BANDO 331.3 CNR-SPIN Institute
NAPOLI, ITALY

Researcher position in experimental condensed quantum matter physics

Two-dimensional (2D) systems, characterized by radically new properties and functionalities, are emerging as the material choice for the next stage of Spintronics and Quantum Electronics revolution. Among 2D-systems, 2D electron gases (2DEGs) formed at the interface between insulating transition metal oxides, like LaAlO3 and SrTiO3, are characterized by a unique combination of high-mobility, strong spin-orbit coupling (SOC), superconductivity (SC), interfacial 2D-magnetism, and theoretically predicted topological states.

Within the Pathfinder European project IQARO ("Quantum bits in reconfigurable 2D oxides"), we are looking for motivated candidates for a researcher position of 1+1 year, in the field of low temperature quantum phenomena and devices based on 2D oxide interfaces.

The successful candidate will carry out an experimental research activity on quantum phenomena in novel two-dimensional materials. The main focus will be realization and study, by ultra-low-temperature measurements, of single and double quantum dots based on oxide 2DEGs.

The experimental activity will benefit from the availability of the advanced Modular Facility for Oxide Deposition and Analysis (MODA) and of the new Quantum lab, equipped with state of art cryo-free magneto-transport and dilution refrigerator setups, at the CNR-SPIN Institute located at the Department of Physics of the University "Federico II" of Naples, Italy.

Candidates are expected to have completed a PhD in Physics, Engineering or related disciplines, and/or to possess at least three years' experience and scientific production in experimental condensed matter physics, with experience in epitaxial thin film growth, device fabrication, and low-temperature electrical measurements.

The link for the presentation of the application is:

https://selezionionline.cnr.it/jconon/search-call?filters-codice=331.3+RIC+SPIN

deadline for application: 26th June 2025

The applicants can contact Dr. Marco Salluzzo for further details and instructions

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