

Parte A. DATOS PERSONALES

Fecha del CVA 30/01/2023

Nombre y apellidos	FRANCISCO AGRELA SAINZ		
DNI/NIE/pasaporte		Edad	
Núm. identificación del investigador	Researcher ID	G-4253-2016	
	Código Orcid	0000-0002-2380-4226	

A.1. Situación profesional actual

Organismo	Universidad de Córdoba		
Dpto./Centro	Ingeniería Rural		
Dirección	Córdoba, Andalucía, España		
Teléfono	957212239	Correo electrónico	fagrela@uco.es
Categoría profesional	Catedrático de universidad	Fecha inicio	2019
Espec. cód. UNESCO			
Palabras clave			

A.2. Formación académica (título, institución, fecha)

Licenciatura/Grado/Doctorado	Universidad	Año
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A.3. Indicadores generales de calidad de la producción científica (véanse instrucciones)

Indicador	Medida
Número de citas	3041.0
Tesis dirigidas en los últimos 10 años	6.0
Índice H	25.0
Publicaciones	45.0
Sexenios de investigación	3.0

Parte B. RESUMEN LIBRE DEL CURRÍCULUM

Francisco Agrela is a Full Professor since July 2019 in the area of -Construction Engineering Area- at the University of Córdoba, Spain. Since 2003, He is a professor and researcher in this area. He has also belonged to the "Construction Engineering" Research Group of the Andalusian Government since 2005. He has held different positions at the Higher Technical School of Civil Engineers of the University of Córdoba, including Academic Deputy Director of Urbanism (2014-18). He has received two Teaching Awards in the last 10 years with an EXCELLENT rating both times. He has participated in more than 50 articles indexed in JCR, presenting a h-index = 26 (scopus), a he has participated in more than 50 communications to international congresses and in several book chapters. He was co-editor with Prof. Dr. Jorge de Brito in two books produced by Woodhead Editorial - Elsevier Group, "New Trends in recycled and eco-efficient concrete" (2008) and "Waste and by-products in cement-based materials" (2020), and I am currently co-editor of the book "On the road to green concrete". He currently has three periods of research / transfer grants, and has participated in more than 40 research projects as principal investigator, 5 of them National public bidding projects. He led two bidding projects with companies in which I was the principal investigator: INNPACTO IPT-2011-1658-31000 project, and Ecaryse RTC-2017-6202-5, which were achieved with Sacyr company, and they were financed with ERDF funds, and they were focused on several studies of Recycled Aggregates, Biomass Bottom Ash, polymers, nanomaterials, etc., applied in road construction. In addition, He is currently the main researcher in the Smatcar project (PID2019-107238RB-C22) that focuses on the development of concrete pavements with recycled materials. Also, CENIT-CLEAM project, Sustainable Pavements, and Areco Project, collaborating with Cedex, Sacyr, Aidico and Tecnalía. In recent years I have contracted more than 20 projects with different companies or public bodies. He has directed five doctoral theses, and there are currently another 2 in the preparation phase. He did three international stays, one at the Hong Kong Polytechnic University with Professor Chi-Sun Poon, and another at the Delft University of Technology with Professor Andrea Molenaar. He has directed 10 Master's final projects in different research projects in the last 5 years. He is reviewer of more than 15 indexed journals in JCR,

such as Construction and building Materials, Waste Management, Fuel, Materials, Cleaner Production , Materials and Design, etc.

Parte C. MÉRITOS MÁS RELEVANTES *(ordenados por tipología)*

C.1. Publicaciones

Publicación en Revista. Cabrera, Manuel; Echevarria, María José; Lopez-Alonso, Monica; Agrela-Sainz, Francisco; Rosales, Julia. 2021. Self-Compacting Recycled Concrete Using Biomass Bottom Ash. Materials. 14, pp. 6084-

Publicación en Revista. Cabrera, Manuel; Lopez-Alonso, Monica; Agrela-Sainz, Francisco. 2021. Self-compacting recycled concrete using biomass bottom ash . Materials. 14, pp. 6084-

Publicación en Revista. Lopez-Alonso, Monica; Garach-Morcillo, Laura; Alegre-Bayo, Francisco Javier; Agrela-Sainz, Francisco. 2020. Crushing treatment on recycled aggregates to improve their mechanical behaviour for use in unbound road layers. Construction and Building Materials. 263,

Publicación en Revista. Martínez-Echevarría Romero, M^a José; Lopez-Alonso, Monica; Garach-Morcillo, Laura; Alegre-Bayo, Francisco Javier; Agrela-Sainz, Francisco; Cabrera, Manuel. 2020. Crushing treatment on recycled aggregates to improve their mechanical behaviour for use in unbound road layers. Construction and Building Materials. 263, pp. 120517-

