

CV Date

23/05/2026

Part A. PERSONAL INFORMATION

First Name	Juan Salvador		
Family Name	Bueno Rodríguez		
Sex	Male	Date of Birth	
ID number Social Security, Passport			
URL Web			
Email Address			
Open Researcher and Contributor ID (ORCID)	0000-0003-0830-591X		

A.1. Current position

Job Title	Associate Professor		
Starting date	2023		
Institution	Universidad de Jaén		
Department / Centre	Chemical Engineering, Environment and Materials / Higher Polytechnic School		
Country		Phone Number	
Keywords	Ceramics; Mechanical properties; Waste recycling; Construction materials		

A.3. Education

Degree/Master/PhD	University / Country	Year
Master Universitario en Ingeniería de los Materiales y Construcción Sostenible	Universidad de Jaén / Spain	2018
Tendencias Actuales en Química Inorgánica y Analítica	Universidad Autónoma de Madrid / Spain	2005
Ingeniero Químico	Universidad de Granada / Spain	2000

Part B. CV SUMMARY

Associate Professor at the University of Jaén, the researcher is Chemical Engineer from Universidad de Granada (2000) and PhD in Chemical Sciences from Universidad Autónoma de Madrid (2005). He completed his PhD at Instituto de Cerámica y Vidrio (ICV-CSIC) and a Postdoctoral grant (2006-2007) at ISTE (Istituto di Scienza e Tecnologia dei Materiali Ceramici) of the Consiglio Nazionale delle Ricerche (CNR), in Faenza (Italy), centers where he has received a complete training in processing and microstructural and mechanical characterization of ceramic materials. During this formative period he had the opportunity to work in different international collaborations with other researchers in the frame of the Research Training Network: "SICMAC. Structural Integrity of Ceramic Multilayers and Coatings (CE-HPRN-CT-2002-00203), the Research Institute for Nanoscience (RIN, Japan) and the Institut für Struktur-und Funktionskeramik, Mountainuniversität (Leoben, Austria)). Therefore, he has developed the skills necessary to combine processing, mechanical testing procedures and microstructural characterization techniques for a fruitful interpretation of results.

Subsequently, within the Materials Area of Fundación Innovarcilla (2007-2020) he has coordinated a series of applied research projects in those fields in which it is more necessary to promote the dynamization of construction materials companies. Thus, he has carried out a multitude of actions aimed at generating and disseminating knowledge about the sustainability of ceramic construction materials.

This trajectory continued as Assistant and Associate Professor at the University of Jaén since 2020, highlighting his research on the following topics:

- Alkaline activation of construction and demolition waste (CDW);
- Recovery of waste in ceramic materials for a sustainable and energy efficient building;

- Optimization of the insulating properties of fired clay;
- Feasibility of industrial reuse of ceramic manufacturing waste;
- Technological characterization of ceramic raw materials for their subsequent industrial application;
- Formulation, shaping and consolidation of clays for application in 3D printing;
- Consolidation of nanoclays as fillers for filters for adsorption of emerging pollutants.

In short, his main research topic is the establishment of relationships between processing, microstructure and thermo-mechanical properties of materials and the design of environmentally friendly materials and processing methods capable of increasing the product life cycle and reducing energy consumption and pollution. This topic ranges from the recovery of waste as potential alternative raw materials for the ceramic sector to the production of chemically activated materials, taking into account the energy optimization of the manufacturing process.

