

Fecha del CVA	28/06/2024
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Parte A. DATOS PERSONALES

Nombre			
Apellidos			
Sexo		Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)			

A.1. Situación profesional actual

Puesto	Profesora Titular de Universidad		
Fecha inicio	2021		
Organismo / Institución	Universidad de Oviedo		
Departamento / Centro	Construction and Manufacturing Engineering / Polytechnique School of Engineering		
País	España	Teléfono	
Palabras clave	Resultados numericos y experimentales; Eficiencia y ahorro energético; Tecnicas de construccion; Materiales de construccion; Hormigón; Desarrollo sostenible		

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Diseño, Construcción y Fabricación en la Ingeniería Mecánica	Universidad de Oviedo	2013

Parte B. RESUMEN DEL CV

Associate professor at the Construction Area at the University of Oviedo. Main teaching activity at the Polytechnic School of Engineering in Gijón. Currently, holding administrative role as Coordinator of Máster Universitario en Ingeniería Industrial, a 2-year master with about 30 students per level and more than 40 practical training in companies. 3 three-year terms teaching recognised, 2 six-year term research recognition by the Spanish Agency for Quality Assessment and Accreditation (ANECA). Fixed position at University of Oviedo since November 2021. Assistant professor from October 2016 to July 2021, and two previous years from 2014 to 2016 as partial-time professor at Universidad de Oviedo. During this partial time contract, simultaneously postdoctoral researcher at Universidad de Cantabria. h-index of 10 in Scopus. Graduated as PhD in Engineering at the University of Oviedo.

25 research papers published in JCR journals since 2011 (20 in Q1 JCR). 5 research papers published in Scimago Journal Report (SJR) journals. Collaboration in 3 book chapters, participation in more than 30 international conferences. Participation in 11 national competitive research projects (serving as Principal Investigator in two and co-PI in one), 1 international, and 16 regional competitive research projects. Doctoral Thesis developed under the National Research Project ALCANZA (IPT/80000/2010/012) Universidad de Cantabria with a 2½-year pre-doc research contract, with collaboration of a private construction company. Results include 2 Doctoral Theses, 2 patents and numerous research papers. Three international stays at Purdue University, IN, USA (more than 5 months in total). More than 60 knowledge-transfer contracts with private companies and other institutions (total budget managed above 380.000 €).

3 Doctoral Theses supervised to completion and 3 currently in progress, one of them founded by national government through the competitive grant for Training University Professors (FPU 2021). About 1200 hours of teaching at Degree and Master levels in Mechanical, Mining and Civil Engineering. About 45 master and graduate dissertations supervised in several topics. 2 teaching innovation projects, leading 1. 3 teaching publications, 11 courses of teaching

training, 5 contributions to teaching conferences. 5 Erasmus Agreements coordinated with Turkey, Italy and United Kingdom. One teaching award from "Cátedra Milla del Conocimiento: Xixón Sostenibilidad" as supervisor of the Master dissertation Developing carbon footprint assessment of wind turbines: applied to the United Kingdom.

Main research lines are focused on the analysis of lightweight concretes and sustainable materials for construction. Advanced numerical models and experimental equipment are combined to optimise porous materials, improve sustainability, and reduce GHG emissions. Circular economy, the use of byproducts from metal industry for CO₂ sequestration or the addition of advanced materials such as Phase Change Materials are the topics of the current research projects ran. Specifically, in Plan Nacional 2021 the research project entitled Experimental and numerical study of adaptive envelopes made of lightweight concrete with phase change materials (LADEN+PCM) combines Phase Change Materials (PCM) and LightWeight Concretes. LADEN+PCM project seeks to design adaptive envelopes able to change its thermal performance with the climate conditions. Adaptive envelopes will help to reduce energy consumption of building, improving efficiency of constructions, improving sustainability and protecting environment.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

