# Joffre Gutierrez – Resume

## Personal Information


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| Address: | C/ Taquígraf Serra 24, 3-1, 08029 Barcelona Spain | |
| Contact Info. | GSM: +34 717 703 300 | E-mail: joffregr@gmail.com |
| Other | Nationality: Spanish | Date of Birth: 12 / 12 / 1976 (39 y.o.) |
| | Research info: http://orcid.org/0000-0002-8897-0276 | |


## Professional profile

Physics degree and a PhD in Material Science. 39 years old with strong track record in project planning and delivery and people mentoring. Eleven years of experience in superconductivity and vortex physics. Used to work in multicultural and multidisciplinary environments with high demanding challenges. Quick learner with a strong analytical thinking capability, and problem solving oriented through efficiency. Strong interpersonal and communication skills.

## Work Experience

**Post-doctoral researcher** at the Institute of Material Science of Barcelona, Spain (September 2016 – up to date)

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| Main responsibilities | • **Lead** the research line of superconducting coated conductors for synchrotron radiation screening.<br>• **Integrate** interdisciplinary research teams.<br>• **Secure funding** for research in national and international calls.<br>• **Publish** and **communicate** research breakthroughs. |
| Achievements | • Wrote and obtained a **research grant** (budget **125k€**) to pursue my research line in superconductivity.<br>• Participated in securing a **research project with CERN** (budget **1.2M€**). |

**Post-doctoral researcher** at the Institute of Material Science of Barcelona, Spain (February 2015 – August 2016)

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| Main responsibilities | • **Manage** two research lines (optoelectronics and thermoelectricity).<br>• **Secure funding** for research in national and international calls.<br>• **Publish** and **communicate** research breakthroughs. |
| Achievements | • Attained **expertise** in **microscopy:** scanning near field optical (probe) microscope, confocal Raman spectroscopy and micro-photoluminescence.<br>• Wrote and obtained a **research grant** (budget **67k€**) to pursue my research line in light matter interaction in semiconductors.<br>• Participated in securing a **research project Hibri**[2] on optical properties of semiconductors (budget **175k€**).<br>• **Set up new international** research groups **collaborations** (Sydney and Macquarie universities).<br>• Successfully presented a **proof of concept** for a low cost **infrared detector** based on thermoelectricity. |

**Post-doctoral researcher** at KU Leuven University, Belgium (October 2008 – January 2015)

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| Main responsibilities | • **Lead** and **manage** the nanoscale superconductivity research line.<br>• **Lead** and **coordinate** a research team.<br>• **Publish and communicate** research breakthroughs.<br>• **Secure funding** for research in national and international calls.<br>• Maintain and **expand** a **collaboration** network. |
| Achievements | • Wrote and obtained **3 research grants** (budget **250k€**) to pursue my research line in vortex interactions at the nanoscale.<br>• **Coordinate** a research team of two PhD students and itinerant last year bachelor students.<br>• Attained **expertise** in **microscopy** and **specimen preparation** techniques, Atomic and Magnetic Force microscope, High-resolution SEM and e-beam lithography, Scanning Hall probe microscope, RF/DC sputtering and molecular beam epitaxy.<br>• **Expand** a scanning Hall probe microscope in various measurements modes.<br>• Published in **high impact factor journals** and top ranked journals of the field. (Nature communications, Nature Materials and Physical Review B).<br>• Foster **collaboration** with **industry** (Magcam – Belgium).<br>• Participated in **writing** and **securing** a European COST action (budget 400K€) to, streamline **science and technology** and **promote** international **networking**. |

