Research fellowship on Added-value chemical products and energy from bio-waste: (Anaerobic Digestion and Microalgae) integrated bio-phys-chem processes for a circular economy approach - Università Ca’ Foscari Venezia
(Italian law 30 December 2010, n.240, art. 22)

Description
The Department of Environmental Sciences, Informatics and Statistics at Università Ca’ Foscari Venezia invites applications for a post-doc fellowship in:

**TITLE:** Added-value chemical products and energy from bio-waste: (Anaerobic Digestion and Microalgae) integrated bio-phys-chem processes for a circular economy approach

**SSD:** ING-IND/25

**DURATION:** 12 months

**Objectives:** Recent E.C. Directives offer a clear scenario on the expected evolution of the waste policy and the energy market. Two remarkable aspects emerge: i) bioprocesses applied to waste streams will be a cornerstone of a green revolution for the development of material and energy recovery technologies from renewable sources; ii) an approach based on a Circular Economy Package is adopted. This consists of an Action Plan intended to "close the loop" of product lifecycles through greater recycling and re-use, and bring benefits for both the environment and the economy.

In this context the proposed project targets different type of wastes such as the agro-food waste originating from the food industry (namely the food processing waste, FPW, e.g. wine marc, pomace, wine lees), the waste activated sludge (WAS) produced during wastewater treatment and the organic fraction of municipal solid waste (OFMSW) obtained through the separate waste collection. Now these streams became primary renewable resources to produce added-value products and biofuels.

The project is based on the integration among anaerobic digestion process and microalgae cultivation and divided in three main aspects:

i) the production of methane as energy carrier through anaerobic digestion (AD) of wastes;

ii) the application of microalgae for biogas upgrading (CO2 utilization) and for nutrient uptake from AD effluent, with the accumulation of lipids (biodiesel) or proteins;

iii) the use of green solvents including supercritical CO2 for the extraction of polyhydrosxycarcanoate (PHA), lipids and other compounds from wastes and other organic intermediates.

The project fully meets the EC directive requests about renewable energies: in fact the anaerobic digestion process is applied to winery
by-products (i.e. wine lees), to the waste activated sludge produced during wine wastewater treatment process, and to the OFMSW.

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 in Environmental Science, Chemistry, Industrial Biotechnology, Environmental Engineering or related disciplines.

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.

Duration of contract: 12 months approximately starting: September 2017.

Stipend: The research fellowship amounts to 19,367 Euros per year, including taxes and social charges.

Deadline for submission of applications: June 26rd h. 12,00 a.m. (Rome CET).

How to apply:

Candidates should submit:
1. The application form;
2. A CV in European format, duly dated and signed (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. All documents, qualifications and publications relevant for the
selection procedure (please, see the notice - link);

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

How to submit your application

Applications should be submitted by the online procedure, available on the notice webpage (link).

Or submit here:
Link: http://static.unive.it/domandeconcorso-en/accesso/dais3017cavinato

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 June 26rd h. 12,00 a.m. (Rome CET).

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 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.

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 held in any case on June 29th, h. 10.30 a.m. (Rome CET) at the Department of Environmental Sciences, Informatics and Statistics, Ca’ Foscari University of Venice, Scientific Center, Alfa Building - 3 floor - Prof. Prof. Paolo Pavan office, Via Torino, 155 – Mestre (Venice).

Any postponement, will be published on the University’s webpage (link).

The interview

Candidates will be required to demonstrate the following skills, knowledge and expertise:
- Use of microalgae for wastewater treatment, microalgae characterization and count technologies, photobioreactor operation and monitoring, evaluation of best growth conditions, anaerobic digestion process.

- Verification of Italian language for foreign applicants;
- Verification of English languages.

Candidates living farther than 200 Kms from Venice may ask to hold a telematic interview.

**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 Dott.ssa Cristina Cavinato - email: [cavinato@unive.it](mailto:cavinato@unive.it)

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