

## Física Aplicada

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**Áreas de conocimiento:** Física Aplicada

**Director:** Jorge Andrés Portí Durán

**Secretaria:** María Tirado Miranda

**Página web:** <http://fisicaaplicada.ugr.es/>

**Profesorado:** 22 CU, 1 PE, 19 PTU, 3 PCD, 2 PAyD, 20 Investigadores Doctores (1 Ramón y Cajal, 3 Athenea 3i, 3 Marie Curie-MSCA, 3 Juan de la Cierva, 10 Doctores contratados), 17 Investigadores en formación y 4 Jóvenes Investigadores (sistema nacional de garantía juvenil).

### Tesis leídas:

- Evaluación del daño en estructuras de hormigón armado con disipadores histeréticos de energía.  
Doctorando: Chihab Abarkane.  
Director: Antolino Gallego Molina y Amadeo Benavent Climent (Universidad Politécnica de Madrid).  
Fecha de lectura: 24/10/2019.
- Atmospheric profiling based on aerosol and Doppler lidar.  
Doctorando: Pablo Ortiz Amezcua.  
Director: Lucas Alados Arboledas, Juan Luis Guerrero Rascado.  
Fecha de lectura: 25/10/2019.
- Non-linear Magnetorheology: multibody and multipole effects on the Yield Stress.  
Doctorando: José Rafael Morillas Medina.  
Director: Juan de Vicente Álvarez-Manzaneda.  
Fecha de lectura: 08/11/2019.
- Development and Evaluation of Smart Polymeric and Lipidic Nanoparticles for Theragnosis of Breast and Pancreatic Cancer.  
Doctorando: Saúl Abenhamar Navarro Marchal.  
Director: Juan Antonio Marchal Corrales, Rosario María Sánchez Martín y José Manuel Peula García.  
Fecha de lectura: 31/03/2020.
- Development of new biomimetic bioinks useful in 3d bioprinting of cartilage tissue.  
Doctorando: Cristina Antich Acedo.  
Directores: Francisco Galisteo González, Juan Antonio Marchal Corrales.  
Fecha de lectura: 12/03/2020.

### Grupos de Investigación.

- TEP232 ACÚSTICA Y DIAGNÓSTICO DE MATERIALES Y ESTRUCTURAS  
- Responsable: ANTOLINO GALLEGO MOLINA
- RNM286 CLIMATOLOGIA URBANA Y CAMBIO CLIMATICO  
- Responsable: JUAN IGNACIO JIMENEZ JIMENEZ
- FQM115 FISICA DE FLUIDOS Y BIOCOLOIDES  
- Responsable: MIGUEL ANGEL CABRERIZO VÍLCHEZ
- RNM119 FÍSICA DE LA ATMÓSFERA  
- Responsable: YOLANDA CASTRO DÍEZ
- FQM254 FISICA DE LA INFORMACION Y DE LOS SISTEMAS COMPLEJOS  
- Responsable: RAMON ROMAN ROLDAN
- TIC104 SISTEMAS, SEÑALES Y ONDAS  
- Responsable: M<sup>a</sup> DEL CARMEN CARRIÓN PÉREZ

### Publicaciones en revistas

- 2020 Artículo: Future Changes in Land and Atmospheric Variables: An Analysis in their Couplings in the Iberian Peninsula, Science of the Total Environment, 722, , 137902-  
MARÍA JESÚS ESTEBAN PARRA  
MATILDE GARCÍA-VALDECASAS OJEDA  
SONIA RAQUEL GÁMIZ FORTIS  
YOLANDA CASTRO DÍEZ
- 2019 Artículo: Precipitable water vapor over oceans from the Maritime Aerosol Network: Evaluation of global models and satellite products under clear sky conditions, Atmospheric Research, 215, , 294-304  
DANIEL PÉREZ RAMÍREZ  
HASSAN LYAMANI  
ROBERTO ROMAN DIEZ
- 2019 Artículo: Intra-articular treatment of osteoarthritis with diclofenac-conjugated polymer reduces inflammation and pain, Journal of controlled release, 2, 7, 2822-2832  
FELISA REYES ORTEGA
- 2019 Artículo: A SPECTROSCOPY ANALYSIS OF THE INTERACTION BETWEEN MEGA 10 AND CONCANAVALIN A, Journal of Molecular Liquids, 275, , 674-681

