



Vera Cuartero Yagüe

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

Vera Cuartero accomplished her PhD in Physics at the Institute of Materials Science of Aragón (ICMA) in 2012. Her research is focused on the correlation of the macroscopic and microscopic properties of magnetoelectric oxides with potential applications in spintronics. This interest brought her at leading European Large Scale Facilities (neutron and synchrotron radiation sources), where she performed more than 30 experiments, which gave her a broad science perspective on advanced characterization techniques leading to collaborations with multidisciplinary groups on the study of multifunctional materials.

During her PhD, she performed the synthesis and characterization of multiferroic oxides whose properties were modified by chemical doping, leading to new materials with either improved magnetic correlations at higher temperatures or to relaxor ferroelectric properties coupled to magnetic fields, paving the way to very promising applications. The importance of this work is reflected in 2 highlighted publications where she is first author, besides 10 more indexed publications. She also performed 60 hours of collaborating teaching for experimental demonstrations for 1st course engineering bachelor students.

Right after her thesis defense, she was appointed as the first post-doctoral scientist at the X-ray Absorption Spectroscopy (XAS) beamline at the newly open ALBA Synchrotron. She was first devoted to the implementation of the new XAS-end station and its equipment. She assisted as local contact the first external group of users at the beamline. Besides, she was the acting beamline responsible during four months, being in charge of the defense of the beamline on the 16th Scientific Advisor Committee of ALBA and several beamline projects and organization tasks. She is co-author of 7 scientific papers (one as first author) that came out from the first experiments performed at the beamline.

She joined The European Synchrotron (ESRF, Grenoble, France) in 2014 to further improve her capabilities at an international environment, where she worked at two XAS beamlines (ID24 and BM23). Here she was focused on the study of the evolution of the multiferroic properties of oxides under external stimuli, such as magnetic fields and/or high pressures at low temperatures, in order to look for unexplored ways for enhancing magnetoelectricity.

Beyond that, she was involved in more than 20 experiments with international groups. Her broad experience on XAS techniques has also given her the opportunity to start an industrial collaboration with an external private company. Furthermore, she combined her research activities at the ESRF with the supervision of a Master Thesis and a stage of a PhD student during 3 months. In addition, she collaborated as a teacher for 1st course bachelor students at the University of Grenoble on the course Structure of Matter. She has been a lecturer for Master courses, and advanced Tutorials on XAS.

Since March 2018, she works as an Assistant Professor at Centro Universitario de la Defensa (Zaragoza), where she combines her teaching activities with her research at INMA (CSIC) on strongly correlated electronic oxides.

She acts as a reviewer of international indexed journals (Nature, Elsevier, APS).



General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

Citation Metrics from the ISI Web of Knowledge:

Total Peer reviewed Articles in Publication List: 34 (10 as first author), 12 conf. proceedings.

Articles on D1 Journals: 6 (1 as first author)

Articles on Q1 Journals: 14 (7 as first author)

Sum of the Times Cited: 421

h-index: 13

Last Updated: 23/02/2021

Vera Cuartero Yagüe

Surname(s): **Cuartero Yagüe**
Name: **Vera**
ORCID: **0000-0002-8021-8709**
ResearcherID: **P-2498-2014**

Current professional situation

Employing entity: Centro Universitario de la Defensa
Type of entity: University Centres and Structures and Associated Bodies
Professional category: Profesor Ayudante Doctor
City employing entity: Zaragoza, Spain
Phone: 976739858
Email: vcuartero@unizar.es
Start date: 12/03/2018
Type of contract: Temporary employment contract
Dedication regime: Full time
Primary (UNESCO code): 221110 - Electron states; 221113 - Interaction of radiation with solids; 221117 - Magnetic properties; 221191 - Solid state Physics. Spectroscopy of solid
Identify key words: Description; Structural phase transition; Structure; Synthesis

Previous positions and activities

| | Employing entity | Professional category | Start date |
|---|---|---|------------|
| 1 | European Synchrotron Radiation Facility | Junior scientist | 13/01/2017 |
| 2 | European Synchrotron Radiation Facility | Postdoctoral scientist | 13/01/2014 |
| 3 | CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL. LABORATORIO LUZ SINCROTON | Postdoctoral scientist | 01/03/2012 |
| 4 | Instituto de Ciencia de Materiales de Aragón | PhD fellow student - Beca de Formación de Profesorado Universitario (FPU) | 01/01/2008 |

- 1** **Employing entity:** European Synchrotron Radiation Facility
Professional category: Junior scientist
Start-End date: 13/01/2017 - 11/03/2018
Type of entity: Innovation and Technology Centres
Duration: 1 year - 2 months
- 2** **Employing entity:** European Synchrotron Radiation Facility
Professional category: Postdoctoral scientist
Start-End date: 13/01/2014 - 12/01/2017
Type of entity: Innovation and Technology Centres
Duration: 3 years

3



Employing entity: CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL. LABORATORIO LUZ SINCROTON

Professional category: Postdoctoral scientist

Start-End date: 01/03/2012 - 08/12/2013

Duration: 1 year - 10 months

Performed tasks: Contratada Postdoctoral en la línea BL22 del Sincrotrón ALBA (Infraestructura científico-técnica singular, Ministerio de Ciencia e Innovación).

Applicability in teaching and/or research: Explotación y puesta a punto de la óptica y la cabaña experimental de la línea de absorción y emisión de rayos X duros. Servicio a usuarios externos y desarrollo de propia línea experimental sobre el estudio de la correlación entre las propiedades magnéticas y estructurales en óxidos multifuncionales mediante el uso de la radiación sincrotrón.

- 4** **Employing entity:** Instituto de Ciencia de Materiales de Aragón **Type of entity:** University Research Institute
- Professional category:** PhD fellow student - Beca de Formación de Profesorado Universitario (FPU)
- Start-End date:** 01/01/2008 - 31/12/2011 **Duration:** 4 years
- Performed tasks:** Becaria FPU del Ministerio de Ciencia e Innovación. Síntesis y estudio de materiales multiferroicos magnetoeléctricos (óxidos de metal de transición y tierra rara) mediante técnicas macroscópicas (magnetometría squid, medidas eléctricas, calorimetría) y microscópicas en Grandes Instalaciones (reactor de neutrones y radiación sincrotrón)



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

- 1 University degree:** Higher degree
Name of qualification: Máster en Física y Tecnologías Físicas. Mark: 9.3/10
Degree awarding entity: Universidad de Zaragoza **Type of entity:** University
Date of qualification: 05/05/2009
- 2 University degree:** Higher degree
Name of qualification: Licenciado en Física. Mark: 7.2/10
Degree awarding entity: Universidad de Zaragoza **Type of entity:** University
Date of qualification: 31/07/2007

Doctorates

Doctorate programme: Doctor por la Universidad de Granada dentro del Programa en Física
Degree awarding entity: Universidad de Zaragoza **Type of entity:** University
Date of degree: 21/02/2012
Thesis title: Evolución de las propiedades multiferroicas del TbMnO₃ mediante la dilución de la subred de Mn
Thesis director: Javier Blasco Carral
Obtained qualification: Sobresaliente CUM LAUDE

Other postgraduate university studies

Postgraduate qualification: Certificado de Aptitud Pedagógica
Degree awarding entity: Universidad de Zaragoza **Type of entity:** University
Faculty, institute or centre: Instituto de Ciencias de la Educación
Date of qualification: 11/09/2009

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

- 1 Type of training:** Practical work
Training title: Workshop on diamond anvil cells for high pressure experiments
City awarding entity: Paris, France
Awarding entity: CNRS-Synchrotron Soleil
End date: 07/09/2014 **Duration in hours:** 40 hours



