



Antonio Javier Sánchez Herencia

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Address: Calle García de Paredes 66, 4A, 28010, Madrid, Spain (Home)

● WORK EXPERIENCE

06/06/2014 – 05/02/2017 Madrid, Spain

DEPUTY VICE-PRESIDENT FOR SCIENTIFIC PROGRAMMING SPANISH NATIONAL RESEARCH AGENCY

Responsible of the participation of the CSIC Institutes and in the research programs funded by the National government, the European Union and other international institutions.

Financial officer of the CSIC for the European Union Funded Projects

Responsible of the Big Research Infrastructures participation on Research Actions.

Address Madrid, Spain

01/10/2012 – 05/06/2014 Madrid, Spain

DIRECTOR OF THE INSTITUTE FOR CERAMIC AND GLASS SPANISH NATIONAL RESEARCH COUNCIL

Responsible of the Scientific direction of the Institute and execution of the projects.

Representative of the Institute for official and professional events.

Responsible of personnel (more than 100 person) and building.

Address Madrid, Spain

01/07/2011 – 31/12/2011 Melbourne, Australia

VISITOR RESEARCHER AT THE UNIVERSITY OF MELBOURNE SPANISH MINISTRY OF SCIENCE AND INNOVATION

I was in a sabbatical stay at the Department of Chemical Engineering at the University of Melbourne. I joined the research group of Professor George Franks to in deep study the processing aspects of porous bodies. I was able to join some other international researchers in a knowledge center on the colloidal processing of materials.

01/10/2010 – 30/09/2012 Madrid, Spain

VICE-DIRECTOR OF THE INSTITUTE FOR CERAMIC AND GLASS SPANISH NATIONAL RESEARCH COUNCIL

In charge of the Scientific and Technical facilities of the Institute.

President of the Techniques Committee of the Institute

Coordinating the internal and external offer and cost of the services

Responsible of the access to common equipment.

Substituting the Director while a long absence for illness.

Address Madrid, Spain

16/08/2000 – CURRENT Madrid, Spain

TENURED SCIENTIST SPANISH NATIONAL RESEARCH COUNCIL - INSTITUTO DE CERÁMICA Y VIDRIO

Studies on the colloidal behaviour of inorganic particles in suspension aiming the processing of advanced materials for Energetic, Biological and Structural applications.

Proposal and participation in Research Projects.

Publication of papers

Address Madrid, Spain

01/09/1996 – 31/08/1998 Santa Barbara (CA), United States

VISITOR RESEARCHER AT THE UNIVERSITY OF CALIFORNIA AT SANTA BARBARA SPANISH
MINISTRY OF EDUCATION

Research on the microstructural development of residual stresses in ceramic laminates and the influence on the mechanical properties of the materials.

Address Santa Barbara, United States

01/01/1996 – 01/09/1996 Arganda del Rey (Madrid), Spain

POSTDOCTORAL RESEARCH ASSISTANT INSTITUTE FOR CERAMIC AND GLASS

Colloidal processing of materials and rheological studies on suspensions for industrially transferable processes.

Address Madrid, Spain

01/01/1992 – 31/12/1995 Arganda del Rey (Madrid), Spain

PHD GRANTED SPANISH MINISTRY OF EDUCATION

Research activities on Ceramic Laminates at the Institute for Ceramic and Glass of the Spanish Research Council (CSIC)

Address Madrid, Spain

● EDUCATION AND TRAINING

01/1992 – 11/1995 Madrid, Spain

DOCTOR IN CHEMISTRY Universidad Autónoma de Madrid

Doctoral Courses in Materials Science and PhD Thesis entitled "Laminated Ceramic Materials" where I studied the colloidal processing to design multilayered ceramics and the relationships between the laminated microarchitecture and the mechanical properties.

Address Madrid, Spain | **Level in EQF** EQF level 8

15/09/1985 – 15/06/1991 Madrid

GRADUATED IN CHEMISTRY Universidad Autónoma de Madrid

Graduated in Chemistry in a five years grade where the two last year were to specialize in Inorganic Chemistry.