- AIXA MARÍA AGUILERA GARRIDO  
FRANCISCO GALISTEO GONZÁLEZ  
MARÍA JOSÉ GÁLVEZ RUIZ  
- 2019 Artículo: Electro-orientation of silver nanowires in alternating fields, *Langmuir*, 35, 3, 687-694  
ANGEL VICENTE DELGADO MORA  
MARIA LUISA JIMENEZ OLIVARES  
PALOMA ARENAS GUERRERO  
- 2019 Artículo: Wetting transitions on rough surfaces revealed with captive bubble experiments. The role of surface energy, *Journal of Colloid and Interface Science*, 539, , 448-456  
FRANCISCO JAVIER MONTES RUIZ-CABELLO  
MIGUEL ANGEL CABRERIZO VÍLCHEZ  
MIGUEL ANGEL RODRÍGUEZ VALVERDE  
- 2019 Artículo: Rheological properties of magnetic biogels, *Archive of Applied Mechanics*, 89, 1, 91-103  
JUAN DE DIOS GARCÍA LÓPEZ-DURÁN  
MODESTO TORCUATO LÓPEZ LÓPEZ  
- 2019 Artículo: Catalytic and Electron Conducting Carbon Nanotube-Reinforced Lysozyme Crystals, *Advanced Functional Materials*, 29, , 1807351-  
MODESTO TORCUATO LÓPEZ LÓPEZ  
- 2019 Artículo: Stored potential energy increases and elastic properties alterations are produced after restoring dentin with Zn-containing amalgams, *Journal of the Mechanical Behavior of Biomedical Materials*, 91, , 109-121  
MODESTO TORCUATO LÓPEZ LÓPEZ  
- 2019 Artículo: Diagnosis of hysteretic dampers used for seismic protection of structures by means ultrasonic measurements, *Measurement: Journal of the International Measurement Confederation*, 137, , 344-354  
ANTOLINO GALLEGO MOLINA  
CHIHAB ABARKANE  
FRANCISCO JOSÉ RESCALVO FERNÁNDEZ  
- 2019 Artículo: Protein-surface interactions at the nanoscale: Atomistic simulations with implicit solvent models, *Current Opinion in Colloid & Interface Science*, 41, , 40-40  
DELFINA BASTOS GONZÁLEZ  
- 2019 Artículo: Nonequilibrium Uptake Kinetics of Molecular Cargo into Hollow Hydrogels Tuned by Electrosteric Interactions, *ACS Nano*, XXXX, , -  
ARTURO MONCHO JORDÁ  
IRENE ADROHER BENÍTEZ  
- 2019 Artículo: Seasonal analysis of the atmosphere during five years by using microwave radiometry over a mid-latitude site, *Atmospheric Research*, 218, , 78-89  
ALBERTO CAZORLA CABRERA  
FRANCISCO JOSE OLMO REYES  
INMACULADA FOYO MORENO  
JUAN LUIS GUERRERO RASCADO  
LUCAS ALADOS ARBOLEDAS  
ROBERTO ROMAN DIEZ  
- 2019 Artículo: Analyzing the turbulent planetary boundary layer by remote sensing systems: the Doppler wind lidar, aerosol elastic lidar and microwave radiometer, *Atmospheric Chemistry and Physics*, 19, , 1263-1280  
FRANCISCO JOSE OLMO REYES  
JUAN LUIS GUERRERO RASCADO  
LUCAS ALADOS ARBOLEDAS  
ROBERTO ROMAN DIEZ  
- 2019 Artículo: Impact of primary NO<sub>2</sub> emissions at different urban sites exceeding the European NO<sub>2</sub> standard limit, *Science of the Total Environment*, 646, , 1117-1125  
FRANCISCO JOSE OLMO REYES  
HASSAN LYAMANI  
LUCAS ALADOS ARBOLEDAS  
- 2019 Artículo: Retrievals of aerosol single scattering albedo by multiwavelength lidar measurements: Evaluations with NASA Langley HSRL-2 during discover-AQ field campaigns, *Remote Sensing of Environment*, 222, , 144-164  
DANIEL PÉREZ RAMÍREZ  
- 2019 Artículo: Evaluation of night-time aerosols measurements and lunar irradiance models in the frame of the first multi-instrument nocturnal intercomparison campaign, *Atmospheric Environment*, 219, , 190-211  
DANIEL PÉREZ RAMÍREZ  
JOSE ANTONIO BENAVENT OLTRA  
LUCAS ALADOS ARBOLEDAS

ROBERTO ROMAN DIEZ

- 2019 Artículo: Magnetorheology of alginate ferrogels, *Smart Materials and Structures*, 28, , -