- 2** **Type of training:** Course
Training title: Workshop on XAS, XMCD and XMLD data analysis using CTM4XAS
City awarding entity: Barcelona, Spain
Awarding entity: CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL. LABORATORIO LUZ SINCROTON
End date: 07/06/2013 **Duration in hours:** 20 hours
- 3** **Type of training:** Course
Training title: European School on Multiferroics
City awarding entity: L'Aquila, Italy
Awarding entity: Universidad de L'Aquila **Type of entity:** University
End date: 01/10/2010 **Duration in hours:** 30 hours
- 4** **Type of training:** Course
Training title: Workshop on simulation of synchrotron radiation spectroscopies interpreted in the framework of multiple scattering approach: theory and applications
City awarding entity: Roma, Italy
Awarding entity: Laboratorio Nacional de Frascati (INFN) **Type of entity:** State agency
End date: 02/04/2010 **Duration in hours:** 30 hours
- 5** **Type of training:** Course
Training title: Higher European Research Course for Users of Large Experimental Systems
City awarding entity: Grenoble, France
Awarding entity: Université Joseph Fourier **Type of entity:** R&D Centre
End date: 04/04/2009 **Duration in hours:** 200 hours

Attended advanced, improvement and innovative teacher training and new technology courses and seminars focused on improving teaching

- 1** **Title of course/seminar:** Cuestionarios como actividad de Moodle.
Goals of the course/seminar: Al finalizar el curso los participantes serán capaces de utilizar los cuestionarios de Moodle como herramienta de evaluación formativa y sumativa.
Organising entity: Instituto de Ciencias de la Educación **Type of entity:** University Research Institute
Faculty, institute or centre: ICE - Universidad de Zaragoza
Duration in hours: 8 hours
Start-End date: 05/10/2020 - 09/10/2020
- 2** **Title of course/seminar:** Taller sobre las herramientas educativas de Google y de Microsoft
Organising entity: Centro Universitario de la Defensa (Zaragoza) **Type of entity:** University Centres and Structures and Associated Bodies
Duration in hours: 3 hours
Start-End date: 24/09/2020 - 24/09/2020
- 3** **Title of course/seminar:** POUZ. Integración de los estudiantes en la Universidad. Binomio Tutor-Mentor
Goals of the course/seminar: Coordinación Programa Tutor-Mentor. Desarrollo de Sesiones-Actividades de Tutoría-Mentoría
Organising entity: Instituto de Ciencias de la Educación **Type of entity:** University Research Institute
Faculty, institute or centre: ICE - Universidad de Zaragoza
Duration in hours: 2 hours
Start date: 09/09/2020



Language skills

| Language | Listening skills | Reading skills | Spoken interaction | Speaking skills | Writing skills |
|----------|------------------|----------------|--------------------|-----------------|----------------|
| French | B2 | C1 | B2 | B2 | B2 |
| English | C1 | C1 | C1 | C1 | C1 |
| Italian | C1 | C1 | C1 | C1 | C1 |

Teaching experience

General teaching experience

- Type of teaching:** Official teaching
Name of the course: Física I
Type of programme: Bachelor's degree **Type of teaching:** In person theory
Type of subject: Core
University degree: Grado en Ingeniería de Organización Industrial
Course given: Theory, Exercises and Laboratory
Start date: 09/2020 **End date:** 09/2021
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 180
Entity: Centro Universitario de la Defensa **Type of entity:** University Centres and Structures and Associated Bodies
City of entity: Zaragoza, Spain
Subject language: Spanish
- Type of teaching:** Official teaching
Name of the course: Física I
Type of programme: Bachelor's degree **Type of teaching:** In person theory
Type of subject: Core
University degree: Grado en Ingeniería de Organización Industrial
Course given: Theory, Exercises and Laboratory
Start date: 09/2019 **End date:** 09/2020
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 180
Entity: Centro Universitario de la Defensa **Type of entity:** University Centres and Structures and Associated Bodies
City of entity: Zaragoza, Spain
Subject language: Spanish
- Type of teaching:** Official teaching
Name of the course: Física I
Type of programme: Bachelor's degree **Type of teaching:** In person theory
Type of subject: Core
University degree: Grado en Ingeniería de Organización Industrial
Course given: Theory and Exercises
Start date: 09/2018 **End date:** 09/2019



Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 40
Entity: Centro Universitario de la Defensa

City of entity: Zaragoza, Spain
Subject language: Spanish

Type of entity: University Centres and Structures and Associated Bodies

4 **Type of teaching:** Official teaching
Name of the course: Resistencia de Materiales
Type of programme: Bachelor's degree
Type of subject: Core

University degree: Grado en Ingeniería de Organización Industrial

Course given: Theory, Exercises and Laboratory

Start date: 22/02/2018

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 195

Entity: Centro Universitario de la Defensa

City of entity: Zaragoza, Spain

Subject language: Spanish

Type of teaching: In person theory

End date: 05/06/2018

Type of entity: University Centres and Structures and Associated Bodies

5 **Type of teaching:** Official teaching
Name of the course: Structure of Matter
Type of programme: Bachelor's degree
Type of subject: Core
University degree: Licence Science and Technology

Start date: 18/09/2017

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 27

Entity: Université Grenoble Alpes

Faculty, institute or centre: Département licence sciences et technologies

City of entity: Grenoble, France

Subject language: French

Type of teaching: Practical work (classroom-problems)

End date: 01/2018

Type of entity: University

6 **Name of the course:** XAS tutorial and practicals on the Master Course "Condensed Media and Materials"
Type of teaching: In person theory

University degree: Master Functionalized Advanced Materials and Engineering

Start date: 05/12/2016

End date: 06/12/2016

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 8

Entity: Institut Polytechnique de Grenoble

City of entity: Grenoble, France

Subject language: English

Type of entity: University Research Institute

7 **Name of the course:** XAS tutorial and practicals on the Master Course "Condensed Media and Materials"
Type of teaching: In person theory

University degree: Master Functionalized Advanced Materials and Engineering

Start date: 10/12/2015

End date: 11/12/2015

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 8

Entity: Institut Polytechnique de Grenoble

Type of entity: University Research Institute



City of entity: Grenoble, France
Subject language: English

8 Name of the course: Higher European Research Course for Users of Large Experimental Systems

Type of teaching: Laboratory work

University degree: Post-graduate course

Start date: 11/03/2015

End date: 12/03/2015

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 8

Entity: Université Joseph Fourier

City of entity: Grenoble, France

Subject language: English

9 Name of the course: XAS tutorial and practicals on the Master Course "Condensed Media and Materials"

Type of teaching: In person theory

University degree: Master Functionalized Advanced Materials and Engineering

Start date: 20/11/2014

End date: 21/11/2014

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 8

Entity: Institut Polytechnique de Grenoble

Type of entity: University Research Institute

City of entity: Grenoble, France

Subject language: English

10 Name of the course: Higher European Research Course for Users of Large Experimental Systems

Type of teaching: Laboratory work

University degree: Post-graduate course

Start date: 10/03/2014

End date: 11/03/2014

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 4

Entity: Université Joseph Fourier

City of entity: Grenoble, France

Subject language: English

11 Type of teaching: Official teaching

Name of the course: Física I

Type of programme: Engineering

Type of teaching: Laboratory work

Type of subject: Obligatory

University degree: Graduado en Ingeniería de Tecnologías

Start date: 20/09/2010

End date: 18/09/2010

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 30

Entity: Centro Politécnico Superior

Type of entity: University Centres and Structures and Associated Bodies

Faculty, institute or centre: Escuela de Ingeniería y Arquitectura

Department: Física de la Materia Condensada

12 Type of teaching: Official teaching

Name of the course: Física II

Type of programme: Engineering

Type of teaching: Laboratory work

Type of subject: Obligatory

University degree: Ingeniero Químico



Start date: 20/09/2009

End date: 18/09/2010

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 30

Entity: Centro Politécnico Superior

Type of entity: University Centres and Structures and Associated Bodies

Faculty, institute or centre: Escuela de Ingeniería y Arquitectura

Department: Física de la Materia Condensada

Experience supervising doctoral thesis and/or final year projects

- 1 Project title:** Implementación de municiones inteligentes para la artillería de campaña española.
Type of project: Degree Final Project
Entity: Centro Universitario de la Defensa
Student: José Alfonso Pardo Borrego
Obtained qualification: Notable
Date of reading: 01/2021
- 2 Project title:** Material de observación a implementar en la Sección de Reconocimiento de un Batallón Acorazado y cómo adecuarlo a los sistemas de Mando y Control actuales
Type of project: Degree Final Project
Entity: Centro Universitario de la Defensa
Student: Víctor Alonso Morán
Obtained qualification: Notable
Date of reading: 01/2021
- 3 Project title:** Estudio prospectivo de materiales balísticos existentes en el mercado para la construcción de una casa de tiro que permita el realizar ejercicios de tiro con calibres de 5,56 mm y 9mm
Type of project: Degree Final Project
Entity: Centro Universitario de la Defensa
Student: Fernando Valero Otonín
Obtained qualification: Notable
Date of reading: 01/2020
- 4 Project title:** Liderazgo, mando y control de una pequeña unidad en un destacamento aislado
Type of project: Degree Final Project
Entity: Centro Universitario de la Defensa
Student: Julián Torres Marín
Obtained qualification: Aprobado
Date of reading: 01/2020
- 5 Project title:** Investigation of Multiferroic CuO under pressure by X-ray Absorption Spectroscopy.
Type of project: Master Thesis
Co-director of thesis: Vera Cuartero; Andrea Sanson
Entity: ESRF (France) and University of Padova (Italy) **Type of entity:** University Research Institute
City of entity: Grenoble, France
Student: Mourad El Idrissi
Obtained qualification: 99/110
Date of reading: 19/07/2019



