

POST-DOCTORAL POSITION

Novel devices based on complex oxides for neuromorphic computing

Starting date (tentative): October 2023

Duration: 22 months (with the possibility of extension)

Location: Physics of Complex Materials Group ([GFMC](#)), Universidad Complutense de Madrid, Madrid, Spain.

Job description

The selected candidate will conduct scientific and research work in the field of neuromorphic computing with novel devices based on complex oxides. She/he will work in the development and high-frequency electrical characterization (at low temperature) of new devices intended to reproduce neuron and synaptic functionality leveraging the metal-insulator transition and the associated magnetic phase transition exhibited by certain oxide materials. She/he will investigate the enhancement of the electrical functionalities of the devices by acting on the magnetic (spin) degree of freedom.

The work will include high-frequency electrical characterization at low temperature, device fabrication (lithography, design of lithography masks, materials etching, etc), implementation of the experimental set-up and development of the required programs to perform the electrical measurements.

Job profile and experimental skills

We are looking for applicants with experience in:

- High-frequency electrical characterization techniques.
- Low temperature measurements.
- Magneto-transport.
- Micro/nano-fabrication techniques (optical and e-beam lithography, ion milling, etc).
- Labview programming.

Applicants with experience in oxide electronics and/or neuromorphic computing are particularly suitable for the position. The ability to conduct successful research and development activity on targeted topics is essential.

Other valuable experimental skills

- Design of lithography masks.
- Materials deposition and sample preparation.
- Experience with Matlab and/or Python.
- Knowledge of artificial neural networks and machine learning methods. Development of algorithms.

How to apply

Applicants should apply by sending a CV to Dr. Miguel Romera: miromera@ucm.es

In an application, the candidate should describe her/his experience.

Applicants are encouraged to apply as soon as possible.

Please note that only shortlisted candidates will be contacted.

Do not hesitate to contact us for further inquiries.