

**DEPARTAMENTO DE CIENCIA E**  
**INGENIERIA DE MATERIALES E**  
**INGENIERIA QUIMICA**

## **DEPARTAMENTO DE CIENCIA E INGENIERIA DE MATERIALES E INGENIERIA QUIMICA**

### **Actividades de investigación**

#### **Tesis Doctorales**

- Effect of microstructure on mechanical properties of ni -based superalloys  
*Autores:* RAHIMIAN, M.  
*Director/Codirectores:* ILCHAT, S.; MILENKOVIC, S.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015
- Electrolytes polymères à base de liquides ioniques pour batteries au lithium  
*Autores:* PRIEW, E.  
*Director/Codirectores:* SANCHEZ, J.Y.; CRISTINA, I.  
*Universidad:* UNIVERSIDAD GRENOBLE ALPES  
*Año:* 2015
- Estudio de termofluencia en plomo-bismuto líquido de aceros ferrítico-martensíticos mediante el uso de probetas miniatura.  
*Autores:* HERNÁNDEZ, R.  
*Director/Codirectores:* CAMPOS, M.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015
- Mechanical Properties of Advanced High-Strength Steels produced Via Quenching and Partitioning  
*Autores:* DE DIEGO, M.I.  
*Director/Codirectores:* MOLINA, J.M.; ILCHAT, S.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2015
- Nanomateriales de carbono, síntesis, funcionalización y aplicaciones.  
*Autores:* GONZALEZ, V.J.  
*Director/Codirectores:* BASELGA, J. ; MARTIN, O.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015

- Nouvelles générations d'électrolyte pour batterie lithium polymère  
*Autores:* AMADOU, T.  
*Director/Codirectores:* SANCHEZ, J.Y.; JEAN-CLAUDE, L.; CRISTINA, I.  
*Universidad:* UNIVERSIDAD GRENOBLE ALPES  
*Año:* 2015
  
- Nouvelles membranes à squelette haute performance pour les piles à combustible PEMFC  
*Autores:* OLESIA, D.  
*Director/Codirectores:* SANCHEZ, J.Y.; CRISTINA, I.  
*Universidad:* UNIVERSIDAD GRENOBLE ALPES  
*Año:* 2015
  
- Nuevas formulaciones de materiales híbridos basados en epoxi y poliaminosiloxanos modificados con acrilonitrilo.  
*Autores:* LOAYZA, A.  
*Director/Codirectores:* BASELGA, J. ; CABANELAS, J. C.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015
  
- Nuevos materiales nanocompuestos con propiedades eléctricas especiales y desarrollo de nuevos métodos de caracterización nano-piezodeformación y nano-termodeformación  
*Autores:* SANCHEZ, F.A.  
*Director/Codirectores:* GONZÁLEZ-BENITO, J.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015
  
- Processing and characterization of novel biodegradable and bioresorbable PLA/Mg composites for osteosynthesis.  
*Autores:* CIFUENTES, S.C.  
*Director/Codirectores:* GORDO, E.; GONZÁLEZ, J.L.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015
  
- Propiedades y comportamiento mecánico de nanocomposites de polisulfona - Alúmina biocompatible  
*Autores:* ANAYA, S.  
*Director/Codirectores:* BASELGA, J. ; SERRANO, B.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015
  
- Síntesis y caracterización de membranas protónicas híbridas para su aplicación en pilas de combustible poliméricas.  
*Autores:* MARTOS, A.M.  
*Director/Codirectores:* VAREZ, A.; LEVENFELD, B.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2015

## **Publicaciones y actividades de difusión de resultados**

### **Publicaciones en revistas científicas nacionales**

- ABAJO, C.; JIMENEZ, A.; TORRALBA, J.M.  
New processing route for ZrSiO<sub>4</sub> by powder injection moulding using an eco-friendly binder system, *Boletín de la Sociedad Española de Cerámica y Vidrio*, Vol. 54, Núm. 3, 2015, pp. 93-100, ESPAÑA.