Address Madrid | **Level in EQF** EQF level 7

● LANGUAGE SKILLS

Mother tongue(s): **SPANISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
GERMAN	A1	A1	A1	A1	

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ADDITIONAL INFORMATION

PUBLICATIONS

Publications

More than 100 paper published in international Journal with a H index =24 (WoS).

Most relevant papers:

- 1 Scientific paper. Rao, M.P.; et al. 1999. "Laminar ceramics that exhibit a threshold strength" Science. 286-5437, pp.102-105. ISSN 00368075.
- 2 Scientific paper. Sánchez-Herencia, A.J.; et al. 1999. "ZrO₂/ZrO₂ layered composites for crack bifurcation" J. Am. Ceram. Soc., 82-6, pp.1512-1518. ISSN 00027820.
- 3 Scientific paper. P. Alvaredo; et al. 2018. "Steel binder cermets processed by combination of colloidal processing and powder metallurgy" Int. J. Refract. Metals Hard Mater. 74, pp.1-6.
- 4 Scientific paper. Gonzalez, Z.; et al. 2017. "Electrochemical performance of pseudo-capacitor electrodes fabricated by Electrophoretic Deposition inducing Ni(OH)₂ nanoplatelets agglomeration by Layer-by-Layer" Electrochim. Acta. 247, pp.333-343.
- 5 Scientific paper. Molero, E.; et al. 2017. "Ti/Ti₃SiC₂(/TiC) Bulk and Foam Composites by Pyrolysis of Polycarbosilane and TiH₂ Mixtures" Adv. Eng. 19-6, pp.1600700.
- 6 Scientific paper. Gonzalez, Z.; et al. 2016. "Use of Polyelectrolytes for the Fabrication of Porous NiO Films by Electrophoretic Deposition for Supercapacitor Electrodes". Electrochim. Acta. 221, pp.110-118.
- 7 Scientific paper. Frajkorová, F.; et al. 2015. "Biodegradable bi-layered coatings shaped by dipping of Ti films followed by the EPD of gelatin/hydroxyapatite composites" J. Eur. Ceram. Soc. 36 -2, pp.343-55.
- 8 Scientific paper. Escribano, J.A.; et al. 2015. "FGM stainless steel-Ti(C,N) cermets through colloidal processing" Int. J. Refract. Metals Hard Mater. 49-1, pp.143-152.
- 9 Scientific paper. Garcia-Ayala, E.M.; et al. 2021. "Thermomechanical behaviour of WC-W₂C composites at first wall in fusion conditions" Int. J. Refract. Metal Hard Mater. 98, 105565.
- 10 Scientific paper. Neves, R.G.a; et al. 2013. "Colloidal approach for the design of Ti powders sinterable at low temperature" Mater. Letters. 107, pp.75-78. ISSN 0167577X.
- 11 Scientific paper. Parente, P.; et al. 2013. "Functionalizing Ti-surfaces through the EPD of hydroxyapatite/ Nano Y₂O₃" J. Phys Chem B. 117-6, pp.1600-1607. ISSN 15206106.
- 12 Scientific paper. Cabanas-Polo, S.a; et al. 2012. "Ni-NiO composites obtained by controlled oxidation of green compacts" Corrosion Sci. 55, pp.172-179. ISSN 0010938X.
- 13 Scientific paper. Gonzalo-Juan, I.; et al. 2010. "Colloidal processing and sintering of porous percolative Ni-YSZ layers" J. Membrane Sci. 352-1-2, pp.55-62. ISSN 03767388.
- 14 Scientific paper. Yus, J.; et al. 2019 " Electrophoretic deposition of RGO-NiO core-shell nanostructures driven by heterocoagulation method with high electrochemical performance", Electrochim Acta, 308, pp. 363-372, ISSN 00134686.
- 15 Scientific paper. Sánchez-Herencia, A.J.; Gurauskis, J.; Baudín, C.2006. "Processing of Al₂O₃/Y-TZP laminates from water-based cast tapes" Composites Part B: Engineering. 37-6, pp.499-508. ISSN 13598368.

PROJECTS

Contracts Contracts with public institutions:

1. Formulation and Sintering of Tungsten Carbide Materials with Fe And Ti as Alternative Low Activation Binders. Company: United Kingdom Atomic Energy Agency. IP: A. J. Sanchez-Herencia. 19/07/2021-31/03/2022. 70.000 €.

