

Propuestas TFM NANOMAT
curso 2026-2027

Nº	Título	Supervisor 1	Supervisor 2	Ponente
01	Engineering Polymer-Free Monolayer Graphene SERS Platforms	María Pilar Pina Iritia	Raúl Arenal	
02	Fabrication and STM characterization of ultrathin 2D nanostructures for quantum technologies	David Serrate Donoso	Jorge Lobo Checa	
03	Mixed Oxide Subnanoclusters for Stable Oxygen Reduction Catalysis	Julen Munarriz Tabuenca	Rubén Laplaza Solanas	
04	Strain-Mediated Electric-Field Control of Magnetism in 3D Nanocomposites	Cristina Bran	José Ángel Pardo	
05	Deposition and Advanced Characterization of CPGO Thin Films for Electrochemical Energy Applications	Mónica Burriel López	José Ángel Pardo Gracia	
06	Fast Machine-Learning-Driven Nanomaterial Calculations	Jesús Carrete Montaña		
07	Synthesis and characterization of ferroelectric nanocomposites for solid-state caloric cooling applications	Sara Lafuerza Bielsa	Vera Cuartero Yagüe	
08	Actuators for spin-photon optimization in superconducting circuits	María José Martínez Pérez	Javier Sesé Monclús	Irene Lucas del Pozo
09	Growth and characterization of candidate altermagnet RuO ₂ thin films	Irene Lucas del Pozo	Pilar Jiménez Caveró	
10	Thermally Driven Spin Transport in Ferrimagnetic/Superconductor Heterostructures	Luis Morellón Alquézar	Pilar Jiménez Caveró	
11	BiOI Photoelectrodes for Dye-Sensitized Solar Cells (DSSCs): Understanding Thickness Effects and Dye-Semiconductor Interfacial Interactions	M. Belén Villacampa Naverac		
12	Laser floating zone growth of rare-earth-hafnia-based ferroelectric crystals	Daniel Sola Martínez	José Ángel Pardo Gracia	
13	Fabrication of perovskite solar cells containing tailored liquid crystals	Raquel Giménez	Emilio Juárez-Pérez	
14	Optimization of antibacterial PLGA nanoparticles for scaffold integration	Laura Usón		Manuel Arruebo
15	Green processing for environmentally friendly, efficient, and low-cost perovskite solar cell technology.	María Cristina Momblona Rincón	María Bernechea Navarro	
16	Study of the Cathode–Electrolyte Interface in Sodium-Ion Batteries	María Bernechea	M. Pilar Lobera	

17	Barocaloric effect in spin-crossover compounds: from the nanoscale to the bulk	Vera Cuartero Yagüe	Marco Evangelisti	
18	Self-Assembled Metal-Free Dyes on Nanostructured TiO ₂ for Photoelectrochemical Energy Conversion	Alejandro Ansón Casaos	M ^a Jesús Blesa Moreno	
19	Green electrosynthesis of Bi nanostructures for catalysis in deep eutectic solvents	Alejandro Leal Duaso		
20	Stimuli-responsive amphiphilic block copolymers: tailoring polymeric nanocarriers for drug delivery	Luis Oriol Langa	Miriam Abad Andrés	
21	Ionic liquid emulsions as microreactors for sustainable catalytic processes	Alberto Concellón Allueva	Alejandro Leal-Duaso	
22	Dynamic Control of Chirality and Luminescence of Bent-Core Molecular-based Helical Nanofilaments Using Stimuli-Responsive Dopants	M. Blanca Ros	Alberto Concellón	
24	Modified nickel oxide electrodes for solar energy utilization	Cristina Momblona Rincón	Alba Salvador Porroche	
25	Physics-Informed Machine Learning in Materials Science: a framework for optimization and inverse design	Sergio Gutiérrez Rodrigo		
26	Nanofabrication and magneto-optical study of curved three-dimensional magnetic nanostructures	Alberto Anadón Barcelona	Cristina Bran	
27	Growth of nanotips for Atomic Force Microscopy by FEBID and evaporation	José María De Teresa Nogueras	Soraya Sangiao Barral	
28	Development of Intelligent Thermosensitive Hydrogels for Sustained Release of Therapeutic Compounds	Nayrim Brizuela Guerra		Manuel Arruebo Gordo