

NANOTECHNOLOGIES FOR PRECISION MEDICINE AT CNR-NANOTEC - ITALY

CNR-NANOTEC (the National Research Council Institute of Nanotechnology, www.nanotec.cnr.it) is launching a new, long-term research program to foster translation to the clinical practice of advances in Nanotechnology and Photonics by establishing a direct interface between basic and clinical scientists.

One of the main areas of activity will be in Neurodegenerative Diseases, in particular methods for non-invasive pre-symptomatic diagnosis and human *in vitro* models of neurodegeneration for preclinical testing of new treatment (see <http://nanotec.cnr.it/polaris/>).

We are looking for a highly motivated, enthusiastic and outstanding post-doctoral candidate for a research position based in Lecce, but for most of the time delocalized in Rome, in the following area:

Role, characterization and effects of electro/mechanical cues of *in vitro* models of amyotrophic lateral sclerosis. The candidate will be fully involved in an exciting and ambitious program project dealing with a multidimensional analysis of the cellular microenvironment. In particular, our studies are focused in: (i) identifying the response of model cells in ALS to electrical stimulation; (ii) identifying the overlapping role of mechano/electrotactic cues; (iii) validation of the model chips in ALS.

The information gathered by this project will be instrumental to shape the design of novel regenerative strategies proposed by the project. The project will be carried out in close collaboration with the Nanotec Institute located in Lecce. We seek highly motivated and dynamic individuals with a strong interest for translational research and teamwork attitude. The applicant must have prior working experience with cell culture, in molecular and cellular biology and also, capability with electrophysiological investigations, including functionality assessment through cellular and molecular biological assay (Western Blot, cell viability, etc). Practical work on this project will range from analysis, timelapse, confocal imaging and co-localizing the signal with a cellular surface marker and immunostaining. He/She will also study pathway signalling and focal adhesions (FAKs) in response to external cues. Experience of calcium signalling would be beneficial. They will also be required to have excellent molecular biology and live cell microscopy skills. Experience in cell transfection, quantitative RT-PCR, Electrophoresis, Nucleic Acid extraction, Protein extraction would be advantageous. The ability to work independently and as part of a team, excellent communication, organisational, problem solving skills and write scientific papers are essential.

Experiences with organ-on-chip and/or chemical synthesis of scaffolds will be considered additional beneficial skills of the prospective candidate.

The position is for 4 years, renewable every year. Salary will be on the CNR scales, according to qualifications and experience, up to a maximum net salary of 45 k€.

Please submit your motivation letter, CV with the names and contacts of at least two scientific referees and a resumé of your achievements over the past 4-5 years to the attention of Prof. Lorenzo Moroni, who will be the main supervisor of the post-doc fellow, at barbara.cortese@nanotec.cnr.it and l.moroni@maastrichtuniversity.nl quoting the reference TM2.

Living in Lecce

Lecce, the capital of Salento, is both a city of history and art: its elegant, cosy historic centre showcases remnants from the Messapians to the Middle Ages, although it is particularly renowned for its baroque architecture (a Florence of the Baroque era) built in the characteristic soft local stone (pietra leccese) that dazzles in the sunshine.

However Lecce is also a capital of Italian cooking built on a local tradition of simple ingredients (“cucina povera”) and robust red wines (Negroamaro and Primitivo), and sports a buzzing bar scene. Century-old olive groves stretch over the countryside, whereas a short distance away are wild beaches with a clear azure sea famous for diving and picturesque rocky caves.

Living in Rome

The capital city, Rome, is bound to draw you in with its architectural elegance, art and musical culture. The Eternal City offers an exceptional artistic and historical heritage. Besides, the city is also full of museums, art galleries palaces, villas and fountains made by master architects such as Bernini and Borromini, with their Baroque style. The numerous fascinating places to visit and the Vatican as well, will fully envelop you.

Moving around the city of Rome, is easy either by public transport or by bike sharing service (oBike) or car sharing services available around the city. Rome’s influence is also seen in the luxury and glamorous world-renowned fashion houses. Socialising activities can be easily carried out at all times of the day, including the evenings.