**Researcher** at the Institute of Material Science of Barcelona, Spain (March 2003 – September 2008)

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| Main responsibilities | • **Execute** international research projects in agreement with research line leaders.<br>• Pursue the **study** of Vortex pinning and critical currents in $YBa_2Cu_3O_{7-x}$ MOD-TFA thin films and Coated Conductors.<br>• **Publish** and **communicate** research breakthroughs. |
| Achievements | • **Designed** and **implemented** an **engineering protocol** for high current superconducting oxides' circuits.<br>• **Developed** a novel **quality control** protocol for superconducting circuits.<br>• Attained **expertise** in **characterization** and **sample preparation** techniques, including but not limited to: SEM, energy-dispersive X-ray spectroscopy, X-ray diffraction microanalysis, focused ion beam, thermal evaporation, pulsed laser deposition, optical lithography.<br>• Published in **high impact factor journals** and top ranked journals of the field. (Nature Materials and Physical Review B).<br>• Successfully **collaborated** within **academia and industry** (Nexans, Lafarga, Superpower, American Superconductor).<br>• Participated in creating two **patents**.<br>• Wrote and obtained 5 **research grants** (budget **118k€**) to pursue my research line and promote international collaborations.<br>• **Team work** in a **multidisciplinary** environment (physicists, chemists, crystallographers).<br>• **Imparted oral presentations** in scientific conferences.<br>• Foster **international collaborations** and **worked abroad** – USA and UK. |

**Teacher** at Súnion high school (2001 – 2002) (part time)

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| Main responsibilities | • **Teach mathematics** to last year high school students from humanities, arts and social sciences. |
| Achievements | • Got low motivated **students highly involved** in the subject by implementing a teaching method based on feedback and student – student interactions. |

# Education

### Academic

**PhD in Material Science**, "Vortex pinning and critical currents in $YBa_2Cu_3O_{7-x}$ MOD-TFA thin films and Coated Conductors" Universidad Autònoma de Barcelona (Spain), 2003-2008

**Physics Degree**, Universidad de Barcelona (Spain), 1998-2003

### Complementary Courses

- **Safety courses**: Cryogenics (USA 2005 and UK 2007), High voltage and high currents (USA 2005), Chemicals (Spain 2014), Flammable gases (Spain 2014), Lasers (USA 2005 and Australia 2016).
- **Cleanroom** training (Spain 2015)
- **Oral communication** course (Belgium 2010)
- Scientific **technical writing** course (Belgium 2010)

# Academic achievements

- Ample experience in **engineering and physical characterization** of materials, with strong track record in low and high temperature superconductors.
- Wide expertise in **experimental techniques** in the areas of nanofabrication, structural, optical, magnetic and electrical characterization.
- **Wrote and obtained** 10 research grants[1] with an 81% success ratio.
- **Attract funding**[1] (over **2.3M€** budget) including 10 research grants as principal investigator.
- Participated in 12 **research projects**[1]
- **Co-supervised**[2] 1 PhD student, mentored 1 PhD and 1 master student and supervised 10 last year bachelor students projects.
- 10 **invited talks**[3] and several oral and poster contributions in scientific and project meetings.
- **31 publications**[4] in peer-reviewed journals, the majority of which are in **top rank journals** of the field including three publications in journals of the Nature family. Over **1200 citations** in total and **h = 14**.
- **Two licensed patents**[4].
- **Reviewer at:** Physical Review Letters, Physical Review B, Applied Physics Letters, Physica C and Superconducting Science and Technology.
- **International** working experience[5]: Australia, USA, UK and Belgium.

## Personal skills and competences

Languages

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| Spanish, Catalan | **Native** |
| English | **Fluent** |
| Dutch | **Basic** |

Computer skills

- **Data analysis** and specific software –OriginLab, Matlab, Latex
- Knowledge in **programming**: –Matlab, Labview, COMSOL (Finite Element Modeling)
- Microsoft Office –Word, Excel, Power Point

Competences

- Strong interpersonal skills.
- Ability to work in **multicultural and multidisciplinary** environments.
- Persistent and resilient.
- Quick learner and analytical thinking.
- Communication skills, both oral and written.
- Commitment to results.
- High work capacity.

# Scientific Activity

## Obtained research grants

**1 Project name:** Ultra-high field conductors for accelerators physics – UFCAP.
**Type of grant:** Marie Curie – Cofund postdoctoral fellowship
**Budget:** 125k€
**Period:** 2016 – 2019.

