



LENS - University of Florence



Postdoctoral Researcher - Single Molecule Manipulation and imaging

The Single Molecule Biophysics group at LENS (European Laboratory for Non-linear Spectroscopy), University of Florence, Italy, is seeking a highly motivated and independent postdoctoral scientist with proven academic track record and interest in interdisciplinary biophysics research.

The Single Molecule Biophysics group develops novel single molecule manipulation and imaging tools to address outstanding biological questions. Research topics include the influence of force on biological processes, gene expression regulation, and molecular mechanisms of motor proteins functioning (Capitanio *et al.*, Nature Methods 9, 1013–1019, 2012; Capitanio *et al.*, PNAS 103, 87-92, 2006).

Applications from scientists with a predominantly physics background and research experience in optics, microscopy, and related disciplines will be considered. Previous experience in development of optical setups and/or single-molecule techniques will be advantageous.

The successful candidate will work on the development of techniques for the manipulation (optical tweezers and magnetic tweezers) and imaging (fluorescence microscopy) of single biological molecules. We aim at further developing an *in vitro* optical tweezers technique that we recently published (Capitanio *et al.*, Nature Methods 9, 1013–1019, 2012). This will be applied to study motor proteins involved in intracellular transport and extended to study molecular mechanisms underlying mechanotransduction. Mechanotransduction, i.e. the conversion of mechanical forces into biochemical and biomolecular signals, is at the basis of many biological processes fundamental for the development and differentiation of cells, for their correct function and for the development of pathologies. The appointed candidate will also work on combining advanced single molecule manipulation and imaging techniques for the study of mechanically-induced regulation of gene expression in living eukaryotic cells. The project is funded under the highly selective Italian funding scheme "Futuro in Ricerca" (Future in Research) and by Ente Cassa di Risparmio di Firenze.

Informal enquiries and applications can be submitted to Dr. Marco Capitanio (capitan@lens.unifi.it)

Interested applicants should submit:

- a short cover letter setting out your reasons for applying for the post and highlighting the particular skill and experience which you feel you would bring to the role.
- a CV, which should include research experience, publications, and names of referees.

Selected applicants will be contacted for an interview. References will only be requested for candidates shortlisted for interview.

Deadline for application is August 23rd 2015.