### **Publicaciones en revistas científicas internacionales**

- ABENOJAR, J. ; PANTOJA, M.; MARTINEZ, M.A.; DEL REAL, J.C.  
Aging by moisture and/or temperature of epoxy/SiC composites: Thermal and mechanical properties, *Journal of composite materials*, Vol. 49, Núm. 24, 2015, pp. 2963-2975, ESTADOS UNIDOS DE AMERICA.
- AGZENAI, Y.; POZUELO DE, J.; SANZ, J. ; PÉREZ, I.; BASELGA, J.  
Advanced Self-Healing Asphalt Composites in the Pavement Performance Field: Mechanisms at the Nano Level and New Repairing Methodologies, *Recent patents on nanotechnology*, Vol. 9, Núm. 1, 2015, pp. 43-50, EMIRATOS ARABES UNIDOS.
- ANTONELLI, C.; SERRANO, B. ; BASELGA, J. ; OZISIK, R.; CABANELAS, J. C.  
Interfacial characterization of epoxy/silica nanocomposites measured by fluorescence, *European Polymer Journal*, Vol. 62, 2015, pp. 31-42, REINO UNIDO.
- BARBERO, J.F.; JUÁREZ, B.A.; MARGALEF, J.; VILLASEÑOR, E. J. S.  
Quantization of scalar fields coupled to point masses, *Classical and quantum gravity*, Vol. 32, Núm. 24, 2015, pp. 245009-, REINO UNIDO.
- BARBERO, J.F.; PRIETO, J.; VILLASEÑOR, E. J. S.  
Gauge invariance in simple mechanical systems, *European Journal of Physics*, Vol. 36, Núm. 5, 2015, REINO UNIDO.
- BARBOSA, A.Q.; DA SILVA, L.F.M.; ABENOJAR, J. ; REAL, J.C.D.; PAIVA, R.M.M.; OCHSNER, A.  
Kinetic analysis and characterization of an epoxy/cork adhesive, *Thermochimica acta*, Vol. 604, 2015, pp. 52-60, PAISES BAJOS.
- BARCELO, C.; CARBALLO, R.; GARAY, L.; JANNES, G.  
The lifetime problem of evaporating black holes: mutiny or resignation, *Classical and quantum gravity*, Vol. 32, Núm. 3, 2015, REINO UNIDO.
- BAUTISTA, M. A. ; ALVAREZ, S.M.; PAREDES, E.C.; VELASCO, F.J.; GUZMAN, S.  
Corrugated stainless steels embedded in carbonated mortars with and without chlorides: 9-year corrosion results, *Construction and Building Materials*, Vol. 95, 2015, pp. 186-196, HOLANDA - PAISES BAJOS.

- BAUTISTA, M. A. ; ALVAREZ, S.M.; VELASCO, F.J.  
Selective corrosion of duplex stainless steel bars in acid. Part 2: Effect of the surface strain and numerical analysis, *Materials and corrosion*, Vol. 66, Núm. 4, 2015, pp. 357-365, ALEMANIA.
  
- BAUTISTA, M. A. ; ALVAREZ, S.M.; VELASCO, F.J.  
Selective corrosion of duplex stainless steel bars in acid Part 1: Effect of the composition, microstructure and anodic polarizations, *Materials and corrosion*, Vol. 66, Núm. 4, 2015, pp. 347-356, ALEMANIA.
  
- BAUTISTA, M. A. ; PAREDES, E.C.; VELASCO, F.J.; ALVAREZ, S.M.  
Corrugated stainless steels embedded in mortar for 9 years: corrosion results of non-carbonated, chloride-contaminated samples, *Construction and Building Materials*, Vol. 93, 2015, pp. 350-359, HOLANDA - PAISES BAJOS.
  
- BOLLOLI, M.; KALHOFF, J.; ALLOIN, F.; BRESSER, D.; LE, M.L.P.; LANGLOIS, B.; PASSERINI, S.; SANCHEZ, J.Y.  
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- BOLZONI, L.; E.M. RUIZ-NAVAS; GORDO, E.  
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- CASTRILLO, P.D.; OLMOS, D. ; GONZÁLEZ-BENITO, J.  
Kinetic study of the intercalation process of dimethylsulfoxide in kaolinite, *International journal of mineral processing*, Vol. 144, 2015, pp. 70-74, PAISES BAJOS.
  
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Mechanical characterization and fractographic study of epoxy-kaolin polymer nanocomposites, *Composite Structures*, Vol. 133, 2015, pp. 70-76, HOLANDA - PAISES BAJOS.
  
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Effect of heat treatment of magnesium alloy substrates on corrosion resistance of a hybrid organic-inorganic sol-gel film, *RSC advances* , Vol. 5, Núm. 128, 2015, pp. 105735-105746, REINO UNIDO.
  
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## Colaboraciones en obras colectivas

- FELIU, S.J.; EL HADAD, A.A.; BARRANCO, V.; LLORENTE, I.; GARCIA, F.R.; JIMENEZ, A.; GALVAN SIERRA, J.C.  
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## Ponencias y Comunicaciones a congresos

- ABAJO, C.  
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*Estudio de la intercara en materiales compuestos tipo cermet para el diseño de matrices metálicas alternativas*; en: MATCOMP 15, Materiales compuestos 15: Actas del XI Congreso Nacional de Materiales Compuestos: Móstoles (Madrid), 6, 7 y 8 de julio de 2015, Universidad Rey Juan Carlos (URJC), , 2015.
  
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## **Actividades de formación y movilidad de personal investigador**

### **Estancias en otros centros**

- ALICIA PAEZ PAVON  
*Título:* Estancia pre-doctoral en HES-SO Valais Wallis (Suiza)  
*Centro Externo:* Hes-SO Valais Wallis (Suiza)  
*País:* SUIZA  
*Duración:* 08/01/2015 a 08/03/2015.
  
