Marie Curie Doctoral Researchers – FERNS project (ref. 101226611)

Call for One Doctoral Researcher

Reference FERNS_DR8

We are excited to announce an opening for a motivated Doctoral Researcher to work on "**Development of wearable green electronics for non-invasive electrochemical sensing (DR8)**" as a part of the H2024 Marie Skłodowska-Curie Doctoral Network funded by the Europen Commission "**Holistic integration of eco-Friendly design tools and materials, fabrication technologies for the responsible co-creation of future Sustainable integrated electronic systems (FERNS**)" (grant agreement number 101226611). The network brings together 20 universities, research institutes, and industrial partners from eight countries. Our aim is to train the next generation of researchers in the implementation of eco-design approaches for the realization of sustainable electronics.

1. **Job description:** We are now looking for a Doctoral Researcher to join the project and to grow into an expert in sustainable flexible electronics for non-invasive sweat sensing. The aim of the work is to develop high sensitivity non-invasive sensors for non-enzymatic glucose electrochemical detection in sweat, using a new technology based on laser-induced graphene (LIG), using as precursor materials, different kinds of flexible substrates, like polymers and cellulose based materials.

2. **Admission Requirements:** For this position, we require:

   a) Master's degree in materials science or related fields.
   b) Very good English language skills.
   c) Ability to write and publish high-quality research papers in peer-reviewed journals.
   d) Ability to conduct systematic scientific research, and inquiring mind and problem-solving skills.
   e) Ability to work in a team and communicate clearly in multidisciplinary and international environment but also work and think independently.
   f) Ability to carry out the abovementioned secondments abroad as well as to travel to consortium meetings and international conferences.
   g) Successful applicants must not already hold a doctoral degree.

According to the Marie Skłodowska-Curie Actions (MSCA) mobility rule, the researcher must not have resided or carried out their main activity (work, studies, etc.) in Portugal for

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more than 12 months in the 3 years immediately prior to their recruitment. Compulsory national service and/or short stays such as holidays and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not considered. The formal requirements need to meet by the end of the application period (e.g., degree completion).

3. **Workplan:** The workplan will focus on:

a) Selection of new cellulosic and polysaccharide-based materials and membranes.

b) Optimization of DLW on selected materials using alternative CO_2 and UV laser systems.

c) Development of iontophoresis modules with electrodes produced by green LIG process, for sweat stimulation

d) Integration of glucose sensor and wearable sweat sensing demonstration

e) Assessment of sustainability and benchmarking against commercial wearable solutions (not sustainable)

f) Collaboration with the other colleagues across i3N and with FERNS partners to develop novel integrated sensing platforms with low environmental footprints.

g) Engagement in the dissemination of the data through peer-reviewed scientific publications, report writing, and conference presentation.

h) Engagement in appropriate training and professional development opportunities.

i) Undertake planned secondments with consortium partners.

j) Participation in Education and Public Engagement activities, as required.

The job includes two secondments: TracXon (3 months), The Netherlands, and TAU (4 months), Finland.

4. **Workplace:** The work will be developed at the Institute for Nanostructures, Nanomodelling and Nanofabrication (i3N) of the NOVA School of Science and Technology, and/or in other facilities that may be necessary for its execution, under the scientific supervision of Professor Elvira Fortunato and Dr. Tomás Pinheiro.

5. **Application deadline and submission of applications:** The call for applications is open from 28th October 2025 to 31st December 2025. Applications must be sent exclusively by e-mail, mandatorily indicating in the subject of the email the reference "**FERNS_DR8**" to ferns@fct.unl.pt The application must be instructed with the following documents:

a) Application form (handwritten forms will not be accepted).
b) Curriculum Vitae (max. 2 pages), with a list of publications, if applicable.
c) A free form motivation letter, outlining how you meet the criteria for this role (max. 1 page).
d) Copy of degree certificates and transcript of records (M.Sc. and B.Sc. studies) in original language. If original language is other than Portuguese or English, please provide an official translation in one of those languages.
e) Other relevant documents that support your application.

All documents must be sent as a single PDF file.

For further information and informal enquiries please contact Professor Elvira Fortunato or Dr. Tomás Pinheiro at ferns@fct.unl.pt.