- 6** **Project title:** Impacto de las medidas de conciliación familiar en la operatividad de las unidades de combate
Type of project: Degree Final Project
Entity: Centro Universitario de la Defensa
Student: Guillermo Colilla Ruyra
Obtained qualification: Aprobado
Date of reading: 09/01/2019
- 7** **Project title:** Propuestas para el diseño de refugios utilizando contenedores soterrados
Type of project: Degree Final Project
Entity: Centro Universitario de la Defensa
Student: Isabel Ortega Montilla
Obtained qualification: 8.5/10
Date of reading: 08/01/2019
- 8** **Project title:** X-ray Absorption Spectroscopic Study of Mn₅Ge₃ ferromagnetic thin films
Type of project: 3 months Stage on BM23 XAS beamline
Entity: ESRF/Institute of Physics of the Polish Academy of Sciences **Type of entity:** University Research Institute of Sciences
City of entity: Grenoble, France
Student: Roger Kalvig
Date of reading: 23/01/2016

Other activities/achievements not included above

Description of the activity: Organiser of the Introductory Course on Physics (Curso 0 - Física I). 3 hours.
Organising entity: Centro Universitario de la Defensa (Zaragoza)
End date: 09/2019

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

- 1** **Name of the project:** EXPLORANDO MECANISMOS FERROELECTRICOS IMPROPIOS PARA OXIDOS FUNCIONALES BASADOS EN PEROVSKITA
Type of project: Basic research (including archaeological digs, etc)
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
City of entity: Zaragoza/Barcelona, Aragon, Spain
Name principal investigator (PI, Co-PI...): J. Blasco; G. Subías
Nº of researchers: 9
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** Ministerio
City funding entity: Madrid, Community of Madrid, Spain
Type of participation: Team member



Start-End date: 01/01/2019 - 31/12/2022
Total amount: 72.600 €

Duration: 3 years

2 Name of the project: NUEVAS RUTAS DE SÍNTESIS PARA FAVORECER LA MAGNETOELECTRICIDAD EN POTENCIALES SENSORES.

Type of project: Basic research (including archaeological digs, etc)

Degree of contribution: Coordinator of total project, network or consortium

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

City of entity: Zaragoza, Aragon, Spain

Name principal investigator (PI, Co-PI....): V. Cuartero

Nº of researchers: 4

Funding entity or bodies:

Centro Universitario de la Defensa

Type of entity: University Centres and Structures and Associated Bodies

City funding entity: Zaragoza, Aragon, Spain

Type of participation: Principal investigator

Start-End date: 01/01/2020 - 31/12/2020

Duration: 1 year

Total amount: 5.140 €

3 Name of the project: DESARROLLO Y CARACTERIZACION CON TÉCNICAS AVANZADAS DE OXIDOS CORRELACIONADOS CON PROPIEDADES MAGNETOELÉCTRICAS

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

City of entity: Zaragoza, Aragon, Spain

Name principal investigator (PI, Co-PI....): J. Blasco; G. Subías

Nº of researchers: 7

Funding entity or bodies:

Ministerio de Economía y Competitividad

Type of participation: Team member

Start-End date: 01/01/2016 - 31/12/2018

Total amount: 83.006 €

4 Name of the project: OXIDOS FUNCIONALES: CORRELACIONES ENTRE ESTRUCTURA Y PROPIEDADES MAGNETO-ELECTRICAS

Degree of contribution: Researcher

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

City of entity: Zaragoza, Aragon, Spain

Funding entity or bodies:

Ministerio de Economía y Competitividad

Type of participation: Team member

Start-End date: 01/01/2013 - 31/12/2015

Total amount: 117.000 €

Dedication regime: Part time

5 Name of the project: Materiales zeolíticos como estructuras anfitrionas de nanopartículas. Síntesis, caracterización avanzada y aplicaciones nanotecnológicas, catalíticas y medioambientales

Degree of contribution: Researcher



Entity where project took place: CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL.
LABORATORIO LUZ SINCROTON

City of entity: Barcelona, Spain

Name principal investigator (PI, Co-PI....): F. Rey; G. Guilera

Funding entity or bodies:

Ministerio de Economía y Competitividad

Type of participation: Team member

Start-End date: 01/01/2012 - 31/12/2014

Total amount: 81.900 €

Dedication regime: Part time

Applicant's contribution: Participation on the project from 07/06/2013 until 08/12/2013 as an X-ray Absorption Spectroscopy expert. Assistance on experiments at CLAES beamline on ALBA synchrotron and data analysis interpretation.

6 Name of the project: Caracterización de materiales con radiación de sincrotrón (Grupo de Investigación de Excelencia)

Entity where project took place: Consejo Superior de Investigaciones Científicas

Type of entity: State agency

City of entity: Zaragoza, Aragon, Spain

Funding entity or bodies:

Diputación General de Aragón

Type of entity: Gobierno Autónomico

City funding entity: Zaragoza, Aragon, Spain

Type of participation: Team member

Start-End date: 01/01/2008 - 31/12/2011

Total amount: 75.337 €

Dedication regime: Full time

7 Name of the project: Estudio de las propiedades electrónicas en óxidos altamente correlacionados por medio de técnicas de radiación de sincrotrón

Entity where project took place: Consejo Superior de Investigaciones Científicas

Type of entity: State agency

City of entity: Zaragoza, Aragon, Spain

Nº of researchers: 6

Funding entity or bodies:

Ministerio de Ciencia e Innovación

Type of entity: Gob. de España

City funding entity: Madrid, Community of Madrid, Spain

Type of participation: Team member

Start-End date: 01/01/2008 - 01/01/2011

Total amount: 130.000 €

Dedication regime: Full time

R&D non-competitive contracts, agreements or projects with public or private entities

Name of the project: Iron-phosphate interactions in soil biocluster involving organic matter

Type of project: Industrial research

Degree of contribution: Researcher

Name principal investigator (PI, Co-PI....): Roberto Baigorri; Vera Cuartero; Joaquín García; Gloria Subías

Nº of researchers: 4



Participating entity/entities: ESRF, Grenoble (France); Laboratory Timac Agro, Lodosa (Spain); Universidad de Zaragoza

Funding entity or bodies:

TIMAC AGRO S.A.

Type of entity: Business

City funding entity: Lodosa, Foral Community of Navarre, Spain

Start date: 01/07/2017

Duration: 6 months

Total amount: 5.400 €

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** V. Cuartero; V. Monteseguro; A. Otero-de-la-Roza; M. El Idrissi; O. Mathon; T. Shinmei; T. Irifune; A. Sanson. Interplay between local structure, vibrational and electronic properties on CuO under pressure. *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*. 22 - 24299, 23/10/2020. Available on-line at: <<https://doi.org/10.1039/D0CP04878J>>.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes

Relevant results: Highlighted as 2020 PCCP Hot Articles.
- 2** G. Subías; J. Blasco; S. Lafuerza; V. Cuartero; M. C. Sánchez; R. Boada; S. Díaz-Moreno; F. Fauth; J. García. Relation between oxygen stoichiometry, structure and valence and spin state of Co in single-layered La_{2-x}A_xCoO_{4-d} (A=Ca, Sr) perovskites. *INORGANIC CHEMISTRY*. 59, pp. 15757. 19/10/2020. Available on-line at: <<http://dx.doi.org/10.1021/acs.inorgchem.8b00112>>.