- 1 **Artículo científico.** Ana Silvia González García; Luis Tomás Silva Klein; Victor Vega Martínez; (4/5) Mar Alonso Martínez; Juan José del Coz Díaz. 2024. Assessment of Lightweight Concrete Properties with Zinc Oxide Nanoparticles: Structural and Morphological Analyses. Applied Sciences. MDPI. 14-11, pp.1-14. ISSN 2076-3417.
- 2 **Artículo científico.** Matias Alvarez Rodriguez; (2/4) Mar Alonso Matinez; Ines Suarez Ramon; Paulino José García Nieto. 2024. Numerical model for determining the effective heat capacity of macroencapsulated PCM for building applications. Applied Thermal Engineering. Elsevier. 242-122478, pp.1-17. ISSN 1359-4311.
- 3 **Artículo científico.** Zulima Fernández Muñoz; Francisco Montero Chacón; Carlos López-Colina Pérez; (4/6) Mar Alonso Martínez; Juan José del Coz Díaz; Fernando. 2024. Numerical study of concrete: a mesoscopic scale simulation methodology. Applied Sciences. MDPI. 14-13(5495). ISSN 2076-3417.
- 4 **Artículo científico.** J.M. Pérez Bella; J. Domínguez Hernández; J.E. Martínez Martínez; (4/5) M. Alonso Martínez; J.J. del Coz Díaz. 2022. An alternative approach to estimate any subdaily extreme of rainfall and wind from usually available records. Stochastic Environmental Research and Risk Assessment. Elsevier. 36, pp.1819-1833. ISSN 1436-3240.
- 5 **Artículo científico.** Juan Enrique Martínez Martínez; Felipe Pedro Álvarez Rabanal; Mariano Lázaro; (4/6) Mar Alonso Martínez; Daniel Alvear; Juan José del Coz Díaz. 2021. Assessment of lightweight concrete thermal properties at elevated temperatures. Applied Sciences (Switzerland). MDPI. 11-10023. ISSN 0950-0618.
- 6 **Artículo científico.** Rubén Regueria Gay; Juan Enrique Martínez Martínez; (3/6) Mar Alonso Martínez; Felipe Pedro Álvarez Rabanal; Manuel Guaita; Juan José del Coz Díaz. 2021. Experimental and numerical analyses of rounded dovetail timber connections (RDC) under fire conditions. Engineering Structures. Elsevier. 228-111535. ISSN 0141-0296.
- 7 **Artículo científico.** ; Osman Gencel; Mucahit Sutcu; F. Kocyigit; Juan José del Coz Díaz; (6/8) Felipe Pedro Álvarez Rabanal; Mar Alonso Martínez; Gonzalo Martínez Barrera. 2021. Thermal Performance Optimization of Lightweight Concrete/EPS Layered Composite Building Blocks. International Journal of Thermophysics. Springer. 42 (4)-52. ISSN 1572-9567.

- 8 **Artículo científico.** Juan José del Coz Díaz; Felipe Pedro Álvarez Rabanal; (3/4) Mar Alonso Martínez; Juan Enrique Martínez Martínez. 2021. Thermal inertia characterization of multilayer light weight walls: Numerical analysis and experimental validation. Applied Sciences (Switzerland). MDPI. 11-5008. ISSN 2076-3417.
- 9 **Artículo científico.** Gonzalo Martínez Barrera; Liliana Ávila Córdoba; Fernando Ureña Núñez; (4/6) Mar Alonso Martínez; Felipe Pedro Álvarez Rabanal; Osman Gencel. 2021. Waste Polyethylene terephthalate flakes modified by gamma rays and its use as aggregate in concrete. Construction and Building Materials. Elsevier. 268-121057. ISSN 0950-0618.
- 10 **Artículo científico.** (1/4) Mar Alonso Martínez (AC); José Luis Suárez Sierra; Juan José del Coz Díaz; Juan Enrique Martínez Martínez. 2020. A New Methodology to Design Sustainable Archimedean Screw Turbines as Green Energy Generators. International Journal of Environmental Research and Public Health. MDPI. 17-24, pp.9236. ISSN 1660-4601.
- 11 **Artículo científico.** Juan José Del Coz Díaz; Juan Enrique Martínez Martínez; (3/4) Mar Alonso Martínez; Felipe Pedro Álvarez Rabanal. 2020. Comparative study of LightWeight and Normal Concrete composite slabs behaviour under fire conditions. Engineering Structures. Elsevier. 207-110196, pp.1-11.
- 12 **Artículo científico.** José M. Pérez Bella; Javier Domínguez Hernández; Enrique Cano Suñén; (4/5) Mar Alonso Martínez; Juan J del Coz Díaz. 2020. Equivalence between the methods established by ISO 15927-3 to determine wind-driven rain exposure: Reanalysis and improvement proposal. Building and Environment. Elsevier. 174-106777, pp.1-13. ISSN 0360-1323.
- 13 **Artículo científico.** José María Pérez Bella; Javier Domínguez Hernández; Enrique Cano Suñén; (4/5) Mar Alonso Martínez; Juan José del Coz Díaz. 2020. Improvement of a functional method to determine the design thermal transmittance of building façades. Implementation in southern Spain. Journal of Building Engineering. Elsevier. 30-101231. ISSN 2352-7102.
- 14 **Artículo científico.** Gonzalo Martínez Barrera; Juan José del Coz Díaz; (3/4) Mar Alonso Martínez; Miguel Martínez López. 2020. Materials Lamellae of waste beverage packaging (Tetra Pak) and gamma radiation as tools for improvement of concrete. Case Studies in Construction. Elsevier. 12, pp.1-11. ISSN 2214-5095. <https://doi.org/doi.org/10.1016/j.cscm.2019.e00315>
- 15 **Artículo científico.** Mar Alonso Martínez; José Miguel Adam; Felipe Pedro Álvarez Rabanal; Juan José del Coz Díaz. 2019. Wind turbine tower collapse due to flange failure: FEM and DOE analyses. Engineering Failure Analysis. Elsevier. 104, pp.932-949. ISSN 1350-6307.

