



SAPIENZA  
UNIVERSITÀ DI ROMA



## ERC project HyGate – Call For Interest for Postdoctoral Researchers

I am seeking for three highly motivated Postdoctoral Researchers for conducting theoretical and simulation work on gating of ion channels within the framework of the ERC project “HyGate – Hydrophobic Gating in nanochannels: understanding single channel mechanisms for designing better nanoscale sensors”. The positions are available at Sapienza University of Rome – Italy.

The positions are initially available for 1 year and are renewable up to 5 years, **starting February 2019**. Competitive salary will be offered, commensurate with the experience of the candidate.

Motivated candidates, holding a PhD (EU or Extra EU) in the fields mentioned below, are invited to express their interest as soon as possible to the principal investigator via email [alberto.giacomello@uniroma1.it](mailto:alberto.giacomello@uniroma1.it) Brief description of the specific profiles below.

**Position1:** A PostDoc with background in biophysics, preferably focused on atomistic simulations of ion channels. The successful candidate will be in charge of studying via molecular dynamics the gating mechanism(s) of selected ion channels of biomedical relevance.

**Position2:** A PostDoc with background in statistical mechanics, possibly with specific knowledge of rare event simulations. The successful candidate will be in charge of studying via molecular dynamics and continuum models the gating mechanism(s) of simplified physical models of nanochannels and characterizing their response to different physical triggers.

**Position3:** A PostDoc with background in engineering or nano(bio)technology, capable of developing models for the electrical response of single nanochannels and cells. The successful candidate will creatively combine these models to devise nanofluidic circuits, smart membranes, and nanosensors.

### The Research Institution – Sapienza

Founded in 1303, the University of Rome “La Sapienza” is one of the largest European universities; its name means “Wisdom”. The world’s leading university rankings place Sapienza at the top of Italian universities for quality of research, education and international dimension; moreover, Sapienza excels in many subject areas, including Physics, Mechanical and Aerospace Engineering.

### The Research Project – HyGate

HyGate aims at understanding the fundamental mechanisms of hydrophobic gating in model nanopores and biological ion channels and exploit this knowledge in order to design a new generation of biosensors. An innovative set of rare event simulation tools will be developed and used in order to bridge the molecular timescales and the biological ones. The physical insights into the behavior of water in complex nanoconfined environments are expected to inspire innovative strategies for nanopore sensing and nanofluidic circuits. A multidisciplinary team, across physics, biology, and engineering will work together to achieve these ambitious goals.