific coordinator or supervisor: Prof. Maurizio Selva, Prof. Matteo Gigli

Duration: 24 months

Abstract:

Fish industry generates large amounts of waste. Over 10 Mt/y of waste is globally produced from the sole fishing activities, while aquaculture contributes with more than 30 Mt/y of fish and aquatic plants residues. Fish waste causes huge environmental problems due to its degradation, sometimes occurring very quickly, which gives rise to toxic and malodorous compounds capable of altering the aquatic and marine environments. In this framework, the purpose of this project is the sustainable valorization of the waste coming from both fishing and fish farming for the production of high added-value molecules and materials. More in detail, the outlined research activities aim at developing innovative strategies for: i) the extraction of the lipidic fraction of the fish waste and its subsequent chemical functionalization to produce bioactive molecules and monomers for the synthesis of biobased plastics; ii) the processing of crustacea waste by integrated approaches such as chemical pulping coupled with mechanochemical and extrusion treatments to obtain pure chitin and chitosan and their functionalized derivatives; iii) the fabrication of biofilms from polymeric matrices derived from fish waste, such as collagen and chitin (also in the form of nanowhiskers), or from other commercially available biopolymers loaded with additives obtained from fish waste to produce active packaging (e.g. showing antioxidant, antibacterial and UV-shielding characteristics); iv) the preparation of hybrid nanostructures, also in combination with other biobased polymers, e.g. natural polyphenols, to generate nanocarriers for the controlled release of active compounds; v) the development from fish waste matrices of heterogenous catalytic systems, such as films or nanofibers, for water remediation from organic pollutants.

The research may be carried out in English.

The fellowship is intended to provide the successful candidate with the opportunity to pursue his/her own research while benefiting from the range of expertise at Università Ca' Foscari Venezia.

Who can apply

Prospective candidates are expected to hold a Master's degree of chemistry or industrial chemistry or equivalent title obtained abroad and a professional scientific curriculum suitable for carrying out research activities.

Ca' Foscari encourages applications from researchers with positive evaluation in all the criteria in individual proposals such as Marie Skłodowska Curie Actions - Individual Fellowships/ERC Starting Grants/FIRB (Italian Fund for basic research investments)/SIR (Scientific Young Independence Research) or similar.

Researchers having successfully completed Marie Skłodowska Curie Actions - Individual Fellowships/ERC Starting Grants/FIRB (Italian Fund for basic research investments)/SIR (Scientific Young Independence Research) or similar funded projects are warmly encouraged to apply.

The following are considered preferential qualifications:

- the PhD;
- the completion of attendance at a doctorate course pending the award of the qualification;
- specialization diplomas and certificates of attendance at postgraduate specialization courses, obtained both in Italy and abroad; the performance of documented research activities carried out with public and private entities both in Italy and abroad;
- research periods at qualified foreign institutions of at least three months' duration.

Duration of contract: 24 months (approximately starting in February 2023)

Stipend: The research fellowship amounts to 24.320,38 Euros per year, gross percipient net of charges to be borne by the institution.

Deadline for submission of applications: January 09, 2023, 12.00 noon CET.

How to apply:

Candidates must submit:

1. The application form
2. A motivation letter (max 1 page) along with their CV in European format, duly dated and signed, both enclosed as a one single.pdf file. ([link](#))
3. A copy of a valid identity document (either Identity Card or Passport);
4. (If available) Evaluation Summary Reports of Marie Skłodowska Curie Actions - Individual Fellowships/ ERC Starting Grants/FIRB (Italian Fund for basic research investments)/SIR (Scientific Young Independence Research) individual proposals having passed all the evaluation thresholds;
5. (If available) Details of Marie Skłodowska Curie Actions - Individual Fellowships, ERC Starting Grants, FIRB (Italian Fund for basic research investments)/ SIR Scientific Young Independence Research funded projects;
6. A declaration of availability to hold the interview online (template available at this [Link](#)), which is to be emailed to: inest_pnr@unive.it
7. Any other documents, qualifications and publications deemed relevant for the selection procedure (See the notice at this [link](#)).

Templates for the above mentioned documentation are available on the University's website ([link](#)).

How to submit your application

Applications must be submitted online, exclusively through the procedure that can be entered at the following link:

<https://apps.unive.it/domandeconcorso-en/accesso/inest090123sviluppoprod>

After submitting the application, the candidate will receive a submission number and an e-mail acknowledging receipt of his/her application.

The candidate can, if necessary, access the procedures and update uploaded data and materials via the link provided by the e-mail. Updates are only accepted before the deadline of **January 09, 2023, 12.00 noon CET**.

Please note that the candidate can contact the University for any support needs until 24 hours prior to the deadline.

In case of a high number of applications and / or weight of the materials uploaded by the candidates the system might become slower, therefore it is suggested not to start the application process close to the deadline.

NB: The University does not take on responsibility for wrong or late communication of addresses, nor for any communication problem not depending on the University.

Evaluation

Up to 100 points, specifically:

For qualifications and publications, from 0 up to 60 points (42 points is the minimum score for admission to the interview)

For the interview, from 0 up to 40 points (28 point is the minimum score for passing the interview)

Selection procedure

Interviews will take place on January 17, 2023, at 14.00. am CET.

The list of candidates admitted to the interview, the timetable, the venue of the interview, together with notice of any postponements, or changes in the time of the interview, will be announced on **January 13 , 2023** by means of a notice that will be published at the following [link](#). **It is the candidate's responsibility to check the admission results and, if admitted, to show up at the required date and time.**

The interview may ascertain knowledge of the following topic:

- Methods for the extraction of lipophilic and hydrophilic compounds from complex biobased matrices;
- Chemical functionalization of biobased polymers and molecules;
- Preparation of nanostructures (nanoparticles, nanofibers and nanocrystals) from biobased matrices;
- Techniques for the elucidation of the chemical structure of biobased low molecular weight compounds and polymers;
- Techniques for the determination of the size and morphology of nanostructures such as nanoparticles and nanofibers;
- Methods for the determination of the antibacterial and antimicrobial activity of biobased compounds and bionanocomposites.

Information and contacts

Candidates may find further details about the application process and the research project in the official call published at the following ([link](#))

For further information please contact CESA, email: inest_pnrr@unive.it