LOYOLA Doctorados

Line of research Materials and Sustainability (M&S)

Mauricio Zurita Gotor

- Hydrodynamics of complex fluids in confined spaces
- Microstructural effects on the utilization of nanofluids in trigeneration cycles.
- Optimization of electrolyzer technologies for green hydrogen production.
- Process intensification of biomass degradation through rational enzyme design under considerations of transport and accessibility.

Carlos Ortiz Domínguez

- PV-driven CO2 capture for cleaner power production.
- Scaling-up of e-methanol production pathways

Juan Carlos Serrano Ruiz

- Thermocatalytic recomposición of biogas into hydrogen over heteroatom-doped carbon materials

José Luis Endrino Armenteros

- Dark engineering: the role of PVD in highly stressed mechanical systems

Francisco de Paula Montero Chacón

- Durability study of double graphite batteries using computational methods
- Design of new solid electrolyte batteries
- Design of new materials for thermal energy storage using simulation techniques
- Design of materials and components for H2 storage
- Development of multiphysics-multiscale simulation platforms for the design of materials and components in sustainable applications

José Javier Brey Sánchez

- Development of an optimized control algorithm for hydrogen fuel cell systems
- Optimization of a low-temperature electrolyzer for green hydrogen production
- Modelling and validation of a high-temperature electrolysis-based green hydrogen production system