

**Part A. Personal Information**

|             |            |
|-------------|------------|
| <b>DATE</b> | 15/11/2023 |
|-------------|------------|

|                                      |                                            |                     |
|--------------------------------------|--------------------------------------------|---------------------|
| Surname(s)                           | BLANCO RODRIGUEZ                           |                     |
| Forename                             | JESUS ANGEL                                |                     |
| Social Security, Passport, ID number | 11066085A                                  |                     |
| Sex                                  | MALE                                       |                     |
| Age                                  | 59                                         |                     |
| Researcher codes                     | WoS Researcher ID (*)                      | L-6508-2014         |
|                                      | SCOPUS Author ID(*)                        | 7402723631          |
|                                      | Open Researcher and Contributor ID (ORCID) | 0000-0002-8054-1442 |

(\*) At least one of these is mandatory

**A.1. Current position**

|                                       |                                                                                           |                          |
|---------------------------------------|-------------------------------------------------------------------------------------------|--------------------------|
| Post/<br>Professional Category        | Condensed Matter Physics Professor                                                        |                          |
| UNESCO Code                           | 221118                                                                                    |                          |
| Key Words                             | Hard Condensed Matter, bulk magnetic materials and nanomagnetism, low temperature Physics |                          |
| Name of the<br>University/Institution | Department/Centre                                                                         | Physics                  |
|                                       | Full Address                                                                              | C/Calvo Sotelo s/n 33007 |
|                                       | Email Address                                                                             | jabr@uniovi.es           |
|                                       | Phone Number                                                                              | 34 985102950             |
| Start date                            | 2009 (1992)                                                                               |                          |

**A.2. Education (title, institution, date)**

| Year | University | Degree                   | Title        |
|------|------------|--------------------------|--------------|
| 1987 |            | First degree             | Physics      |
| 1990 |            | Masters (if appropriate) | Licenciatura |
| 1992 |            | PhD                      | Physics      |

**A.3. Indicators of Quality in Scientific Production (See the instructions)**

|                                                                             |
|-----------------------------------------------------------------------------|
| 5 positive evaluation periods of research activities                        |
| 9 Thesis supervised.                                                        |
| 3917 citations, around 250 citations/year last 5 years                      |
| 238 ISI-publications, over 180 papers in Q1 ranking, H-index=35 and I10=130 |

**Part B. Free Summary of CV (Max. of 3.500 characters, including spaces)**

Graduated at the University of Cantabria in 1987, I presented and defended my doctoral thesis in 1992. I am currently professor of Condensed Matter Physics at the Physics Department at the University of Oviedo, where I am developing my research and teaching activity during the last 32 years working in magnetic materials. I have also experience in low temperature Physics (liquid helium, PPMS, cryogenics and Advanced Technology liquefiers). I have also been a visiting researcher at several laboratories, including Louis Néel, LURE, ORNL, Birbeck College and ISIS-RAL. I have published more than 250 papers, 238 of them in journal that are gathered in JCR (receiving more than 3900 citations). I have also delivered several invitations talks and oral presentations at international conferences. I have been member of the scientific committee of the Laue Langevin Institut 2008-2012, member of the National Commission of Neutron Users; founder and secretary of the Spanish Magnetic Society Club, external evaluator for ANECA, ANEP, NSF, French, German and Argentine agencies of evaluation, external evaluator of the EU within the M-ERA net program and I was also participating as a member of the evaluation panel representing Spain participation at ILL and Spline in the ESRF. I have also been member of the international assessment panels at the ILL, Leon Brillouin, ESRF, NIST, and APS. I have also been member of the Spanish neutron scattering association.

Coordinator of the technical services of the University of Oviedo (2014-2017) and coordinator of the PhD Program at the Department of Physics. Coordinator of the Spanish panel in Physics and Space Science for mobility grants during 2018-2019. I am deputy director of the Department of Physics since 2021, and I have delivered more than 5000 hours of teaching lectures.