Type of production: Scientific paper

Impact source: ISI **Category:** Chemistry, Inorganic, Nuclear

Impact index in year of publication: 4.85 **Journal in the top 25%:** Yes

Position of publication: 4 **No. of journals in the cat.:** 45

Relevant results: This is a D1 magazine
- 3** 1; M. A. Laguna-Marco; E. Arias-Egido; C. Piquer; V. Cuartero; L. Hernández-López; P. Kayser; J. A. Alonso; J. A. T. Barker; G. Fabbris; C. A. Escanhoela Jr.; T. Irifune. Magnetism of Ir⁵⁺-based double perovskites: Unraveling its nature and the influence of structure. *PHYSICAL REVIEW B*. 101, pp. 014449. 30/01/2020.

Type of production: Scientific paper

Relevant results: Highlighted as Editors' Suggestion
- 4** N. Ishimatsu; K. Yokoyama; T. Onimaru; T. Takabatake; K. Suekuni; N. Kawamura; S. Tsutsui; T. Ina; M. Mizumaki; T. Watanuki; V. Cuartero; O. Mathon; S. Pascarelli; E. Nishibori; T. Irifune. Pressure-induced collapse of the guest Eu off-centering in type-I clathrate Eu₈Ga₁₆Ge₃₀. *JOURNAL OF THE PHYS. SOC. OF JAPAN*. 88, pp. 114601. 10/10/2019.

Type of production: Scientific paper **Format:** Journal

Impact source: ISI **Category:** physics multidisciplinary

Impact index in year of publication: 1.559 **Journal in the top 25%:** No

Position of publication: 47 **No. of journals in the cat.:** 85



- 5** G. Subías; V. Cuartero; J. García; J. Blasco; S. Pascarelli. Atomic-scale mechanisms for magnetostriction in CoFe₂O₄ and La_{0.5}Sr_{0.5}CoO₃ oxides determined by differential x-ray absorption spectroscopy. PHYSICAL REVIEW B. 100, pp. 104420. 16/09/2019.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 3.575
Position of publication: 39
Category: Science Edition - PHYSICS, APPLIED
No. of journals in the cat.: 155
- 6** V. Monteseuro; J. A. Sans; V. Cuartero; F. Cova; C. Popescu; W. Olovsson; I. A. Abrikosov; H. J. M. Jönsson; G. Garbarino; S. Pascarelli; T. Irifune; D. Errandonea. Phase stability and electronic structure of iridium metal at the megabar range. SCIENTIFIC REPORTS. 9, pp. 8940. 06/2019.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 3.998
Position of publication: 17
Category: Science Edition - MULTIDISCIPLINARY SCIENCES
Journal in the top 25%: Yes
No. of journals in the cat.: 71
- 7** J. A. Sans; V. Monteseuro; G. Garbarino; M. Gich; V. Cerantola; V. Cuartero; M. Monte; T. Irifune; A. Muñoz; C. Popescu. Stability and nature of the volume collapse of eps-Fe₂O₃ under extreme conditions. NATURE COMMUNICATIONS. 9 - 4554, 11/2018.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 11.87
Position of publication: 5
Category: Multidisciplinary
Journal in the top 25%: Yes
No. of journals in the cat.: 69
Relevant results: This is a D1 magazine. This publication is selected for ESRF Highlights 2017.
- 8** J. Blasco; J. A. Rodríguez Velamazán; J. García; G. Subías; C. Piquer; V. Cuartero; M.C. Sánchez; J. Stankiewicz. Structural properties of the charge disproportionation and the magnetic order in Sr_{2/3}Ln_{1/3}FeO₃. PHYSICAL REVIEW B. 98, pp. 104422. 09/2018.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 3.73
Position of publication: 29
Category: Science Edition - PHYSICS, APPLIED
Journal in the top 25%: Yes
No. of journals in the cat.: 148
- 9** V. Cuartero; J. Blasco; G. Subías; J. García; J.A. Rodríguez-Velamazán; C. Ritter. Structural, Magnetic, and Electronic Properties of CaBaCo₄xMxO₇ (M = Fe, Zn). INORGANIC CHEMISTRY. 57 - 6, pp. 3360 - 3370. 03/2018. Available on-line at: <<http://dx.doi.org/10.1021/acs.inorgchem.8b00112>>.
Type of production: Scientific paper
Corresponding author: Yes
Impact source: ISI
Impact index in year of publication: 4.85
Position of publication: 4
Category: Chemistry, Inorganic, Nuclear
Journal in the top 25%: Yes
No. of journals in the cat.: 45
Relevant results: This is a D1 magazine
- 10** D. Ferreira Sanchez; A. S. Simionovici; L. Lemelle; V. Cuartero; O. Mathon; S. Pascarelli; A. Bonnin; R. Shapiro; K. Konhauer; D. Grolimund; P. Bleuet. 2D/3D Microanalysis by Energy Dispersive X-ray Absorption Spectroscopy Tomography. SCIENTIFIC REPORTS. 17, pp. 16453. 12/2017.
Type of production: Scientific paper
Impact source: ISI
Format: Journal
Category: sciences multidisciplinary



Impact index in year of publication: 4.12
Position of publication: 12

Journal in the top 25%: Yes
No. of journals in the cat.: 64

- 11** J. Ihli; D. Ferreira Sanchez; R.R. Jacob; V. Cuartero; O. Mathon; F. Krumeich; C. Borca; T. Huthwelker; W. -C. Cheng; Y. Y. Shu; S. Pascarelli; D. Grolimund; A. Menzel; J. A. Van Bokhoven. Localization and Speciation of Iron Impurities within a Deactivated Fluid Catalytic Cracking Catalyst. *ANGEWANDTE CHEMIE*. 56, pp. 14031. 05/09/2017.

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Chemistry (miscellaneous)

Impact index in year of publication: 12.1

Journal in the top 25%: Yes

Position of publication: 14

No. of journals in the cat.: 171

Relevant results: This publication is selected for ESRF Highlights 2017. This is a D1 magazine.

- 12** V. Cuartero; S. Lafuerza; M. Rovezzi; J. García; J. Blasco; G. Subías; E. Jiménez. X-ray absorption and emission spectroscopy study of Mn and Co valence and spin states in TbMn_{1-x}CoxO₃. *PHYSICAL REVIEW B*. 94, pp. 155117. 12/10/2016.

Type of production: Scientific paper

Format: Journal

Corresponding author: Yes

Impact source: ISI

Category: Condensed Matter Physics

Impact index in year of publication: 3.8

- 13** L. Simonelli; C. Marini; W. Olszewski; M. Avila Perez; G. Guilera; V. Cuartero; K. Klementiev. CLÆSS: The hard X-ray absorption beamline of the ALBA CELLS synchrotron. *COGENT PHYSICS*. 3, pp. 1231987. 31/08/2016.

Type of production: Scientific paper

Format: Journal

- 14** M. Blanco; P. Alvarez; C. Blanco; M. V. Jimenez; J.J. Perez-Torrente; L. A. Oro; J. Blasco; V. Cuartero; R. Menendez. Enhancing the hydrogen transfer catalytic activity of hybrid carbon nanotube-based NHC-iridium catalysts by increasing the oxidation degree of the nanosupport. *CATALYSIS SCIENCE AND TECHNOLOGY*. 96 - 6, pp. 5504. 11/07/2016.

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Science Edition - CHEMISTRY, PHYSICAL

Impact index in year of publication: 5.77

Journal in the top 25%: Yes

- 15** J. Blasco; S. Lafuerza; J. Garcia; G. Subias; V. Cuartero; J. L. Garcia Munoz; C. Popescu; I. Peral. Characterization of competing distortions in YFe₂O₄. *PHYSICAL REVIEW B*. 93, pp. 184110. 13/06/2016.