The scientific excellence of the researcher is also shown by his indicators of scientific production: publications included in the Science Citation Index (SCI) and participation in numerous national and international Conferences. He has directed the doctoral thesis entitled: Functional valorization of waste in the ceramic construction materials industry, and is currently supervising two theses on alkaline activation of different types of waste for the sustainable production of new cements.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- 1 Scientific paper.** Ángel Galán Martín; Richard Cabrera Jiménez; (3/5) Salvador Bueno Rodríguez; Rosendo Jesús Galán Arboledas; Gonzalo Guillén Gosálbez. 2026. Assessing Pathways to Carbon Neutrality in the Ceramic Sector: A Prospective Life Cycle Assessment under Energy System Projections and Technology Scenarios. Environmental Science and Technology. American Chemical Society. 60-1, pp.552-565.
- 2 Scientific paper.** Ana Muñoz Castillo; (2/3) Salvador Bueno; Dolores Eliche Quesada. 2026. Circular Alkali-Activated Cements Based on EAF Slags and Biomass Bottom Ash Using Rice Husk Ash-Derived Sodium Silicate. Journal of the American Ceramic Society. The American Ceramic Society. 109-e70632.
- 3 Scientific paper.** Almudena García Díaz; (2/4) Salvador Bueno; Manuel Felipe Sesé; Dolores Eliche Quesada. 2024. Effect of the incorporation of spent diatomeaceous earths on the properties of alkaline activation cements based on sewage sludge ash. Archives of Civil and Mechanical Engineering. Springer. 24-62.
- 4 Scientific paper.** Almudena García-Díaz; (2/4) Salvador Bueno-Rodríguez; Luis Pérez Villarejo; Dolores Eliche-Quesada. 2024. Improved strength of alkali activated materials based on construction and demolition waste with addition of rice husk ash. Construction and Building Materials. Elsevier. 413, pp.134823. ISSN 1879-0526.
- 5 Scientific paper.** Milica Vidak Vasić; Pedro Muñoz Velasco; (3/8) Salvador Bueno-Rodríguez; Ivanka Netinger Grubesa; Michele Dondi; Luis Pérez Villarejo; Dolores Eliche-Quesada; Chiara Zanelli. 2024. State and perspectives of sustainable production of traditional silicate ceramics. Open Ceramics. Elsevier. In press, pp.100537. ISSN 2666-5395.
- 6 Scientific paper.** Miguel Ángel Gómez-Casero; (2/4) Salvador Bueno-Rodríguez; Eulogio Castro; Dolores Eliche-Quesada. 2024. Alkaline activated cements obtained from ferrous and non-ferrous slags. Electric arc furnace slag, ladle furnace slag, copper slag and silico-manganese slag. Cement and Concrete Composites. Elsevier. 147, pp.105427. ISSN 1873-393X.