Publicación en Revista. Rosales, Julia; Agrela-Sainz, Francisco; Entrenas, José Antonio ; Cabrera, Manuel. 2020. Potential of Stainless Steel Slag Waste in Manufacturing Self-Compacting Concrete. Materials. 13, pp. 2049-

Publicación en Revista. González-gallardo, Francisco; González-gallardo, Francisco; Rosales, Julia; Távira, Javier; Ayuso-Muñoz, Jesús. 2020. Complete Real-Scale Application of Recycled Aggregates in a Port Loading Platform in Huelva, Spain. Materials. 13,

Publicación en Revista. Agrela-Sainz, Francisco; Marcobal, José Ramón; Díaz-lópez, José Luis; Cuenca-moyano, Gloria María; Cabrera, Manuel. 2020. Use of Nanomaterials in the Stabilization of Expansive Soils into a Road Real-Scale Application. Materials. 13, pp. 3058-

Publicación en Revista. Cabrera, Manuel; Díaz-lópez, José Luis; Agrela-Sainz, Francisco; Rosales, Julia. 2020. Eco-Efficient Cement-Based Materials Using Biomass Bottom Ash: A Review. Applied Sciences. 10, pp. 8026-

Publicación en Revista. López-uceda, Antonio; Agrela-Sainz, Francisco; Cabrera, Manuel; Ayuso-Muñoz, Jesús; López-Aguilar, Martín. 2018. Mechanical performance of roller compacted concrete with recycled concrete aggregates. Road Materials and Pavement Design. 19, pp. 36-55.

Publicación en Revista. Cabrera, Manuel; Rosales, Julia; Ayuso-Muñoz, Jesús; Estaire, José; Agrela-Sainz, Francisco. 2018. Feasibility of using olive biomass bottom ash in the sub-bases of roads and rural paths. Construction and Building Materials. 181, pp. 266-275.

Publicación en Revista. Rosales, Julia; Cabrera, Manuel; Agrela-Sainz, Francisco. 2017. Effect of stainless steel slag waste as a replacement for cement in mortars. Mechanical and statistical study. Construction and Building Materials. 142, pp. 444-458.

Publicación en Revista. Beltrán, Manuel G.; Barbudo Muñoz, M^a Auxiliadora; Agrela-Sainz, Francisco; Jiménez-Romero, José Ramón; De Brito, Jorge. 2016. Mechanical performance of bedding mortars made with olive biomass bottom ash. Construction and Building Materials. 112, pp. 699-707.

Publicación en Revista. López-uceda, Antonio; Ayuso-Muñoz, Jesús; López-Aguilar, Martín; Jiménez-Romero, José Ramón; Agrela-Sainz, Francisco; Sierra, María José. 2016. Properties of Non-Structural Concrete Made Mixed with Recycled Aggregates and Low Cement Content. *Materials*. 9, pp. 1-19.

Publicación en Revista. López-uceda, Antonio; Ayuso-Muñoz, Jesús; Jiménez-Romero, José Ramón; Agrela-Sainz, Francisco; Barbudo Muñoz, M^a Auxiliadora; De Brito, Jorge. 2016. Upscaling the Use of Mixed Recycled Aggregates in Non-Structural Low Cement Concrete. *Materials*. 9,

Publicación en Revista. Cabrera, Manuel; Agrela-Sainz, Francisco; Ayuso-Muñoz, Jesús; Perez-Galvin, Adela; Rosales, Julia. 2016. Feasible use of biomass bottom ash in the manufacture of cement treated recycled materials. *Materials and Structures*. 49, pp. 3227-3238-3238.

Publicación en Revista. Agrela-Sainz, Francisco; Garcia-beltran, Manuel. 2016. Reduction of Leaching Impacts by Applying Biomass Bottom Ash and Recycled Mixed Aggregates in Structural Layers of Roads. 9, pp. 238-235.

Publicación en Revista. Perez-Galvin, Adela; Agrela-Sainz, Francisco; Ayuso-Muñoz, Jesús; Beltrán, Manuel G.; Barbudo Muñoz, M^a Auxiliadora. 2014. Leaching assessment of concrete made of recycled coarse aggregate : Physical en environmental characterisation of aggregates and hardened concrete . *Waste Management*. 34, pp. 1693-1704.

Publicación en Revista. Agrela-Sainz, Francisco; Cabrera, Manuel; Perez-Galvin, Adela; Barbudo Muñoz, M^a Auxiliadora; Ramírez-rodríguez, Antonio. 2014. Influence of the sulphate content of recycled aggregates on the properties of cement-treated granular materials using Sulphate-Resistant Portland Cement. *Construction and Building Materials*. 68, pp. 127-134.