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Condensed Matter Physics

Impact index in year of publication: 3.8

- 16** M. Blanco; P. Alvarez; C. Blanco; M. V. Jimenez; J. Fernandez-Tornos; J. J. Perez-Torrente; J. Blasco; G. Subias; V. Cuartero; L. A. Oro; R. Menendez. Effect of structural differences of carbon nanotubes and graphene based iridium-NHC materials on the hydrogen transfer catalytic activity. *CARBON*. 96, pp. 66 - 74. 01/2016.

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Science Edition - CHEMISTRY, PHYSICAL

Impact index in year of publication: 6.3

Journal in the top 25%: Yes

Position of publication: 23

No. of journals in the cat.: 146



- 17** V. Cuartero; J. Blasco; G. Subias; J. Garcia; C. Meneghini; G. Aquilanti. Stability of Jahn-Teller distortion ordering in $\text{LaMn}_{1-x}\text{Sc}_x\text{O}_3$. *PHYSICAL REVIEW B*. 92 - 12, 10/09/2015.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 3.7 **Journal in the top 25%:** Yes
- 18** V. Cuartero; S. Lafuerza; G. Subias; J. Garcia; E. Schierle; J. Blasco; J. Herrero-Albillos. X-ray magnetic circular dichroism study of the magnetic anisotropy on TbMnO_3 . *PHYSICAL REVIEW B*. 91 - 16, 04/2015.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 3.7 **Journal in the top 25%:** Yes
- 19** J. Blasco; G. Subias; J. Garcia; C. Popescu; V. Cuartero. High-pressure transformation in the cobalt spinel ferrites. *JOURNAL OF SOLID STATE CHEMISTRY*. 221, pp. 173 - 177. 01/2015. ISSN 0022-4596
Type of production: Scientific paper **Format:** Journal
Impact source: ISI
Impact index in year of publication: 2.26
- 20** J. Padilla-Pantoja; J. Herrero-Martin; P. Gargiani; S. Manuel Valvidares; V. Cuartero; K. Kummer; O. Watson; N. B. Brookes; J. Luis Garcia-Munoz. Stability of the Cationic Oxidation States in $\text{Pr}_{0.50}\text{Sr}_{0.50}\text{CoO}_3$ across the Magnetostructural Transition by X-ray Absorption Spectroscopy. *INORGANIC CHEMISTRY*. 53 - 17, pp. 8854 - 8858. 09/2014.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.76 **Journal in the top 25%:** Yes
- 21** A. Bansode; G. Guilera; V. Cuartero; L. Simonelli; M. Avila; A. Urakawa. Performance and characteristics of a high pressure, high temperature capillary cell with facile construction for operando x-ray absorption spectroscopy. *REVIEW OF SCIENTIFIC INSTRUMENTS*. 85 - 8, 08/2014.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - INSTRUMENTS & INSTRUMENTATION
Impact index in year of publication: 1.6
- 22** S. Lafuerza; J. Garcia; G. Subias; J. Blasco; V. Cuartero. Strong local lattice instability in hexagonal ferrites RFe_2O_4 (R = Lu, Y, Yb) revealed by x-ray absorption spectroscopy. *PHYSICAL REVIEW B*. 89 - 4, 01/2014.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 3.7 **Journal in the top 25%:** Yes
- 23** V. Cuartero; J. Blasco; J. A. Rodriguez-Velamazan; J. Garcia; G. Subias; C. Ritter. Transitions induced by a magnetic field in slightly doped TbMnO_3 . *SOLID STATE SCIENCES*. 21, pp. 37 - 43. 07/2013.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR



Impact index in year of publication: 1.68

- 24** V. Cuartero; J. Blasco; J. Garcia; J. Stankiewicz; G. Subias; J. A. Rodriguez-Velamazán; C. Ritter. Evolution of magnetoelectric properties of Sc-diluted TbMnO₃. JOURNAL OF PHYSICS-CONDENSED MATTER. 25 - 19, 05/2013. ISSN 0953-8984
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 2.22
- 25** G. Subias; V. Cuartero; J. Garcia; J. Blasco; S. Lafuerza; S. Pascarelli; O. Mathon; C. Strohm; K. Nagai; M. Mito; G. Garbarino. Investigation of pressure-induced magnetic transitions in CoFe₃-xO₄ spinels. PHYSICAL REVIEW B. 87 - 9, 03/2013. ISSN 1098-0121
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 3.66 **Journal in the top 25%:** Yes
- 26** V. Cuartero; J. Blasco; J. Garcia; S. Lafuerza; G. Subias; J. A. Rodriguez-Velamazán; C. Ritter. Enhancement of ferromagnetic correlations on multiferroic TbMnO₃ by replacing Mn with Co. JOURNAL OF PHYSICS-CONDENSED MATTER. 24 - 45, 11/2012. ISSN 0953-8984
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 2.35
Relevant results: This publication was selected as the Cover of Journal of Physics Condensed Matter Vol. 24, Num. 45, 14 Nov 2012.
- 27** V. Cuartero; J. Blasco; J. Alberto Rodriguez-Velamazán; J. Garcia; G. Subias; C. Ritter; J. Stankiewicz; L. Canadillas-Delgado. Effects of Al substitution on the multiferroic properties of TbMnO₃. PHYSICAL REVIEW B. 86 - 10, 09/2012.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Physics - Condensed Matter Science
Impact index in year of publication: 3.77 **Journal in the top 25%:** Yes
Relevant results: This publication was highlighted as Editor's Suggestions on Physical Review B, 10 Sept 2012.
- 28** S. Lafuerza; J. Blasco; J. Garcia; G. Subias; V. Cuartero; R. I. Merino. Structural properties of Pb₂MnW_{1-x}RexO₆ double perovskites. JOURNAL OF PHYSICS-CONDENSED MATTER. 24 - 7, 02/2012. ISSN 0953-8984
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 2.35
- 29** J. Blasco; V. Cuartero; J. Garcia; J. A. Rodriguez-Velamazán. The transition from ferromagnet to cluster-glass in La_{1-x}TbxMn_{1/2}Sc_{1/2}O₃. JOURNAL OF PHYSICS-CONDENSED MATTER. 24 - 7, 02/2012. ISSN 0953-8984
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 2.56

- 30** S. Lafuerza; G. Subias; J. Garcia; S. Di Matteo; J. Blasco; V. Cuartero; C. R. Natoli. Origin of the pre-peak features in the oxygen K-edge x-ray absorption spectra of LaFeO₃ and LaMnO₃ studied by Ga substitution of the transition metal ion. JOURNAL OF PHYSICS-CONDENSED MATTER. 23 - 32, 08/2011. ISSN 0953-8984
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Condensed Matter Physics
Impact index in year of publication: 2.5
- 31** J. Blasco; S. Lafuerza; J. Garcia; G. Subias; M.C. Sanchez; V. Cuartero; J. Stankiewicz. A new type of antiferrodistortive structure in a double perovskite with Pb. DALTON TRANSACTIONS. 40 - 13, pp. 3211 - 3218. 04/2011.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 3.8 **Journal in the top 25%:** Yes
- 32** V. Cuartero; J. Blasco; J. Garcia; G. Subias; C. Ritter; J. A. Rodriguez-Velamazan. Structural effects of Sc doping on the multiferroic TbMnO₃. PHYSICAL REVIEW B. 81 - 22, 06/2010.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Physics - Condensed Matter Science
Impact index in year of publication: 3.77 **Journal in the top 25%:** Yes
- 33** J. Garcia; G. Subias; V. Cuartero; J. Herrero-Martin. On the correlation between the X-ray absorption chemical shift and the formal valence state in mixed-valence manganites. JOURNAL OF SYNCHROTRON RADIATION. 17 - 3, pp. 386 - 392. 05/2010.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - INSTRUMENTS & INSTRUMENTATION
Impact index in year of publication: 3.3 **Journal in the top 25%:** Yes
- 34** J. Garcia; G. Subias; J. Herrero-Martin; J. Blasco; V. Cuartero; M. C. Sanchez; C. Mazzoli; F. Yakhou. Reexamination of the Temperature Dependences of Resonant Reflections in Highly Stoichiometric Magnetite. PHYSICAL REVIEW LETTERS. 102 - 17, 05/2009.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Physics and Astronomy (miscellaneous)
Impact index in year of publication: 7.3 **Journal in the top 25%:** Yes
Position of publication: 6 **No. of journals in the cat.:** 71
Relevant results: This is a D1 magazine