**2 Project name:** Tensile strained germanium for optoelectronic devices compatible with CMOS technology.
**Type of grant:** Beatriu de Pinós postdoctoral fellowship
**Budget:** 67k€
**Period:** 2015 – 2016 (Renounced)

**3 Project name:** Type -1.5 superconductivity in multigap superconductors.
**Type of grant:** FWO postdoctoral fellowship
**Budget:** 152k€
**Period:** 2011 – 2014

**4 Project name:** Comportamiento de los vortices en sistenas híbridos nanostructurados superconductor / ferromagneto.
**Type of grant:** FECYT postdoctoral fellowship
**Budget:** 54k€
**Period:** 2008 - 2010

**5 Project name:** Comportamiento de los vortices en sistenas híbridos nanostructurados superconductor / ferromagneto.
**Type of grant:** FWO visiting postdoctoral fellowship
**Budget:** 44k€
**Period:** 2008 (Renounced)

**6 Project name:** Estudio del comportamiento de la densidad de corriente crítica a lo largo del eje-c en capas delgadas de $YBa_2Cu_3O_7$ (YBCO) crecidas mediante MOD-TFA.
**Type of grant:** FPU mobility fellowship
**Budget:** 2.2k€
**Period:** 2007

**7 Project name:** Estudio del comportamiento de la densidad de corriente crítica a lo largo del eje-c en capas delgadas de $YBa_2Cu_3O_7$ (YBCO) crecidas mediante MOD-TFA.
**Type of grant:** FPU mobility fellowship
**Budget:** 2.3k€
**Period:** 2006

**8 Project name:** Estudio de la evolución de la densidad de corriente crítica con el grosor de la cinta superconductora.
**Type of grant:** FPU mobility fellowship
**Budget:** 2.5k€
**Period:** 2005

**9 Project name:** Vortex pinning and critical currents in $YBa_2Cu_3O_{7-x}$ MOD-TFA thin films and Coated Conductors.
**Type of grant:** FPU predoctoral fellowship
**Budget:** 56k€
**Period:** 2004 – 2008

**10 Project name:** Vortex pinning and critical currents in $YBa_2Cu_3O_{7-x}$ MOD-TFA thin films and Coated Conductors.
**Type of grant:** CSIC predoctoral fellowship
**Budget:** 55k€.
**Period:** 2004 (Renounced)

## Obtained research projects

**1 Project name:** HTS Coated Conductor for FCC beam screen (HTS-FCCbs)
**Type of grant:** CERN – research grant
**Budget:** 1.2M€
**Period:** 2016 – 2019.

## Participation in R&D projects

**1 Project name:** FASTGRID: Cost effective SCFCL using advanced superconducting tapes for future HVDC grids
**Principal Investigators:** Pascal Tixador, Prof. Xavier Obradors
**Name of the program:** H2020 – NMBP-18-2016
**Code:** 721019-2 **Period:** 2017 – 2020

**2 Project name:** HTS Coated Conductor for FCC beam screen (HTS-FCCbs)
**Principal Investigators:** Teresa Puig, Francis Perez, Ilya Korolkov, Sergio Calatroni
**Name of the program:** Future Circular Collider Study
**Code:** 10811 **Period:** 2016 – 2019

**3 Project name:** ULTRAfast growth of ultrahigh performance SUPERconducting TAPEs -ULTRASUPERTAPE
**Principal Investigators:** Teresa Puig
**Name of the program:** EU ERC Advanced Grant 2014
**Code:** ERC-2014-AdG-669504-ULTRASUPERTAPE **Period:** 2015 – 2020

**4 Project name:** Híbridos de materiales orgánicos e inorgánicos para aplicaciones híbridas fotovoltaica y termoeléctrica - Hibri$^2$
**Principal Investigators:** Alejandro Goñi, Mariano Campoy
**Name of the program:** MINECO - Proyectos Excelencia y Proyectos Retos
**Code:** MAT2015-70850-P **Period:** 2016 – 2018

