



**A 3-years postdoc & a 4-years PhD posts are open in Benedetto's Biophysics Lab in UC Dublin on Atomic Force Microscopy & Neutron Scattering of lipid bilayers, cell membranes and cancer cells**

We are looking for (i) a motivated and talented young researcher, with good experience in Atomic Force Microscopy (AFM) of lipid bilayers, biomembranes and/or cells, and for (ii) a motivated student to join our group at the School of Physics and Conway Institute of Biomolecular and Biomedical Research at University College Dublin (Dublin, Ireland) as **Postdoctoral Researcher** (3-years) and **PhD student** (4-years), respectively, starting in early 2023 (flexible).

The two open positions are part of a major 4-years cross-disciplinary research grant, recently awarded, focused on the effects of complex organic electrolytes of the family of ionic liquids on: (a) lipid bilayers and lipid nanoparticles, (b) the functioning of mechano-sensing membrane protein channels, and (c) the viscoelasticity, migration, adhesion and invasion of selected cancer cell lines along with their extra cellular matrices (ECM). AFM coupled with fluorescence (for structure & mechanics), neutron scattering (e.g., QENS, NSE, SANS & neutron reflectometry), patch clamping (for electrophysiology measurements), and several cell biology approaches (e.g., survival assays, flow cytometry, western blotting, migration & adhesion assays) will be used.

**The project will profit of a brand-new new-generation bio-Atomic Force Microscope mounted on an epi-fluorescence optical microscope, which is currently under acquisition.** Additionally, several other instrumentations are locally available including: several AFMs including three Asylum MFP-3D bio-AFM (one mounted on a confocal microscope), an Asylum Cypher AFM and a Bruker ICON AFM, several optical microscopes (e.g. Epi-fluorescence, confocal, FRET, FLIM, FRAP, TIRF) and electron microscopes (TEM and SEM), a cell biology and a flow cytometry core facilities. The neutron scattering experiments will be carried out at the project partner institutions – National Institute of Standards and Technology (USA) and Paul Scherrer Institut (CH) – and beyond.

The **postdoctoral researcher** will work on the AFM part of the project focused on study the morphology and mechanics of lipid bilayers, cell membranes, cells and ECMs under the effect of selected ionic liquids. As a result, the ideal candidate for this post will have a PhD in Physics, Chemistry or related disciplines and experience in the use of AFM (coupled with fluorescence) to study the morphology and mechanics of lipid bilayers, cell membranes and/or cells, perhaps acquired during his/her PhD. The salary is set by the national pay-scale and includes yearly increases each year of the contract. The average yearly gross salary will be about Eur 43,000.

The **PhD student** will be trained in both bio-AFM and neutron scattering as well as on several cell biology assays. His/her project will focus on the absorption of selected ionic liquids in lipid bilayers of increasing complexity and in selected cancer cell lines, and their effect on the functioning of membrane protein channels and the systems' viscoelasticity. The ideal candidate for this post will have a BSc in Physics, Chemistry or related disciplines. Having a MSc is not required but will be positively considered as well as having experience in related topics. The value of the scholarship is set by the national scale. The yearly net salary will be about Eur 18,000.

**For more info** on our research please visit the group web-site <http://www.antonibenedetto.eu>

**To apply** email CV, publications' list (if any), and a motivation letter to [antonio.benedetto@ucd.ie](mailto:antonio.benedetto@ucd.ie)

**Deadline: Saturday 17<sup>th</sup> December 2022**