## **Part C. Relevant accomplishments**

### **C.1. Publications**

E. M Jefremovas, M. de la Fuente Rodriguez, D. Alba Venero, C. Echevarria-Bonet, P. Bender, B. Fak, J. A. Blanco, and L. F. Barquin, "Magnetic super-structure and active surface role in the onset of magnetic excitons revealed in TbCu<sub>2</sub> nanoparticles", Comm. Mat. 56 (2023) 2023-08-25

(IF= 7.8)

M. Fadel, F. J. Martin-Jimeno, M. P. Fernandez-Garcia, F. Suarez-García, J. I. Paredes, J. H. Belo, J. P. Araujo, A. Adawy, D. Martinez-Blanco, P. Alvarez-Alonso, J. A. Blanco and P. Gorria; "Untangling the role of the carbon matrix in the magnetic coupling of Ni@C nanoparticles with mixed FCC/HCP crystal structures" J. Mat. Chem. C, 10 (2023) 1798.

(IF: 7.393)

N. Rinaldi-Montes, P. Gorria, A. B. Fuertes, D. Martínez-Blanco, Z. Amghouz, I. Puente Orench, L. Olivi, J. Herrero-Martín, M. P. Fernandez, J. Alonso, M.-H. Phan, H. Srikanth, X. Marti and J. A. Blanco, "Entangled core/shell) magnetic structure driven by surface magnetic symmetry-breaking in Cr<sub>2</sub>O<sub>3</sub> nanoparticles", J. Mater. Chem. C (2022)

(IF=7.393)

E. M Jefremovas, P. Svedlinch, F. Damay, D. Alba Venero, A. Michels, J. A. Blanco, and L. F. Barquin, "Magnetic order and disorder environments in superantiferromagnetic NdCu<sub>2</sub> nanoparticles", Scientific Reports 12 (2022) 9733

(IF= 4.6)

E. M Jefremovas, M. de la Fuente Rodriguez, F. Damay, B. Fak, A. Michels, J. A. Blanco, and L. F. Barquin, "Observation of surface magnons and crystalline electric field shifts in superantiferromagnetic NdCu<sub>2</sub> nanoparticles", Phys. Rev. B 104 (2021) 134404

(IF= 3.7)

E. M Jefremovas, M. D. Rodriguez, F. Damay, B. Fak, A. Michels, J. A. Blanco, L. F. Barquin, Phys. Rev. B 104 (2021) 134404.

(IF=3.86)

M. Salaheldeen, A.M. Abu-Dief, L. Martínez-Goyeneche, S.O. Alzahrani, F. Alkhatib, P. Álvarez-Alonso, J.A. Blanco, "Dependence of the magnetization process on the thickness of Fe<sub>70</sub>Pd<sub>30</sub> nanstructured thin film", Materials 13, 5788 (2020)

(IF=3.623)

N. Rinaldi-Montes, J. González-López, A. Fernández-González, A. Jiménez, D. Martínez-Blanco, Z. Amghouz, P. Gorria, J. A. Blanco; "Lamellar Co<sub>3</sub>O<sub>4</sub> nanoparticles recycled from synthetic cobalt carbonate: core/shell morphology and magnetic properties" Ceramics International, 43 (2017) 10889-10894.

(IF: 3.057)

N. Rinaldi-Montes, P. Gorria, D. Martínez-Blanco, Z. Amghouz, A. B. Fuertes, L. Fernández Barquín, J. R. Fernández, L. Olivi, G. Aquilanti, J. A. Blanco; "Disentangling magnetic core/shell morphologies in Co-based nanoparticles" J. Materials Chemistry C, 4 (2016) 2302-2311.

(IF: 5.066)

N. Rinaldi-Montes, P. Gorria, D. Martínez-Blanco, A. B. Fuertes, L. Fernández Barquín, I. Puente-Orech, J. A. Blanco; "Scrutinizing the role of size reduction on the exchange bias and dynamic magnetic behavior in NiO nanoparticles" Nanotechnology, 26 (2016) 305705.

(IF: 3.573)