- AMAYA GARCIA CASAS  
*Título:* Estudio electroquímico-bioactividad en materiales base titanio con recubrimiento sol-gel  
*Supervisor:* Prof. Digby D. Macdonald Estancia pre-doctoral  
*Centro Externo:* Universidad de California. Department of Materials Science and Engineering  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 20/09/2015 a 22/12/2015.
  
- BEATRIZ VELASCO NUÑEZ  
*Título:* Caracterización de propiedades físicas y funcionales de espumas de fases MAX Estancia pre-doctoral  
*Supervisor:* Thomas Welbgärber  
*Centro Externo:* Fraunhofer IFAM  
*País:* ALEMANIA  
*Duración:* 01/10/2015 a 07/12/2015.
  
- FRANCISCO JAVIER GONZALEZ BENITO  
*Título:* Single Cell Force Spectroscopy for Adhesive Interactions of Cells and Thermoplastic Nanocomposites  
*Centro Externo:* National Institute of Standards and Technology  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/07/2015 a 01/09/2015.

- **GLEIDYS MONRRABAL MARQUEZ**  
*Título:* Estancia de investigación  
*Centro Externo:* UNIVERSITY OF BIRMINGHAM. THE CENTRE FOR FORMULATION ENGINEERING SCHOOL OF CHEMICAL ENGINEERING  
*País:* REINO UNIDO  
*Duración:* 26/10/2015 a 04/12/2015.
  
- **JANIRE PEÑA BAHAMONDE**  
*Título:* Estudio de la biocompatibilidad de nanocomposites.Supervisor: Debora F. Rodrigues  
*Centro Externo:* Universidad de Houston  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/01/2015 a 31/03/2015.
  
- **JESUS SALAS MARTINEZ**  
*Título:* Estancia de dos semanas en el Laboratoire de Physique Théorique, École Normale Supérieure  
*Centro Externo:* Université Pierre et Marie Curie  
*País:* FRANCIA  
*Duración:* 01/11/2015 a 15/11/2015.
  
- **JULIA MARIA UREÑA ALCAZAR**  
*Título:* Estudio de tribocorrosión y caracterización de aleaciones de titanio pulvimetalúrgicas Estancia pre-doctoral Supervisor: Fatih Toptan  
*Centro Externo:* University of Minho. Mechanical & Materials Technologies Centre (CT2M)  
*País:* PORTUGAL  
*Duración:* 07/10/2015 a 07/12/2015.
  
- **LUIS FRANCISCO LOPEZ BONILLA**  
*Título:* Visita de investigación financiada por proyecto europeo NILS Science and Sustainability 003-ABEL-IM-2013 para colaborar con el Prof. Bjorn Birnir  
*Centro Externo:* University of Iceland.  
*País:* ISLANDIA  
*Duración:* 01/07/2015 a 31/07/2015.
  
- **LUIS FRANCISCO LOPEZ BONILLA**  
*Título:* Visita al Departamento de Matemáticas "Federico Enriques" de la Università Degli Studi Di Milano, para colaborar con investigadores de dicho Departamento (Alessandra Micheletti, Daniela Morale) en proyectos de investigación relacionados con el proyecto IFS2011-28838-C02-01  
*Centro Externo:* Università Degli Studi Di Milano. Departamento de Matemáticas "Federico Enriques"  
*País:* ITALIA  
*Duración:* 09/12/2015 a 11/12/2015.
  
- **MIGUEL ANGEL MOSCOSO CASTRO**  
*Título:* Estancia en el Departamento de Matemáticas de la Universidad de Stanford  
*Centro Externo:* UNIVERSIDAD DE STANFORD  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/07/2015 a 31/08/2015.
  
- **MIGUEL DE DIOS PEREZ**  
*Título:* Estancia predoctoral para el desarrollo de técnicas bottom-up en el diseño ad-hoc de partículas cerámicas tipo core-shell Supervisor: Dr. Ulrich Wiesner  
*Centro Externo:* CORNELL UNIVERSITY. MATERIALS SCIENCE DEPARTMENT  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 26/05/2015 a 14/08/2015.

- **MIGUEL RUIZ GARCIA**  
*Título:* Estancia de investigación predoctoral en la University of Iceland. Advisor: Prof. Bjorn Birnir  
*Centro Externo:* University of Iceland.  
*País:* ISLANDIA  
*Duración:* 01/07/2015 a 31/07/2015.
  
- **MIGUEL RUIZ GARCIA**  
*Título:* Estancia de investigación predoctoral en la University of California, Santa Bárbara. Advisor: Prof. Bjorn Birnir  
*Centro Externo:* University of California  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/09/2015 a 31/12/2015.
  
- **MIGUEL RUIZ GARCIA**  
*Título:* Estancia de investigación predoctoral en École Normale Supérieure Advisor: Prof. Pierre Le Doussal  
*Centro Externo:* École Normale Supérieure  
*País:* FRANCIA  
*Duración:* 01/06/2015 a 31/07/2015.