Works submitted to national or international conferences

- 1** **Title of the work:** Combined XAS and XES study of Mn and Co valence and spin states in TbMn_{1-x}Co_xO₃.
Name of the conference: European Congress on Advanced Materials (EUROMAT)
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Thessaloniki, Greece
Date of event: 18/09/2017
End date: 22/09/2017



Organising entity: Federation of European Materials Societies (FEMS)

V. Cuartero; S. Lafuerza; M. Rovezzi; G. Subías; J. Garcia; J. Blasco; E. Jimenez.

- 2** **Title of the work:** ID24 and BM23: the time-resolved and extreme-conditions XAS beamlines at the ESRF
Name of the conference: 6th National Meeting of Portuguese Synchrotron Radiation Users
Type of event: Conference
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Lisboa, Portugal
Date of event: 19/05/2017
Organising entity: Laboratório Nacional de Energia e Geologia
V. Cuartero; S. Pascarelli; O. Mathon.
- 3** **Title of the work:** Dependence of the Jahn-Teller distortion in LaMnO₃ on the homovalent Mn-site substitution
Name of the conference: XIe Colloque Rayons X et Matière
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Grenoble, France
Date of event: 03/12/2015
Organising entity: Grenoble-MINATEC
V. Cuartero; G. Subías; J. Blasco; J. García; C. Meneghini; G. Aquilanti.
- 4** **Title of the work:** Magnetic and crystal structure of CaBaCo₃FeO₇
Name of the conference: European Conference on Neutron Scattering
Type of participation: Participatory - poster
Corresponding author: Yes
City of event: Zaragoza, Spain
Date of event: 30/08/2015
Organising entity: CSIC
V. Cuartero; J. Blasco; J. A. Rodríguez-Velamazán; G. Subías.
- 5** **Title of the work:** Local spin state study on Co-doped multiferroic TbMnO₃ by Kbeta emission spectroscopy
Name of the conference: International Conference on X-ray Absorption Fine Structure (XAFS 16)
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Karlsruhe, Germany
Date of event: 24/08/2015
End date: 28/08/2015
Organising entity: Karlsruhe Institut of Technology
Vera Cuartero; Sara Lafuerza; Mauro Rovezzi; Blasco Javier; Joaquin Garcia.
- 6** **Title of the work:** Dependence of the Jahn-Teller distortion in LaMn_{1-x}Sc_xO₃ isovalent Mn-site substitution.
Name of the conference: International Conference on X-ray Absorption Fine Structure (XAFS 16)
Type of participation: Participatory - poster
Corresponding author: Yes
City of event: Karlsruhe, Germany
Date of event: 24/08/2015
End date: 28/08/2015
Organising entity: Karlsruhe Institut of Technology

**Publication in conference proceedings:** Yes

Gloria Subías; Vera Cuartero; Blasco Javier; Joaquin Garcia; Carlo Meneghini; Giuliana Aquilanti. 712, pp. 012119. Journal of Physics: Conference Series, 2016.

- 7** **Title of the work:** Local structure of Iridium organometallic catalysts covalently bonded to carbon nanotubes.

Name of the conference: International Conference on X-ray Absorption Fine Structure (XAFS 16)

Type of participation: 'Participatory - poster

City of event: Karlsruhe, Germany

Date of event: 24/08/2015

End date: 28/08/2015

Organising entity: Karlsruhe Insitut of Technology

Publication in conference proceedings: Yes

Javier Blasco; Vera Cuartero; Gloria Subías; M. V. Jiménez; J. J. Pérez-Torrente; L.A. Oro; M. Blanco; P. Álvarez; C. Blanco; J. Fernandez Tornos; R. Menéndez. 712, pp. 012052. Journal of Physics: Conference Series, 2016.

- 8** **Title of the work:** Role of the Tb³⁺ single ion anisotropy on the magnetic properties of TbMnO₃.

Name of the conference: Condensed Matter in Paris (JMC 14 CMD 25)

Type of participation: Participatory - oral communication

City of event: Paris, France

Date of event: 25/08/2014

End date: 29/08/2014

Organising entity: Universite Paris Descartes

V. Cuartero; G. Subías; J. García; S. Lafuerza; E. Schierle; J. Blasco; J. Herrero-Albillos.

- 9** **Title of the work:** Hard and soft x-rays XAS characterization of charge ordered LuFe₂O₄

Name of the conference: International Conference on Strongly Correlated Electron Systems

Type of participation: 'Participatory - poster

City of event: Grenoble, France

Date of event: 07/07/2014

End date: 11/07/2014

Organising entity: Universite Joseph Fourier, CEA

Publication in conference proceedings: Yes

S. Lafuerza; J. Garcia; G. Subias; J. Blasco; V. Cuartero; J. Herrero-Martin. "Hard and soft x-rays XAS characterization of charge ordered LuFe₂O₄". 592, pp. 012121. Journal of Physics: Conference Series, 2015.

- 10** **Title of the work:** Tb single ion anisotropy role on multiferroic properties of TbMnO₃ at high magnetic fields.

Name of the conference: International Conference on Strongly Correlated Electron Systems (SCES)

Type of participation: 'Participatory - poster

City of event: Grenoble, Rhône-Alpes, France

Date of event: 07/07/2014

End date: 10/07/2014

Organising entity: Universite joseph Fourier, CEA

City organizing entity: Grenoble, France

J. Garcia; V. Cuartero; S. Lafuerza; G. Subias; E. Schierle; J. Blasco; J. Herrero-Albillos.

- 11** **Title of the work:** Status of BL22 - CLAESS

Name of the conference: ALBA User Meeting and VI AUSE

Type of participation: Participatory - invited/keynote talk



Corresponding author: Yes
City of event: Cerdaynola del Vallés, Spain
Date of event: 06/2013
Organising entity: ALBA Synchrotron
V. Cuartero; G. Guilera; J. Nicolás.

- 12** **Title of the work:** Magnetic dynamic effects in TbMn_{1-x}(Ga/Sc)_xO₃ samples (x=0.4, 0.5, 0.6).
Name of the conference: Joint European Magnetic Symposium 2012
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Parma, Italy
Date of event: 09/2012
Publication in conference proceedings: Yes
V. Cuartero; J. Blasco; J. García. 40, pp. 012102. European J. Phys. Conf., 2013.
- 13** **Title of the work:** Metamagnetic transition in Tb₂MnCoO₆
Name of the conference: Joint European Magnetic Symposium 2012
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Parma, Italy
Date of event: 09/2012
Publication in conference proceedings: Yes
V. Cuartero; J. Blasco; J. García. 40, pp. 15002. European J. Phys. Conf., 2013.
- 14** **Title of the work:** Evolution of Mn and Co oxidation state on TbMn_{1-x}CoxO₃ compounds
Name of the conference: International Conference on X-ray Absorption Fine Structure (XAFS 15)
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Pekín, China
Date of event: 07/2012
Publication in conference proceedings: Yes
V. Cuartero; J. García; J. Blasco; G. Subías; S. Lafuerza. 430, pp. 012102. Journal of Physics: Conference Series,
- 15** **Title of the work:** Origin of incommensurate satellite reflections on TbMnO₃ by resonant x-ray scattering."
Name of the conference: International Conference on X-ray Absorption Fine Structure (XAFS 15)
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Pekín, China
Date of event: 07/2012
Publication in conference proceedings: Yes
V. Cuartero; J. García; G. Subías; J. Blasco; J. Herrero Martín; K Hatada; M. C. Sánchez; C. Natoli. "Origin of incommensurate satellite re ections on TbMnO₃ by resonant x-ray scattering.". 430, pp. 012101.
- 16** **Title of the work:** Soft x-ray resonant scattering study below the verwey temperature in magnetite
Name of the conference: Asociación de Usuarios de Sincrotrón de España 4
Type of participation: 'Participatory - poster
City of event: Barcelona, Spain
Date of event: 09/2009
G. Subías; V. Cuartero; J. García; J. Blasco; M. C. Sánchez; J. Herrero-Martín.