- B. Vallina, J. D. Rodríguez-Blanco, A. P. Brown, J. A. Blanco, L. G. Benning; "The role of amorphous precursors in the crystallization of La and Nd carbonates"  
Nanoscale, 7 (2015) 12166-12179 (IF: 7.760)
- A. García-Saiz, I. de Pedro, P. Migowski, O. Vallcorba, J. Junquera, J. A. Blanco, O. Fabelo, D. Sheptyakov, J. C. Waerenborgh, M. T. Fernández-Díaz; J. rius, J. Dupont, J. A. Gonzalez, J. R. Rodriguez Fernandez; "Anion-pi and Halide-halide nonbonding interactions in a new ionic based on Imidazolium cation with three-dimensional magnetic ordering in the solid state"  
Inorganic Chemistry, 53 (2014) 8384-8396. (IF: 4.820)
- N. Rinaldi-Montes, P. Gorria, D. Martínez-Blanco, A. B. Fuertes, L. Fernández Barquín, J. R. Fernández I. de Pedro, M. L. Fdez-Gubieda, J. Alonso, L. Olivi, G. Aquilanti, J. A. Blanco; "Interplay between microstructure and magnetism in NiO nanoparticles: breakdown of the antiferromagnetic order"  
Nanoscale, 6 (2014) 457-465. (IF: 7.760)
- P. Álvarez-Alonso, P. Gorria, J. L. Sánchez Llamazares, G. J. Cuello, I. Puente-Orench, J. Sánchez Marcos, G. Garbarino, M. Reiffers, J. A. Blanco; "Exploring the magneto-volume anomalies in Dy<sub>2</sub>Fe<sub>17</sub> with unconventional rhombohedral crystal structure"  
Acta Materialia, 61 (2013) 7931-7937. (IF: 5.058)
- A. Rodriguez Fernandez, J. A. Blanco, S. W. Lovesey, V. Scagnoli, U. Staub, H. C. Walker, D. K. Shukla, J. Stremper; "Chiral properties of hematite  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> inferred from Bragg resonant Bragg diffraction using circularly polarized x-rays"  
Physical Review B, 88 (2013) 094437 (IF: 3.718)
- M. P. Fernández, P. Gorria, M. Sevilla, M. P. Proença, R. Boada, J. Chaboy, A. B. Fuertes, J. A. Blanco; "Enhanced protection of carbon-encapsulated magnetic Nickel nanoparticles through a sucrose-based synthetic strategy"  
The Journal of Physical Chemistry C, 115 (2011) 5292-5300 (IF: 5.066)

## **C.2. Research Projects and Grants**

- PID2022-138256NB-C21  
Title: Seeking improved magnetocaloric materials for hydrogen liquefaction  
Financing entity: Ministerio de Ciencia, Innovación y Universidades Inv. Principal: M. Rivas (Univ. Oviedo)  
Duration, from: 01/01/2023 to: 31/12/2025 Budget: 126 k€  
Type of participation: Investigator
- AYUD/2021/51822  
Title: Advanced magnetic nanomaterials for energy and health (MAGNES).  
Financing entity: Conserjería de Economía y Empleo (Principado de Asturias) Inv. Principal: M. Rivas (Univ. Oviedo)  
Duration, from: 01/01/2021 to: 31/12/2023 Budget: 210 k€  
Type of participation: Investigator
- RTI2018-094683-B-C52  
Title: New Generation Multifunctional Martensitic Materials for Energy and Performance Applications.  
Financing entity: Ministerio de Ciencia, Innovación y Universidades  
Inv. Principal: Pedro Gorria & J. A. Blanco (Univ. Oviedo)  
Duration, from: 01/01/2019 to: 31/12/2021 Budget: 84.7 k€  
Type of participation: Principal Investigator
- IDI/2018/000185  
Title: Advanced functional nanomaterials.  
Financing entity: Conserjería de Economía y Empleo (Principado de Asturias) Inv. Principal: J. A. Blanco (Univ. Oviedo)  
Duration, from: 01/01/2018 to: 31/12/2020 Budget: 166 k€

Type of participation: Principal Investigator

- MAT2014-56116-C4-2-R

Title: Functional properties and nonequilibrium processes in shape memory alloys and related multiferroic materials.

Financing entity: MINECO Inv. Principal: Pedro Gorria & J. A. Blanco (Univ. Oviedo)

Duration, from: 01/01/2015 to: 31/12/2018 Budget: 90 k€

Type of participation: Principal Investigator

- FC-15-GRUPIN14-037

Title: Advanced magnetic materials.

Financing entity: Conserjería de Economía y Empleo (Principado de Asturias)

Inv. Principal: J. A. Blanco (Univ. Oviedo)

Duration, from: 01/01/2015 to: 31/12/2017 Budget: 160 k€

Type of participation: Principal Investigator

- MAT2011-27573-C04-02

Title: Magnetic interactions and interface phenomena in nanostructured materials.

