

**FIRST PRINCIPLES SIMULATIONS AND MODELING  
(SIMULACIONES NUMERICAS Y MODELIZACION EN FISICA DE LA MATERIA  
CONDENSADA)**

**Offer of PhD projects (9):**

Thesis project: Teoría y simulación de transporte cuántico en nuevos cristales bidimensionales.

Supervisor: Juan José Palacios ([juanjose.palacios@uam.es](mailto:juanjose.palacios@uam.es))

Thesis project: *Assesment and optimization of exchange-correlation functionals.*

Supervisor: José María Soler ([jose.soler@uam.es](mailto:jose.soler@uam.es))

Thesis project: *First-principles simulations of biomolecules.*

Supervisor: José Ortega Mateo ([jose.ortega@uam.es](mailto:jose.ortega@uam.es))

Thesis project: *Nano-magnet networks on graphene-based materials.*

Supervisor: Fernando Martín ([fernando.martin@uam.es](mailto:fernando.martin@uam.es))

Thesis project: *Superconductivity and charge order in quantum materials: Theory and Simulation.*

Supervisor: José Vicente Alvarez ([jv.alvarez@uam.es](mailto:jv.alvarez@uam.es))

Thesis project: *New Quantum States in Engineered Nanomaterials.*

Supervisor: Alfredo Levy Yeyati ([a.l.yeyati@uam.es](mailto:a.l.yeyati@uam.es))

Thesis project: *Descripción teórica de la transferencia radiativa de calor en nanoestructuras.*

Supervisor: Juan Carlos Cuevas ([juancarlos.cuevas@uam.es](mailto:juancarlos.cuevas@uam.es))

Thesis project: *Novel phases in strongly correlated materials with strong spin orbit coupling.*

Supervisor: Jaime Merino ([jaime.merino@uam.es](mailto:jaime.merino@uam.es))

Thesis project: *Solar energy harvesting and storage through hydrogen production in TiO<sub>2</sub> and CeO<sub>2</sub> with combined AFM/STM.*

Supervisors: Rubén Pérez ([ruben.perez@uam.es](mailto:ruben.perez@uam.es)) and Pablo Pou ([pablo.pou@uam.es](mailto:pablo.pou@uam.es))