CRISTINA GILA VILCHEZ

JUAN DE DIOS GARCÍA LÓPEZ-DURÁN

MODESTO TORCUATO LÓPEZ LÓPEZ

- 2019 Artículo: Probing in-vitro digestion at oil-water interfaces, *Current Opinion in Colloid & Interface Science*, 39, , 51-60

JULIA MALDONADO VALDERRAMA

- 2019 Artículo: Maslinic acid conjugate with 7-amino-4-methylcoumarin as probe to monitor the temperature dependent conformational changes of human serum albumin by FRET, *Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy*, 214, , 161-169

FRANCISCO GALISTEO GONZÁLEZ

- 2019 Artículo: Anisotropic magnetic hydrogels: design, structure and mechanical properties, *Royal Society of London. Philosophical Transactions A. Mathematical, Physical and Engineering Sciences*, 377,

CRISTINA GILA VILCHEZ

JUAN DE DIOS GARCÍA LÓPEZ-DURÁN

MODESTO TORCUATO LÓPEZ LÓPEZ

- 2019 Artículo: Contribution to column-integrated aerosol typing based on Sun-photometry using different criteria, *Atmospheric Research*, 224, , 1-17

DANIEL PÉREZ RAMÍREZ

FRANCISCO JOSE OLMO REYES

HASSAN LYAMANI

INMACULADA FOYO MORENO

JUAN LUIS GUERRERO RASCADO

LUCAS ALADOS ARBOLEDAS

- 2019 Artículo: A comparison of ISO 2631-5:2004 and ISO 2631-5:2018 standards for whole-body vibrations exposure: A case study, *Studies in Systems, Decision and Control*, 202, , 711-719

DIEGO PABLO RUIZ PADILLO

- 2019 Artículo: Tropical Pacific sea surface temperature influence on seasonal streamflow variability in Ecuador, *International Journal of Climatology*, , , 1-20

MARÍA JESÚS ESTEBAN PARRA

MATILDE GARCÍA-VALDECASAS OJEDA

SONIA RAQUEL GÁMIZ FORTIS

YOLANDA CASTRO DÍEZ

- 2019 Artículo: Spatio-Temporal Analysis for Extreme Temperature Indices over Levant Region, *International Journal of Climatology*, JOC-18-0606R, , -

MARÍA JESÚS ESTEBAN PARRA

SONIA RAQUEL GÁMIZ FORTIS

YOLANDA CASTRO DÍEZ

- 2019 Artículo: Extending the pool of compatible peptide hydrogels for protein crystallization., *Crystals*, 9, , 244-

MODESTO TORCUATO LÓPEZ LÓPEZ

- 2019 Artículo: Water-Repellent Fluoropolymer-Based Coatings, *Coatings*, 9, 5, 293-

MIGUEL ANGEL CABRERIZO VÍLCHÉZ

MIGUEL ANGEL RODRÍGUEZ VALVERDE

- 2019 Artículo: Functionalized Biomimetic Magnetic Nanoparticles as Effective Nanocarriers for Targeted Chemotherapy, *Particle and Particle Systems Characterization*, , , 1900057-

ANGEL VICENTE DELGADO MORA

GUILLERMO RAMÓN IGLESIAS SALTO

- 2019 Artículo: Enhancement of Magnetic Hyperthermia by Mixing Synthetic Inorganic and Biomimetic Magnetic Nanoparticles, *Pharmaceutics*, , , -

ANGEL VICENTE DELGADO MORA

GUILLERMO RAMÓN IGLESIAS SALTO

- 2019 Artículo: CO<sub>2</sub> dynamics are strongly influenced by low frequency atmospheric pressure changes in semiarid grasslands, *Journal of Geophysical Research: Biogeosciences*, , 124, 902-917

ANDREW STEPHEN KOWALSKI

ENRIQUE PEREZ SANCHEZ-CAÑETE

- 2019 Artículo: Silver-loaded nanoparticles affect ex-vivo mechanical behavior and mineralization of dentin, *Medicina Oral, Patología Oral y Cirugía Bucal*, 24, 2, -

MODESTO TORCUATO LÓPEZ LÓPEZ

- 2019 Artículo: Impact of mineral dust on shortwave and longwave radiation: Evaluation of different vertically resolved parameterization in 1-D radiative transfer computations, *Atmospheric Chemistry and Physics*, 19, 1, 523-542