Contracts with companies:

1. Granulation of Fe by spray dry of slurries - Company AMES. IP: Begoña Ferrari. 01/09/2017-30/11/2017. 31.097 €.
2. Charaterization and communion of ceramic powders in aqueous suspensions to their digital use. Company: FERRO SPAIN S.A.; Ferro Enamel Española, S.A. IP: Begoña Ferrari. 08/05/2017-07/08/2017. 23.901,24 €.
3. Development of an alternative and advanteous process to fabricate whiteware throught thermal gelling. Company: ROCA RADIADORES, S.A. 01/04/2015-P1Y6M. 134.444,31 €.
4. Development of multifunctional glassy mosaic tiles. Company: HISPANO ITALIANA DE REVESTIMIENTOS, S.A. IP: Begoña Ferrari 10/04/2013-31/12/2016. 120.000 €.
5. ·Alternative Methods for the Manufacture of Porous Metallic Plates. Company AMES PM TECH CENTER, S.A. IP: Begoña Ferrari 01/01/2020-31/12/2023. 170.500 €

Projects Projects as **Principal Investigator**:

1. TED2021-129920B-C41, Eco-efficient printing of MultiMaterials for renewable H₂ generation. Funded by Spanish Ministry of Science and Innovation and EU Resilience Funds. 01/12/2022-30/11/2024, 203.205 €
2. PID2019-106631GB-C42, Additive Manufacturing of metal-ceramics composites and advanced coatings from colloidal suspensions Funded by Spanish Ministry of Science and Innovation. 01/06/2020-31/05/2023. 133.100 €.

3. 201760E038, Processing for Additive Manufacturing techniques of metal-ceramics composites and refractory alloys for severe atmosphere and temperature environments. Funded by Consejo Superior de Investigaciones Científicas. 15/02/2017-15/02/2019. 12.000 €.

4. IPT-310000-2010-012, Shielding of magnetic field. 01/06/2010-30/06/2013. Funded by Spanish Ministry of Science and Innovation. 218.256 €.

5. MAT2009-14448-C02-01, Processing by association of colloid-chemical and power-metallurgical techniques of metal-ceramic nanocomposite structures. Funded by Spanish Ministry of Science and Innovation. 01/01/2010-31/12/2012. 302.000 €. Co-ordinator.

6. MAT2006-01038, Colloidal Processing of Ceramics and Ceramic-metal (Cermet) Materials with Nanometric Structures. Funded by Spanish Ministry of Science and Innovation. 01/10/2006-01/03/2010. 124.000 €.

Project as **Team Member:**

1. P2018/NMT-4411, ADITIMAT, Additive Manufacturing: from material to application. 2019-2023. Funded by Comunidad de Madrid. 150.000 €. IP: Begoña Ferrari.

2. PCIN-2017-036 Biodegradable PLA composites reinforced with micro and nano Mg particles: optimisation of processing and design, and industrial scale-up of temporary implants. 01/12/2017-30/11/2019. Funded by M-Eranet and MINECO, 172.000 €. IP: Dra. Marcela Lieblich.

3. MAT2015-70780-C4-1-P, Tungsten metal-ceramic composites and refractory alloys for its use under severe conditions: Microstructural Design and new processing routes. 01/01/2016-31/12/2019. Funded by Ministry of Economy and Competitiveness. 98.000 €. IP: Begoña Ferrari.

4. S2013/MIT-2862, MULTIMAT Challenge Multifunctional materials for the society challenges. 2014-2017. Funded by Comunidad de Madrid. 130.000 €. IP: Begoña Ferrari.

5. MAT2012-38650-C02-02, Design of the Microstructure and the Microarchitecture of metal-ceramic materials using colloidal and powder metallurgy technologies 01/01/2013-31/12/2015. Funded by Ministry of Economy and Competitiveness. 122.850 €. IP: Begoña Ferrari.

ORGANISATIONAL SKILLS

Organisational skills Principal Investigator of three research projects coordinating teams of different institutions and a company from 7 to 10 researchers. Without the salaries of researchers the funds of the three projects were of about 500.000€.

As Deputy Vice-president I coordinated the participation execution and reporting of CSIC in different National, European and International calls. This required to me of extensive organization capabilities and gave me a wide expertise on this area.