- 17 Title of the work:** Study of the pressure-induced magnetic transition in magnetite and CoFe₂O₄ ferrites by x-ray magnetic circular dichroism
Name of the conference: Asociación de Usuarios de Sincrotrón de España 4
Type of participation: 'Participatory - poster
City of event: Barcelona, Spain
Date of event: 09/2009
G. Subías; V. Cuartero; J. García; J. Blasco; O. Mathon; S. Pascarelli.
- 18 Title of the work:** Effects of substituting Mn with Ga in the multiferroic properties of TbMnO₃
Name of the conference: International Conference of Magnetism
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Karlsruhe, Germany
Date of event: 07/2009
Publication in conference proceedings: Yes
V. Cuartero; J. Blasco; J. García; G. Subías; M. C. Sánchez. "Effects of substituting Mn with Ga in the multiferroic properties of TbMnO₃". 200, pp. 012024. Journal of Physics: Conference Series,
- 19 Title of the work:** Pressure-induced magnetic transition in Fe₃O₄ and CoFe₂O₄ spinels.
Name of the conference: International Conference of X-ray Absorption Spectroscopy (XAFS 14)
Type of participation: 'Participatory - poster
City of event: Camerino, Italy
Date of event: 07/2009
Publication in conference proceedings: Yes
G. Subías; V. Cuartero; J. García; J. Blasco; O. Mathon; S. Pascarelli. "Pressure-induced magnetic transition in Fe₃O₄ and CoFe₂O₄ spinels.". 190, pp. 012089. Journal of Physics: Conference Series, 2010.
- 20 Title of the work:** Resonant x-ray scattering at the forbidden re ections in Mn³⁺ perovskites REMnO₃ (RE:La and Tb).
Name of the conference: International Conference of X-ray Absorption Spectroscopy (XAFS 14)
Type of participation: 'Participatory - poster
City of event: Camerino, Italy
Date of event: 07/2009
Publication in conference proceedings: Yes
M. C. Sánchez; G. Subías; V. Cuartero; J. García; J. Blasco; J. Herrero-Martin; K. Hatada; K. Hayakawa; S. Di Matteo; C. R. Natoli. "Resonant x-ray scattering at the forbidden re ections in Mn³⁺ perovskites REMnO₃ (RE:La and Tb)". 190, pp. 012087. Journal of Physics: Conference Series, 2010.
- 21 Title of the work:** Soft resonant x-ray scattering in highly stoichiometric magnetite.
Name of the conference: International Conference of X-ray Absorption Spectroscopy (XAFS 14)
Type of participation: 'Participatory - poster
City of event: Camerino, Italy
Date of event: 07/2009
Publication in conference proceedings: Yes
G. Subías; V. Cuartero; J. García; J. Herrero-Martin; J. Blasco; M. C. Sánchez; F. Yakhou. "Resonant x-ray scattering at the forbidden re ections in Mn³⁺ perovskites REMnO₃ (RE:La and Tb)". 190, pp. 012088. Journal of Physics: Conference Series, 2010.
- 22 Title of the work:** Structural, electric and magnetic properties RE_{1/3}Sr_{2/3}FeO₃ compounds (RE = La, Pr, Nd, Gd and Eu)
Name of the conference: International Conference of Magnetism
Type of participation: 'Participatory - poster



City of event: Karlsruhe, Germany

Date of event: 07/2009

Publication in conference proceedings: Yes

J. Blasco; V. Cuartero; J. García; G. Subías; M. C. Sánchez; C. Piquer; J. Stankiewicz; J. A. Rodríguez-Velamazán; J. Herrero-Martín. "Structural, electrical and magnetic properties of RE₁/3Sr₂/3FeO₃ compounds (RE = La, Pr, Nd, Eu and Gd)". 200, pp. 012015. Journal of Physics: Conference Series, 2010.

Works submitted to national or international seminars, workshops and/or courses

- 1 Title of the work:** Combination and complementarity of Neutron Diffraction and X-ray Absorption Spectroscopies for the study of magnetic materials
Name of the event: Seminars ILL
Type of event: Seminar
Corresponding author: Yes **Reasons for participation:** Upon invitation
City of event: Grenoble, France
Date of event: 30/05/2017
Organising entity: Institut Laue Langevin
- 2 Title of the work:** Applications of X-ray absorption spectroscopy
Name of the event: ESRF User Meeting
Type of event: Course
Corresponding author: Yes **Reasons for participation:** Upon invitation
City of event: Grenoble, France
Date of event: 08/02/2016
Organising entity: ESRF
- 3 Title of the work:** Fundamentals of X-ray absorption spectroscopy
Name of the event: ESRF User Meeting
Type of event: Course
Corresponding author: Yes **Reasons for participation:** Upon invitation
City of event: Grenoble, France
Date of event: 08/02/2016
Organising entity: ESRF
- 4 Title of the work:** X ray absorption Spectroscopy on ID24 and BM23 beamlines at the ESRF.
Name of the event: ESRF-XAS Seminars
Corresponding author: Yes **Reasons for participation:** Upon invitation
City of event: Valencia, Spain
Date of event: 19/01/2016
Organising entity: Instituto de Tecnología Química **Type of entity:** State agency
- 5 Title of the work:** X-ray Absorption Spectroscopies for the Study of Multifunctional Oxides
Name of the event: ESRF Seminar
Type of event: Seminar
Corresponding author: Yes **Reasons for participation:** Speaker
City of event: Grenoble, France
Date of event: 10/09/2015
Organising entity: ESRF (European Synchrotron Radiation Facility)



- 6** **Title of the work:** Soft X-ray magnetic circular dichroism study of the magnetocrystalline anisotropy on TbMnO₃.
Name of the event: Seminar Electronic Structure and Magnetism Group Meeting
Type of event: Seminar
Corresponding author: Yes **Reasons for participation:** Speaker
City of event: Grenoble, France
Date of event: 26/03/2015
Organising entity: ESRF (European Synchrotron Radiation Facility)
- 7** **Title of the work:** On the search for enhancing multiferroic properties with doping.
Name of the event: Seminar Electronic Structure and Magnetism Group Meeting
Type of event: Seminar
Corresponding author: Yes **Reasons for participation:** Speaker
City of event: Grenoble, France
Date of event: 30/01/2014
Organising entity: ESRF (European Synchrotron Radiation Facility)
- 8** **Title of the work:** Enhancement of ferromagnetic correlations with doping on manganites
Name of the event: ESRF Seminar
Type of event: Seminar
Corresponding author: Yes **Reasons for participation:** Speaker
City of event: Grenoble, France
Date of event: 10/09/2013
Organising entity: ESRF (European Synchrotron Radiation Facility)
- 9** **Title of the work:** Status of BL22 CLAESS.
Name of the event: Scientific Advisor Comitee 16
Corresponding author: Yes **Reasons for participation:** Upon invitation
City of event: Cerdanyola del Vallés, Spain
Date of event: 17/06/2013
Organising entity: CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL. LABORATORIO LUZ SINCROTON
Vera Cuartero; Gemma Guilera; Josep Nicolás.

Other dissemination activities

- 1** **Title of the work:** El acoplamiento de la electricidad y el magnetismo en materiales funcionales: ¿una vieja o joven pareja?
Name of the event: Post on the Scientific Dissemination Blog "La Física del Grel"
Date of event: 12/07/2017
Available on-line at: <<https://lafisicadelgrel.blogspot.fr/2017/07/el-acoplamiento-de-la-electricidad-y-el.html>>.
- 2** **Title of the work:** Being a woman in science
Name of the event: Post on the ESRF General News - web page
Type of event: Media interviews
Date of event: 10/02/2017
Organising entity: ESRF - The European Synchrotron
City organizing entity: Grenoble, France
"http://www.esrf.eu/fr/home/news/general/content-news/general/being-a-woman-in-science.html". Available on-line at: <<https://lafisicadelgrel.blogspot.fr/2017/07/el-acoplamiento-de-la-electricidad-y-el.html>>.



