

## Expression of Interest



### Contact Person/Scientist in Charge

- **Name and surname:** Vicente M. Aguilera
- **Email:** aguilera@uji.es

### Universitat Jaume I de Castellón (UJI)

### Department / Institute / Centre

- **Name:** Laboratory of Molecular Biophysics (Physics Department) / Universitat Jaume I de Castellón (UJI)
- **Address:** Vicent Sos Baynat, s/n 12006
- **Province:** Castellón

### Research Area

- Life Sciences (LIF)
- Physics (PHY)

### Brief description of the institution:

Universitat Jaume I de Castellón (UJI), is the public university in the north of the Valencian Community, created on 1991. It has obtained the 500+ Golden Seal of European Excellence by the Excellence in Management Club.

The UJI offers 31 undergraduate degrees, 19 postgraduate studies, 43 official postgraduate master's degrees, 15 UJI-specific master's degrees and has 14,000 students. It counts on about 1000 researchers distributed in 27 university departments and 12 research institutes.

The UJI is the third University and fifth entity of the Valencian Community, including companies and other research institutes, which have obtained more money from the European Research and Innovation Framework Programmes. Currently it is involved in 26 ongoing European research actions, including several European programmes (such as H2020, FP7, Interreg, SUDOE, LIFE, etc.).

The UJI offers modern research facilities among which stand out the different scientific structures that support research, such as the Central Scientific Instrumentation Service, the Animal Experimentation

Service (SEA) or its prestigious Library.

A specific program for newcomers helps researchers with the administrative procedures in order to become familiar with the facilities and standard practices, as well as an accurate integration. Moreover researchers can access additional services such as Sports Service, The University Residence, the Language Learning Centre (CAL) that offers an annual program of languages for foreigner researchers and the health centre available to the University community.

**Brief description of the Centre/Research Group (including URL if applicable):**

The Laboratory of Molecular Biophysics ([www.gm.uji.es](http://www.gm.uji.es)) belongs to the Physics Department in Universitat Jaume I (UJI).

The Laboratory of Molecular Biophysics is a multidisciplinary laboratory leaded by Prof. Vicente M. Aguilera. The different research lines developed in the laboratory focus on the study of electrolyte transport through ion channels, combining electrophysiological experiments with continuum models and molecular dynamics simulations:

- Study of the transport properties of bacterial porins such as the OmpF channel from *E. coli* to link the channel structure with its function. Electrophysiology (temperature-dependent experiments, experiments with mutants, fluctuation analysis) is combined with different theoretical analysis (statistical physics models, thermodynamic analysis), numerical models (such as Poisson Nernst-Planck models) and Molecular Dynamics simulations.
- Characterization of the channel activity (IC) of proteins from different viruses (Severe Acute Respiratory Syndrome (SARS) Coronavirus (CoV), Infectious Bronchitis Virus, Medium East Respiratory Syndrome (MERS) CoV) linking its IC with the virus virulence.
- Design or switchable rectifying devices based on bio-channels for different nano-technological applications such as current rectification and ion pumping.

**Project description:**

Details of the project within the fields above described should be discussed between the candidate interested in our research and the PI of the group.

**Applications**

Please, submit the next documentation:

- CV

- Two reference letters

**Deadline: 30/06/2016**