- 7 **Scientific paper.** Almudena García-Díaz 1; Pedro Delgado-Plana 2; (3/4) Salvador Bueno; Dolores Eliche Quesada. 2024. Investigation of waste clay brick (chamotte) addition and activator modulus in the properties of alkaline activation cements based on construction and demolition waste. Journal of Building Engineering. Elsevier. 84-108568. ISSN 2352-7102.
- 8 **Scientific paper.** Miguel Ángel Gómez-Casero; C. de Dios-Arana; Juan Salvador Bueno-Rodríguez; Luis Pérez-Villarejo; Dolores Eliche-Quesada. 2022. Physical, mechanical and thermal properties of metakaolin-fly ash geopolymers. Sustainable Chemistry and Pharmacy. Elsevier. 26, pp.100620.
- 9 **Scientific paper.** ; Ángel Galán-Martín; María del Mar Contreras; Inmaculada Romero; Encarnación Ruiz; Salvador Bueno-Rodríguez; Dolores Eliche-Quesada; Eulogio Castro-Galiano. 2022. The potential role of olive groves to deliver carbon dioxide removal in a carbon-neutral Europe: Opportunities and challenges. Renewable and Sustainable Energy Reviews. Elsevier. 165, pp.112609.
- 10 **Scientific paper.** José Manuel Moreno-Maroto; Pedro Delgado-Plana; Rafael Cabezas-Rodríguez; Ruby Mejía de Gutierrez; Dolores Eliche-Quesada; Luis Pérez-Villarejo; Rosendo Jesús Galán-Arboledas; Salvador Bueno. 2021. Alkaline activation of high-crystalline low-Al₂O₃ Construction and Demolition Wastes to obtain geopolymers. Journal of Cleaner Production. Elsevier. 330, pp.129770.
- 11 **Scientific paper.** José Antonio de la Casa; Salvador Bueno; Eulogio Castro. 2021. Recycling of residues from the olive cultivation and olive oil production process for manufacturing of ceramic materials. A comprehensive review. Journal of Cleaner Production. Elsevier. 296, pp.126436.
- 12 **Scientific paper.** Salvador Bueno; Esperanza Durán; Beatriz Gámiz; M. Carmen Hermosín. 2020. Formulating low cost modified bentonite with natural binders to remove pesticides in a pilot water filter system. Journal of Environmental Chemical Engineering. Elsevier. 9-1, pp.104623.
- 13 **Book chapter.** Salvador Bueno; Carmen Baudín. 2021. Aluminum Titanate, Structure and Properties. Encyclopedia of materials. Technical Ceramic and Glasses. Elsevier. 2, pp.76-92. ISBN 978-0-12-822233-1.
- 14 **Scientific book or monograph.** Michele Dondi; F. Andreola; Salvador Bueno; et al; P. Seabra. 2018. CATALOGUE OF CERAMIC RAW MATERIALS AND POTENTIAL SUBSTITUTES. EIP-RMS Commitment CRAM. 18-05, pp.1-70.
- 15 **Scientific book or monograph.** Michele Dondi; F. Andreola; G. Angelopoulos; et al; Chiara Zanelli. 2017. ROADMAP TOWARDS A STRATEGY FOR NEW MATERIALS NECESSARY TO THE EUROPEAN CERAMIC INDUSTRY. EIP-RMS Commitment CRAM. 17-06, pp.1-18.

C.3. Research projects and contracts

- 1 **Project.** PID2024-159032OB-C21, ACTIVADSORBE. Nuevos materiales activados alcalinamente con porosidad controlada y control reológico para manufactura aditiva. Ministerio de Ciencia, Innovación y Universidades. Luis Pérez Villarejo. (Universidad de Jaén). 05/11/2025-04/11/2029. 166.250 €. Team member.
- 2 **Project.** R1B_2025_012, SYNBIOCER. Sinergias de la activación alcalina de residuos de construcción y la adición de biochar para la producción de elementos cerámicos sostenibles. Universidad de Jaén. (Universidad de Jaén). 01/02/2026-31/01/2028. 10.000 €. Principal investigator.
- 3 **Project.** ECOCER. Ecodiseño de materiales cerámicos para una construcción sostenible. INSTITUTO DE ESTUDIOS GIENENSES. Salvador Bueno 2. (Universidad de Jaén). 03/10/2024-02/10/2025. 4.000 €. Team member.
- 4 **Project.** CongActiva. Aplicando la economía circular en el desarrollo de nuevos conglomerantes hidráulicos activados alcalinamente de baja huella de carbono para soluciones constructivas. Ministerio de Ciencia e Innovación. Dolores Eliche Quesada. (Universidad de Jaén). 01/09/2021-31/08/2024. 108.900 €. Team member.
- 5 **Project.** GEOCIRCULA. Economía circular en la fabricación de nuevos composites geopoliméricos: hacia el objetivo de cero residuos.. Consejería de Transformación Económica, Industria, Conocimiento y Universidades. Junta de Andalucía. Dolores Eliche Quesada. (Universidad de Jaén). 01/01/2021-31/12/2023. 102.268 €.