Publicación en Revista. Beltrán, Manuel G.; Agrela-Sainz, Francisco; Barbudo Muñoz, M^a Auxiliadora; Ayuso-Muñoz, Jesús; Ramírez-rodríguez, Antonio. 2014. Mechanical and durability properties of concretes manufactured with biomass bottom ash and recycled coarse aggregates. *Construction and Building Materials*. 72, pp. 231-238.

Publicación en Revista. Agrela-Sainz, Francisco. 2014. Influence of the sulphate content of recycled aggregates on the properties of cement-treated granular materials using Sulphate-Resistant Portland Cement. *Construction and Building Materials*. 68, pp. 127-134.

Publicación en Revista. Rodríguez-hinojosa, M^a José; Perez-Galvin, Adela; Agrela-Sainz, Francisco; Perianes, María; Barbudo Muñoz, M^a Auxiliadora. 2014. Potential use of biomass bottom ash as alternative construction material: conflictive chemical parameters according to technical regulations.. *Fuel*. 128, pp. 248-259.

Publicación en Revista. Beltrán, Manuel G.; Barbudo Muñoz, M^a Auxiliadora; Agrela-Sainz, Francisco; Perez-Galvin, Adela; Jiménez-Romero, José Ramón. 2014. Effect of cement addition on the properties of recycled concretes to reach control concretes strengths. 79, pp. 124-133.

Libros. Agrela-Sainz, Francisco; Alaejos, Pilar; Sánchez De Juan, Marta. 2013. Handbook of recycled concrete and demolition waste. Woodhead Publishing.

C.2. Proyectos

PID2019-107238RB-C22. Desarrollo de revestimientos y reparadores con reducida huella de carbono mejorando la seguridad por sus masas inteligentes. Aplicaciones avanzadas en infraestructuras. Ministerio de Ciencia, Innovación y Universidades. 2020-2023. 130680 EUR. Investigador Principal Consolidado.

RTC-2017-6202-5. Reducción de cal en suelos expansivos mediante aprovechamiento de residuos y subproductos estabilizadores. MINECO: Plan Estatal 2013-2016 de Investigación Científica y Técnica y de Innovación. 2018-2022. 250992 EUR. Investigador Principal Consolidado.

G-GI3000-IDIIY. Aplicaciones de los áridos reciclados de residuos de construcción y demolición en la construcción sostenible de infraestructura viaria en Andalucía central. Agencia Obra Pública de la Junta de Andalucía, Consejería de Fomento y Vivienda. Ayuso-Muñoz, Jesús (Universidad de Córdoba). 2012-2014. 301962 EUR. Investigador/a.

IPT-2011-1658-310000. Estudio de Propiedades de áridos reciclados procedentes de RCD, RAP y EB, para su aplicación en obras de infraestructura lineal. Ministerio de Ciencia e Innovación. Agrela-Sainz, Francisco (Universidad de Córdoba). 2011-2014. 288673.50 EUR. Responsable.

C.3. Contratos, méritos tecnológicos o de transferencia

Estudios de idoneidad de escorias de acero inoxidable procedentes de la empresa Acerinox para su posible valorización y reciclaje en materiales base cemento.. Agrela-Sainz, Francisco (Universidad de Córdoba). 2017-2018. 72600.00 EUR.

Estudio de áridos reciclados mixtos de distintas categorías para su uso en carreteras.. Agrela-Sainz, Francisco (Universidad de Córdoba). 2016-2017. 12100.00 EUR.

Estudios complementarios de comportamiento de materiales reciclados y convencionales para obras civiles.. Agrela-Sainz, Francisco (Universidad de Córdoba). 2014-2014. 3630.00 EUR.

Aplicaciones de los áridos reciclados de residuos de construcción y demolición (RCD) para la construcción sostenible de infraestructuras viarias en Andalucía central. Ayuso-Muñoz, Jesús (Universidad de Córdoba). 2012-2014. 301962.00 EUR.

Reutilización de áridos reciclados mixtos con contenido variable de partículas asfálticas procedentes de RCD y residuos de vidrio procesados procedentes de RAE para su aplicación en sub-bases de carreteras y caminos rurales. Agrela-Sainz, Francisco (Universidad de Córdoba). 2012-2013. 3776.00 EUR.

C.4. Patentes

C.5. Congreso

Industrial by-products as supplementary cementing materials in the manufacture of cement mortars. 11/10/2018.

Biomass bottom ash a sustainable alternative for the manufacture of cement-based materials. 11/10/2018.

Stainless steel slag waste as a replacement for cement in mortars. 05/03/2018.

Estudio de aplicación de escorias de acero inoxidable en cementos y morteros. 15/11/2017.

Technical and environmental properties of recycled mixed and concrete aggregates according to a new classification. 30/10/2019.