- 3** **Title of the work:** X-ray spectroscopy at CLAES. A journey to the centre of matter
Name of the event: Beamlines Seminars
Type of event: Conferences given
Corresponding author: Yes
City of event: Cerdanyola del Vallés, Spain
Date of event: 03/05/2013
Organising entity: CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL. LABORATORIO LUZ SINCROTON
- 4** **Title of the work:** Scientific guide on ALBA Synchrotron
Name of the event: ALBA Open Day
Type of event: Fairs and exhibitions
City of event: Cerdanyola del Vallés, Spain
Date of event: 15/12/2012
Organising entity: CONSORCIO PARA CONSTRUCCION, EQUIP. Y EXPL. LABORATORIO LUZ SINCROTON
- 5** **Title of the work:** Destabilization of the multiferroic state of TbMnO₃ replacing Mn³⁺ by non-magnetic ions.
Name of the event: Reunión Anual del Dpto. de Física de la Materia Condensada
Type of event: Conferences given
City of event: Zaragoza, Spain
Date of event: 17/06/2011
Organising entity: Universidad de Zaragoza (Dpto. Física de la Materia Condensada) Vera Cuartero.
- 6** **Title of the work:** Jornada Puertas Abiertas Semana de la Ciencia
Name of the event: Semana de la Ciencia 2009
Type of event: Conferences given
City of event: Zaragoza, Spain
Date of event: 09/11/2009
Organising entity: Universidad de Zaragoza (Facultad de Ciencias) Vera Cuartero.

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

- 1** **Committee title:** Beam Time Allocation Panel for proposals - C04
Primary (UNESCO code): 221001 - Catalysis; 221007 - Electronic spectroscopy; 221028 - Solid state chemistry; 221029 - Solid state physics
Affiliation entity: ESRF - The European Synchrotron **Type of entity:** R&D Centre
City affiliation entity: Grenoble, France
Start-End date: 28/10/2020 - 30/10/2020
- 2** **Committee title:** Member of the Final Degree Projects Evaluation Panel
Affiliation entity: Centro Universitario de la Defensa **Type of entity:** University Centres and Structures and Associated Bodies
City affiliation entity: Zaragoza, Spain
Start-End date: 01/10/2019 - 04/09/2020



- 3** **Committee title:** Member of the Final Degree Project Evaluation Panel
Affiliation entity: Centro Universitario de la Defensa **Type of entity:** University Centres and Structures and Associated Bodies
City affiliation entity: Zaragoza, Spain
Start-End date: 04/09/2019 - 04/09/2019
- 4** **Committee title:** Dissertation Committee of the Doctoral Thesis of PhD candidate (Christian Wittee Lopes)
Primary (UNESCO code): 221007 - Electronic spectroscopy; 221028 - Solid state chemistry; 230399 - Other (specify)
Secondary (UNESCO code): 239100 - Environmental Chemistry
Affiliation entity: Instituto de Tecnología Química **Type of entity:** R&D Centre
City affiliation entity: Valencia, Spain
Start-End date: 13/07/2018 - 13/07/2018
- 5** **Committee title:** Member of the Doctoral Thesis Evaluation Panel of PhD candidate (Cristina Alonso-Escobar)
Primary (UNESCO code): 221007 - Electronic spectroscopy; 221028 - Solid state chemistry; 230399 - Other (specify)
Secondary (UNESCO code): 239100 - Environmental Chemistry
Affiliation entity: Instituto de Tecnología Química **Type of entity:** R&D Centre
City affiliation entity: Valencia, Spain
Start-End date: 08/09/2017 - 08/09/2017

Other achievements

Obtained grants and scholarships

- 1** **Name of the grant:** Beca para la Formación de Profesorado Universitario (FPU)
Aims: Pre-doctoral
Awarding entity: Ministerio de Ciencia e Innovación **Type of entity:** Gob. de España
Conferral date: 05/07/2008 **Duration:** 3 years - 4 months
End date: 31/12/2011
Entity where activity was carried out: Consejo Superior de Investigaciones Científicas
Faculty, institute or centre: Instituto de Ciencia de Materiales de Aragón
- 2** **Name of the grant:** Ayuda para la formación de personal investigador
Aims: Pre-doctoral
Awarding entity: Diputación General de Aragón **Type of entity:** DGA
Conferral date: 08/01/2008 **Duration:** 8 months
End date: 31/08/2008
Entity where activity was carried out: Consejo Superior de Investigaciones Científicas
Faculty, institute or centre: Instituto de Ciencia de Materiales de Aragón
- 3** **Name of the grant:** ERASMUS
City awarding entity: Naples, Italy
Aims: Pre-doctoral
Awarding entity: Gobierno de España
Conferral date: 09/2006 **Duration:** 10 months



End date: 06/2007

Entity where activity was carried out: Università degli studi di Napoli

- 4 Name of the grant:** Subvención para gastos de matrícula de estudios de doctorado
Aims: Pre-doctoral
Awarding entity: Diputación General de Aragón **Type of entity:** gob. autonómico
Conferral date: 08/01/2008 **Duration:** 1 year
Entity where activity was carried out: Universidad de Zaragoza
Faculty, institute or centre: Facultad de Ciencias

Other types of collaboration with researchers or technologists

- 1 Type of relationship:** Networks without joint project
Name principal investigator (PI, Co-PI....): V. Cuartero; M. El Idrissi; A. Sanson
Description of the collaboration: Scientific coordinator on Synchrotron Radiation Project: Investigation of the Electronic Topological Transition on Multiferroic CuO under pressure by X-ray Absorption Spectroscopy
Participating entity/entities:
The European Synchrotron - ESRF
City participating entity: Grenoble, France

University of Padova
City participating entity: Padova, Italy
Start date: 01/10/2017
- 2 Type of relationship:** Networks without joint project
Name principal investigator (PI, Co-PI....): V. Cuartero; G. Subías; J. Blasco; J. García; O. Mathon; S. Pascarelli
Description of the collaboration: Scientific coordinator on Synchrotron Radiation Project: Probing the multiferroic nature of CaBaCo4O7 by x-ray absorption spectroscopy
Participating entity/entities:
The European Synchrotron - ESRF
City participating entity: Grenoble, France

Instituto de Ciencia de Materiales de Aragón **Type of entity:** University Research Institute
City participating entity: Zaragoza, Spain
Start date: 01/03/2017 **Duration:** 1 year
- 3 Type of relationship:** Joint project networks
Description of the collaboration: COST european action (European Science Foundation)- Modern Tools for Spectroscopy on Advanced Materials
Participating entity/entities:
Researchers from 22 european countries
Start date: 01/06/2014 **Duration:** 4 years



Obtained accreditations/recognitions

- 1** **Description:** Certificación I3 (Programa de Incentivación de la Incorporación e Intensificación de la Actividad Investigadora)
Accrediting entity: Agencia Estatal de Investigación - Ministerio de Ciencia, Innovación y Universidades
Date of recognition: 16/01/2020
- 2** **Description:** Evaluacion Positiva de actividad docente e investigadora a efectos de ser contratada como PROFESOR CONTRATADO DOCTOR
Accrediting entity: Agencia Nacional de Evaluación **Type of entity:** Dir. Gral. Política Universitaria de la Calidad y Acreditación
City accrediting entity: Madrid, Spain
Date of recognition: 15/03/2019
- 3** **Description:** Evaluación Positiva Actividad Investigadora (Sexenio 2008-2013)
Accrediting entity: Agencia de Calidad y Prospectiva Universitaria de Aragón
City accrediting entity: Zaragoza, Spain
Date of recognition: 19/06/2018
- 4** **Description:** Evaluacion Positiva de actividad docente e investigadora a efectos de ser contratada como PROFESOR AYUDANTE DOCTOR
Accrediting entity: Agencia Nacional de Evaluación **Type of entity:** Dir. Gral. Política Universitaria de la Calidad y Acreditación
City accrediting entity: Madrid, Spain
Date of recognition: 11/03/2015
- 5** **Description:** Título Superior de Inglés
Accrediting entity: Escuela Oficial de Idiomas de Zaragoza
City accrediting entity: Zaragoza, Spain
Date of recognition: 07/2002