I was the Financial Officer of CSIC with the responsibility on the periodic and final financial reports of all the projects granted for the European Union and auditor inspections.

In 2014 I took a Course on Protocol (34 hours) at the Diplomatic School of Spanish

In 2018 I took a 35 hours on line course for Management of Projects.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills I have good communicative expertise as I have presented and defended my research results in international meetings and in international institutions.

As top officer of the CSIC I have opened meetings, congress and reunions where I had limited expertise. I attended a 18 hours course for Public Presentations.

Since 2021, Academic Editor of the Scientific Journal "*Materials*"

JOB-RELATED SKILLS

Job-related skills

Co-founder in February 2020 of the Spin-off Colfeed4Print (www.colfeed.es) to transfer the results in processing functionalized filaments to be used by 3D Printers.

Included from March 2019 in the list of **scientific independent expert** for the European Parliament for Impact Assessment and European Added Value.

Technical Expert on the evaluation process (2020) for the Innovation Fund Large-scale Projects (InnovFund-LSC-2020-two-stage, budget:1.000 M€) a call of the European Commission to support enterprises to execute highly innovative projects with a significant potential to reduce greenhouse gas emissions.

Technical Expert on the evaluation process (2021) for the Innovation Fund Small-Scale Projects (InnovFund-SSC-2020-two-stage, budget:100 M€) a call of the European Commission to support enterprises to execute highly innovative projects with a significant potential to reduce greenhouse gas emissions.

PATENTS

Patents

1.- Inventors: A. Ferrández, B. Ferrari, A. J. Sanchez-Herencia, Z. González, F.J. González, J.L. Yus, J.L. González, M. Lieblich

Title: Procedure for the fabrication of samples by Fused Deposition Modeling

Number: ES 2 732 766 **Priority date:** 24-05-2018

Owners: Consejo Superior de Investigaciones Científicas (ES)

2.- Inventors: B. Ferrari, Y. Castro, A.J. Sanchez-Herencia, C. Mendoza, Z. González, M.J. Pérez, L.E. Lecue, L. San Miguel

Title: Procedure for the fabrication of fotoactive sintered ceramic coatings, coating fabricated and its uses

Number: ES2 546 891 **Publication date:** 29-09-2015 **Grant date:** 06-04-2016

Owners: Consejo Superior de Investigaciones Científicas (ES), Hispano Italiana de Revestimientos S.A. **Licensed:** HISBALIT S.A.

3.- Inventors: S. Cabanas-Polo, A.J. Sanchez-Herencia, B. Ferrari.

Title: Síntesis instantánea de alfa-Ni(OH)₂ nanométrico en disolución amoniacal/ Instant synthesis of nanometric alpha-Ni(OH)₂ in ammonia solution.

Number: ES2 402 408 **Publication date:** 03-05-2013 **Grant date:** 04-03-2014

Owners: Consejo Superior de Investigaciones Científicas (ES)

4.- Inventors: F. Lange, M. Rao, A.J. Sanchez-Herencia;ç

Title: Method for improving the reliability of brittle materials through the creation of a threshold strength

Number: US6,878,466, **Publication date:** 29-09-2000 **Grant date:** 12-04-2005

Owners: The Regents of the University of California (Oakland, CA, EE.UU)

Licensed: NAVY, SECRETARY OF THE UNITED STATES OF AMERICA,

5.- Inventors: R. Moreno, A. Millán, A.J. Sanchez-Herencia, M.I Nieto.

Title: Procedure for control ceramic and/or metallic materials by carrageenan gelling.

Number: ES 2 184 552 **Publication date:** 01-04-2003 **Grant date:** 09-07-2004

Owner: Consejo Superior de Investigaciones Científicas (ES)

6.- Inventors: A. Millán, M.I. Santacruz, C. Alberto, A.J. Sanchez-Herencia, M.I. Nieto, R. Moreno.

Title: Continuous extrusion of ceramic and metal parts consists of treatment of aqueous suspensions containing polysaccharides, for gelling as thin wall parts

Number: ES 2 192 933 **Publication date:** 16-02-2005 **Grant date:** 29-12-2004

Owner: Consejo Superior de Investigaciones Científicas (ES)