Financing entity: MINECO Inv. Principal: Pedro Gorria (Univ. Oviedo)

Duration, from: 01/01/2012 to: 31/12/2014 Budget: 160 k€

Type of participation: Investigator

- MAT2008-0654-C04-03

Title: New tools to address size scaling in magnetic systems: selective spectroscopies and magnetometric techniques.

Financing entity: MEC Inv. Principal: Jesús A. Blanco (Univ. Oviedo)

Duración, desde: 01/01/2009 to: 30/06/2012 Budget: 388 k€

Type of participation: Principal Investigator

- MAT2002-04178-C04-01

Title: Characterization and Applications of new nanostructured materials.

Financing entity: MEC Inv. Principal: Jesús A. Blanco (Univ. Oviedo)

Duration, from: 01/01/2003 to: 31/12/2005 Budget: 115 k€

Type of participation: Principal Investigator

### **C.3. Contracts**

Title: Planta de producción y recuperación de Helio.

Financing entity: Empresa Integración y Control, S. L. Inv. Principal: Jesús A. Blanco

Duration, from: 01/01/2013 to: 31/12/2014 Budget: 96 k€

Type of participation: Principal Investigator

Title: Evaluación de las condiciones de trabajo de una planta de recuperación y licuefacción de Helio.

Financing entity: Air Liquide España, S. A. Inv. Principal: Jesús A. Blanco

Duration, from: 01/01/2013 to: 31/12/2014 Budget: 16.9 k€

Type of participation: Principal Investigator

### **C5 Editor**

- P. Gorria, J. A. Blanco, "Proceedings of the 5th Meeting of the Spanish Neutron Scattering Association (2010)", Journal of Physics: Conference Series, 325 (2011) 012001-012026.

- P. Gorria, J. A. Blanco, "Proceedings 18th ISMANAM (2011)", Journal of Alloys and Compounds, 536 (Suppl 1) (2012) S1-S585.

### **C.7 Invited talks:**

-Title: Invar properties observed in x-ray and neutron scattering

Event: 8th Meeting of the Spanish Neutron User Society (SETN-2016), UPV/EHU, 26 - 29 Junio, 2016.

- Title: Core/Shell morphology in antiferromagnetic (AFM)/Spin Glass (SG) nanostructured NiO. Event: 22th International Symposium on metastable, amorphous and nanostructured materials (ISMANAM-2015), Paris (Francia), 13 - 17 Julio, 2015.

- Title: Chiral properties of  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>  
Event: International Conference on Strongly Correlated Electron Systems (SCES-2014), Grenoble (Francia), 7 - 11 Julio, 2014.
- Title: Chiral state of BiFeO<sub>3</sub> studied by resonant x-ray Bragg diffraction  
Event: Resonant Elastic X-ray scattering (REXS2013). Oxford (Inglaterra), 15 - 19 Julio, 2013.
- Title: Circular polarized resonant x-ray scattering on Hematite single crystal.  
Event: Meeting of the Italian, Spanish and Swiss Crystallographic associations (MISCA2013), Como (Italia), 9 - 12 Septiembre, 2013.

### **C.8. Management of scientific activity**

- |                                                                                                            |                          |
|------------------------------------------------------------------------------------------------------------|--------------------------|
| -Title: 18th International symposium on metastable, amorphous and nanostructured materials, ISMANAM (2011) |                          |
| Activity type: Symposium, Role: (Co-Chair)                                                                 | Character: International |
| Dates: 26/ Junio-1 Julio/2011, Gijón                                                                       |                          |
| -Title: 2nd WORKSHOP ON McPHASE- 2012                                                                      |                          |
| Activity type: Workshop, Role: (Organizing committee)                                                      | Character: International |
| Dates: 11-14 Septiembre 2012, ILL, Grenoble (Francia)                                                      |                          |
| - Title: 3rd WORKSHOP ON McPHASE- 2013                                                                     |                          |
| Activity type: Workshop, Role: Organizing committee                                                        | Character: International |
| Dates: 4-9 Agosto 2013, HMI, Berlin (Alemania)                                                             |                          |
| Tipo de actividad: CONGRESO ICFPM19 (Comité organizador)                                                   | Character: Internacioanl |
| Dates: 28-31 Mayo 2019, Gijón                                                                              |                          |