JOSE ANTONIO BENAVENT OLTRA  
LUCAS ALADOS ARBOLEDAS  
ROBERTO ROMAN DIEZ

#### Capítulos de libros (con ISBN)

- 2020 Titulo Capítulo: Understanding the drought phenomenon in the Iberian Peninsula, Titulo Libro: Drought - Detection and Solutions: IntechOpen, , 2020, 978-1-78984-781-9  
MARÍA JESÚS ESTEBAN PARRA  
SONIA RAQUEL GÁMIZ FORTIS  
MATILDE GARCÍA-VALDECASAS OJEDA  
YOLANDA CASTRO DÍEZ
- 2019 Titulo Capítulo: Caracterización del aerosol biológico de Sierra Nevada (Granada, España), Titulo Libro: Montañas. Fuentes de Vida y de Futuro: EDITORIAL UNIVERSIDAD DE GRANADA, Granada, 2019, 978-84-338-6510-6  
HASSAN LYAMANI  
LUCAS ALADOS ARBOLEDAS

#### Contribuciones en congresos

- 2019 Comunicación en congreso: La dispersión en estadística unidimensional: Análisis del lenguaje en libros de texto de bachillerato, III International Virtual Congress on Statistical Education, 20/02/2019, Granada, Congreso  
JOSÉ ANTONIO GARZÓN GUERRERO
- 2019 Poster en Congreso: Reflexionando sobre probabilidad y culturas, III International Virtual Congress on Statistical Education, 20/02/2019, Granada, Congreso  
JOSÉ ANTONIO GARZÓN GUERRERO
- 2019 Poster en Congreso: Preliminary in vitro evaluation of magnetite nanoparticles in colon cancer treatment, I Congreso de Investigadores del PTS, 13/02/2019, Facultad de Medicina UGR, Congreso  
GUILLERMO RAMÓN IGLESIAS SALTO
- 2019 Poster en Congreso: MAGNETOLIPOSOMES: BIOLOGICAL EVALUATION TO IMPROVE COLON CANCER THERAPY, I CONGRESO DE INVESTIGADORES DEL PTS, 13/02/2019, Granada, Congreso  
ANGEL VICENTE DELGADO MORA
- 2019 Comunicación en congreso: Catalytic and Electron Conducting Carbon Nanotube Reinforced Lysozyme Crystals, Sixth International Conference on Multifunctional, Hybrid and Nanomaterials, 11/03/2019, BARCELONA, SITGES, ESPAÑA, Congreso  
MODESTO TORCUATO LÓPEZ LÓPEZ
- 2019 Comunicación en congreso: Noise annoyance mapping in urban environments as an advanced tool for the design of effective noise mitigation actions, INTERNOISE 2019, 16/06/2019, MADRID, SPAIN, Congreso  
JERONIMO VIDA MANZANO
- 2019 Comunicación en congreso: Community response to environmental noise in Granada (Spain): an evaluation by means of a standardized social survey, INTERNOISE 2019, 16/06/2019, MADRID, SPAIN, Congreso  
JERONIMO VIDA MANZANO
- 2019 Comunicación en congreso: Soundscape approach for noise management of conflict urban areas. The PTS case in Granada (Spain) , INTERNOISE 2019, 16/06/2019, MADRID, SPAIN, Congreso  
JERONIMO VIDA MANZANO
- 2019 Comunicación en congreso: Improving Lateral Fraction Estimation by FIR filtering correction of room impulse responses, INTERNOISE 2019, 16/06/2019, MADRID, SPAIN, Congreso  
JERONIMO VIDA MANZANO
- 2019 Comunicación en congreso: Rising temperatures may enhance annual net carbon assimilation in a subalpine mediterranean ecosystem based on 13 years of eddy covariance measurements, EcoDesert International Symposium, 20/02/2019, Almería, Congreso  
ANDREW STEPHEN KOWALSKI  
ENRIQUE PEREZ SANCHEZ-CAÑETE
- 2019 Comunicación en congreso: Ventilation and its relevance at global scale, EcoDesert International Symposium, 20/02/2019, Almería, Congreso  
ANDREW STEPHEN KOWALSKI  
ENRIQUE PEREZ SANCHEZ-CAÑETE
- 2019 Comunicación en Jornada: Mejora del comportamiento terapéutico de agentes derivados del platino mediante nanopartículas magnéticas, XI Reunión de Jóvenes Farmacólogos de Andalucía, 31/05/2019, FACULTAD DE MEDICINA UNIVERSIDAD DE MALAGA, Jornada  
GUILLERMO RAMÓN IGLESIAS SALTO