C.3. Proyectos o líneas de investigación

- 1 **Proyecto.** MU-22-FPU21/05062, NATIONAL GRANT FOR TRAINING UNIVERSITY PROFESSORS. FPU. ALONSO MARTINEZ 1. (Universidad de Oviedo). 16/12/2022-15/12/2026. 102.264,86 €. Investigador principal.
- 2 **Proyecto.** ESTUDIO EXPERIMENTAL Y NUMERICO DE ENVOLVENTES ACTIVAS BASADAS EN HORMIGONES LIGEROS CON MATERIALES DE CAMBIO DE FASE. Agencia Estatal de Investigación. Alonso Martínez 1. (Universidad de Oviedo). 01/09/2022-31/12/2024. 108.900 €.
- 3 **Proyecto.** ADICIÓN DE NANOPARTÍCULAS A HORMIGONES LIGEROS PARA LA CAPTACIÓN DE CO₂: HACIA UNA CONSTRUCCIÓN SOSTENIBLE. María Montes Bayón. (Universidad de Oviedo). 01/12/2022-30/11/2024. 172.500 €.
- 4 **Proyecto.** GRUPOS DE INVESTIGACIÓN EN CONSTRUCCIÓN SOSTENIBLE, SIMULACIÓN Y ENSAYO (GICONSIME) - AYUDAS A GRUPOS DE INVESTIGACIÓN EN EL PRINCIPADO DE ASTURIAS EN EL PERÍODO 2018-2020. FUNDACION PARA LA INVESTIGACION CIENTIFICA Y TECNICA FICYT. JUAN JOSÉ DEL COZ DÍAZ. (Universidad de Oviedo). 01/01/2021-31/12/2023. 171.527 €. INVESTIGADOR DEL EQUIPO.

- 5 **Proyecto.** ANÁLISIS HIGROTÉRMICO, ESTRUCTURAL Y DE RESISTENCIA AL FUEGO DE NUEVOS FORJADOS MIXTOS INDUSTRIALIZADOS HLE-MADERA, ESTUDIO NUMÉRICO Y EXPERIMENTAL. AGENCIA ESTATAL DE INVESTIGACIÓN (Mº.ECON.IND). JUAN JOSÉ DEL COZ DÍAZ. (Universidad de Oviedo). 01/01/2019-31/12/2021. 205.700 €. INVESTIGADOR COLABORADOR EN LA REALIZACIÓN DE SIMULACIONES NUMÉRICAS PARA EL DISEÑO Y ESTUDIO DE ELEMENTOS MIXTOS DE HLE-MADERA ABORDANDO PROBLEMAS ALTAMENTE NO LINEALES.
- 6 **Contrato.** WIND EFFECT ASSESSMENT ON PASSENGER BOARDING BRIDGES THYSSENKRUPP AIRPORT SOLUTIONS S.A.. Mar Alonso Martínez. 04/11/2023-04/11/2024. 14.040 €.
- 7 **Contrato.** DEVELOPMENT OF SOIL HARDENERS USING NANOPARTICLES FOR MECHANICAL AND ENVIRONMENTAL IMPROVEMENT OF POOR QUALITY LANDS GLOBAL DE ASESORAMIENTO Y APLICACIÓN TÉCNICA (ATEGLOB). Mar Alonso Martínez. 26/10/2023-29/11/2024. 24.299,03 €.
- 8 **Contrato.** RECLAMACIÓN POR SINIESTRO EN EL PALACIO DE QUIRÓS (OVIEDO) GUILLERMO CAMBLOR FLÓREZ. ALFONSO LOZANO MARTÍNEZ-LUENGAS. 26/01/2019-02/02/2019. 680 €.
- 9 **Contrato.** ANÁLISIS DEL ESTADO ACTUAL DE LAS CARPINTERÍAS DE MADERA DEL PAZO DE ARENAZO EN OLEIROS (LA CORUÑA) DAVID LORENZO TIMBER ENGINEERING CONSULTING. ALFONSO LOZANO MARTÍNEZ-LUENGAS. 16/01/2019-16/04/2019. 675 €.
- 10 **Contrato.** ANÁLISIS DEL DESPLOME PARCIAL DE LA FACHADA TRASERA DEL EDIFICIO SITUADO EN LA CONFLUENCIA DE LA AVENIDA DE LOS TELARES Y LA CALLE DE LA ESTACIÓN DE AVILÉS GONCARRIO S.L.. ALFONSO LOZANO MARTÍNEZ-LUENGAS. 03/01/2019-20/01/2019. 1.100 €.
- 11 **Contrato.** MEDICIÓN DEL DESPLAZAMIENTO CONTINUO SOBRE ANGULAR DE PASARELA DE EMBARQUE THYSSENKRUPP AIRPORT SOLUTIONS S.A.. FELIPE PEDRO ÁLVAREZ RABANAL. 01/01/2019-01/04/2019. 5.340 €.