- 6 Project.** ECOMATS. Aplicación de la economía circular a la obtención de eco-materiales a partir de los residuos de construcción y demolición de la provincia de Jaén. Instituto de Estudios Gienenses. Juan Salvador Bueno Rodríguez. (Universidad de Jaén). 10/09/2021-09/09/2022. 3.000 €. Co-ordinator.
- 7 Project.** 6065, GEO4BUILD: Geopolymers and subproducts for a circular economy in the field of construction. Junta de Andalucía. (Universidad de Jaén). 31/10/2019-30/06/2021. 55.770 €. Team member.
- 8 Project.** PY18-RE-0017, CIRCULA_RCD: alkaline activation of construction and demolition waste (CDWs). A circular economy for the Andalusian ceramic sector.. Junta de Andalucía. (Fundación Innovarcilla). 01/01/2019-31/12/2020. 314.432,95 €. Principal investigator.
- 9 Project.** PI12/1920 (provisional resolution), EFIWALL. Materiales verdes para un sistema constructivo eficiente.. Junta de Andalucía, Consejería de Economía, Innovación, Ciencia y Empleo. Juan Salvador Bueno Rodríguez. (Fundación Innovarcilla). 01/01/2015-30/06/2018. 323.694 €. Co-ordinator.
- 10 Project.** TEP-7253, Keram-Eco: Valorisation of wastes into ceramics for sustainable and energy-efficient building. Junta de Andalucía, Consejería de Innovación, Ciencia y Empresa. Juan Salvador Bueno Rodríguez. (Fundación Innovarcilla). 05/2013-05/2016. 120.662,5 €. Co-ordinator.
- 11 Project.** P11-AGR-7400, Servicio de evaluación de la utilidad de las arcillas modificadas, preparadas y caracterizadas para descontaminación de aguas con herbicidas a escala semi-piloto. Instituto de Recursos Naturales y Agrobiología de Sevilla. Salvador Bueno. (Fundación Innovarcilla). 02/2014-01/2016. 36.000 €. Sub-contracted. Competitive contract with IRNAS - CSIC for development of a prototype filter based on modified clays for the treatment of water contaminated with pesticides
- 12 Project.** Contrato de Compra Pública Innovadora para el Servicio de Investigación, Desarrollo e Innovación para el diseño y desarrollo de prototipos innovadores basados en arcillas naturales o modificadas para depuración de aguas y nanoformulaciones de liberación inteligente de plaguicidas. Instituto de Recursos Naturales y Agrobiología de Sevilla. Juan Salvador Bueno Rodriguez. (Fundación Innovarcilla). 24/03/2015-20/11/2015. 65.000 €. Subcontracted Entity.
- 13 Project.** PI/10-44925, Prediction and improvement of the thermal and acoustic insulation of building ceramic materials. Ministerio de Industria Turismo y Comercio; Junta de Andalucía, Consejería de Innovación, Ciencia y Empresa. Juan Salvador Bueno Rodríguez. (Fundación Innovarcilla). 07/2010-12/2012. 708.786 €. Co-ordinator.
- 14 Contract.** Estudio para la mejora de la resistencia al impacto de materiales cerámicos con incorporación de partículas cristalinas COSENTINO, S.A.. Salvador Bueno. 02/07/2024-02/07/2025. 13.683,68 €.
- 15 Contract.** Mejora de la resistencia al impacto de materiales cerámicos COSENTINO, S.A.. Salvador Bueno. 21/03/2022-21/03/2023. 22.132,33 €.
- 16 Contract.** Conformado de filtro de carbón activo con geometría de panel BSH Electrodomésticos España, S.A.. Juan Salvador Bueno Rodríguez. 01/09/2018-16/10/2018. 3.660 €.
- 17 Contract.** Raw materials characterization directed to new industrial uses Instituto Geológico y Minero de España. Juan Salvador Bueno Rodríguez. (Fundación Innovarcilla). From 09/2009. 14.000 €.
- 18 Contract.** Technical characterization of plastic materials incorporating ceramic and natural stone wastes Fundación Centro Tecnológico Andaluz de la Piedra. Juan Salvador Bueno Rodríguez. (Fundación Innovarcilla). 09/2009-01/04/2010. 6.000 €.
- 19 Contract.** Recycling of paper waste into ceramic mixtures FCC Ambito. Juan Salvador Bueno Rodríguez. (Fundación Innovarcilla). 04/2009-31/12/2009. 10.800 €.