



Università
Ca' Foscari
Venezia

Dipartimento di Scienze
Molecolari e Nanosistemi

Dipartimento di Scienze Molecolari e Nanosistemi
Università Ca' Foscari Venezia
Campus Scientifico – Via Torino 155, 30170 Mestre (VE)
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Research fellowship on “Supramolecular catalysis in confined systems in organic media and water” - Università Ca' Foscari Venezia
(Italian law 30 December 2010, n.240, art. 22 and subsequent amendments and additions)

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 Department of Molecular Sciences and Nanosystems at Università Ca' Foscari Venezia invites applications for a fellowship titled “Supramolecular catalysis in confined systems in organic media and water”, SSD: CHIM/06, project PRIN 2022 titled “CAGED: Supramolecular catalysis in self-organized nanocontainers”, CUP H53D2300468000”, tutor and principal investigator: Prof. Alessandro Scarso.

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.

Abstract: The project aims at empowering specifically designed or already in-hands catalysts to mimic enzyme-like properties like substrate selectivity, regioselectivity, and stereoselectivity. To this goal:

- Surfactant aggregates in water and molecular resorcinarene-based self-assembled capsules in organic media will be employed as confined systems where catalytic reactions will be developed. The modular nature of the aggregates grants availability in a few synthetic steps, easiness of tuning, and production of libraries.
- Organometallic (specifically, Pd(II) complexes with carbene, phosphine, and amine-type ligands) and organic catalysts (secondary amines and selected H-bond donors) will be combined with the self-assembling systems to test for the enhancement of the catalytic activity and product as well as substrate selectivity.

The approach will then be tested over a set of relevant reactions in organic synthesis. These include, but are not limited to, allylic substitution, cycloadditions, alkene oxidation, Baeyer Villiger ketone oxidations, addition, and condensations.

The work will take place at the Department of Molecular Sciences and Nanosystems of the Ca' Foscari University of Venice.

Who can apply

Prospective candidates are expected to hold a master's degree in the field of chemical sciences (or equivalent) or equivalent qualification obtained abroad and 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 qualifications are considered as evaluation criteria:

- holding a PhD;
- having completed the attendance of a PhD programme, although not having yet obtained the PhD title;
- specialisation diplomas and attendance certificates at post-graduate specialisation courses, obtained both in Italy or abroad, documented research activity in public and private organisations with contracts, study



grants or assignments both in Italy and abroad;

d. documented research activity carried out in international research groups on the topics of the call.

e. Publications relevant to the topic of the call in international journals with anonymous referees (with evaluation of the candidate's personal contribution and IF journal)

Duration of contract: 12 months, approximately starting: **December 2023**

Stipend: The research fellowship amounts to **20.402,77 Euros** per year including taxes and social charges.

Deadline for submission of applications: 07th November 2023, at 12.00 noon.

How to apply:

Candidates shall submit:

1. The application form;
2. A motivation letter (max 1 page) along with their CV in European format, duly dated and signed, both to enclosed as a one single.pdf file ([link](#)); a declaration must be appended in the footnote of the curriculum, pursuant to the Italian DPR 445/2000 and subsequent amendments and additions, that the information provided corresponds to the truth. Moreover the candidates have to consent to the use of their personal data for the purposes of this selection procedure pursuant to the Italian Legislative Decree 196/2003 and to the EU Regulations 2016/679;
3. The attachments called “obligations and understanding” and “participation and compatibility”;
4. All documents, qualifications and publications relevant for the selection procedure (please, see the notice - [link](#));
5. A copy of a valid identity document (either Identity Card or Passport);
6. (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;
7. (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;
8. Declaration on availability to held the interview in remote ([Link](#)) to be send via email at the following address: ricerca.dsmn@unive.it

All the schemes of the quoted documentation are available on the website ([link](#)).

Incomplete applications will be rejected.

How to submit your application

Applications should be submitted by the online procedure, available on this link:

<https://apps.unive.it/domandeconcorso-en/accesso/dsmn-scarsoprin2022>

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

The candidate if necessary could access the procedures for updating any data and materials by the link provided by the e-mail, in any case any updates must be made no later than the deadline 07th November 2023, at 12.00 noon.

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

Please note that in case of an high number of applications and / or weight of the materials loaded by the



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candidates the system might become slower, Therefore it is suggested not to start the 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.

Topics of the interview:

- Assessment of knowledge of organic synthesis, supramolecular chemistry, catalysis, structural determination of molecules by multinuclear and multidimensional NMR spectroscopy and mass spectrometry;
- Previous skills in the field of organic synthesis and molecular characterization ;
- Previous skills in chemistry and supramolecular catalysis;
- Assessment of the knowledge of the foreign language English by carrying out part of the interview in English;
- Italian language assessment for foreign candidates.

Evaluation

Up to 100 points, specifically:

For qualifications, publications and possible tests, from 0 to 60;

For interview, from 0 to 40.

Selection procedure

The interview will be on 13/11/2023 at 10:00 a.m.

The interview will be held in remote at the link:

meet.google.com/rav-sxcf-ozp

Information and contacts

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

For further information please contact the Research Office, email: ricerca.dsmn@unive.it, Ph: 0412348633/8514.