**5 Project name:** Tailoring electronic and phononic properties of nanomaterials: Towards ideal THERMoelectricity - nanoTHERM
**Principal Investigators:** Clivia M. Sotomayor-Torres, Alejandro R. Goñi
**Name of the program:** Consolider-Ingenio 2010
**Code:** CSD-2010-00044 **Period:** 2010 – 2016

**6 Project name:** Nanoscale Superconductivity: Novel Functionalities through Optimized Confinement of Condensate and Fields.
**Principal Investigator:** Victor Moshchalkov
**Name of the program:** EU – COST MPNS
**Code:** Action MP1201 **Period:** 2012 - 2016

**7 Project name:** Nanoscale Superconductivity, fluxonics and photonics: Adressing grand challenges.
**Principal Investigator:** Victor Moshchalkov
**Name of the program:** Methusalem
**Code:** **Period:** 2009 - 2015

**8 Project name:** Institute for Nanoscale Physics and Chemistry
**Principal Investigator:** Victor Moshchalkov
**Name of the program:** KU Leuven – Centres for Excellence
**Code:** **Period:** 2005 – 2010

**9 Project name:** Nano Engineered Superconductors for Power Applications - NESPA
**Principal Investigator:** Teresa Puig
**Name of the program:** EU: Marie Curie Research Training Networks (RTN)
**Code:** MRTN-CT-2006-035619 **Period:** 2006 – 2010

**10 Project name:** Nanoestructuración artificial de superconductores mediante procesos químicos - NANOARTIS
**Principal Investigator:** Teresa Puig
**Name of the program:** Ministerio de Educación y Ciencia
**Code:** MAT2005-02047 **Period:** 2005 – 2008

**11 Project name:** High performance nanostructured coated conductors by chemical processing - HIPERCHEM
**Principal Investigator:** Xavier Obradors
**Name of the program:** Unión Europea: 6º Programa Marco STREP
**Code:** FP6-NMP-2003-516858 **Period:** 2005 – 2008

**12 Project name:** Superconducting Coated Conductor Cable SUPER 3C
**Principal Investigator:** Xavier Obradors
**Name of the program:** Unión Europea: 6º Programa Marco STREP
**Code:** FP6-SUSTDEV-502615 **Period:** 2004 – 2008

**13 Project name:** Cintas superconductoras epitaxiales de YBCO: crecimiento mediante técnicas sol-gel, nanoestructura y transporte electrico - SUPERNANOGEL
**Principal Investigator:** Teresa Puig
**Name of the program:** Comisión Interministerial de Ciencia y Tecnología
**Code:** MAT2002-02642 **Period:** 2003 – 2005

**14 Project name:** Novelsol-gel technology for long length superconducting coated conductors - SOLSULET
**Principal Investigator:** Xavier Obradors
**Name of the program:** Comisión Interministerial de Ciencia y Tecnología
**Code:** FP5-GROWTH G5RD-CT-2001-00550 **Period:** 2001 – 2005

# Supervising experience and teaching

## PhD thesis

**Thesis title:** Scanning Hall Probe Microscopy of Superconductors with Competitive Vortex-Vortex Interactions.
**Student:** Jun Yi Ge
**Supervisors:** Victors Moshchalkov, Joffre Gutierrez
**Entity:** KU Leuven
**Date of reading:** 10/2014

**Thesis title:** Scanning Hall probe microscopy of vortex matter in single- and two-gap superconductors.
**Student:** Bart Raes
**Supervisors:** Victors Moshchalkov, Jacques Tempère
**Mentor:** Joffre Gutierrez
**Entity:** KU Leuven
**Date of reading:** 07/2013

## Master thesis

**Thesis title:** Nucleation of superconductivity in nanostructured superconductors under highly inhomogeneous magnetic fields.
**Student:** Virginia Claudio
**Supervisors:** Victors Moshchalkov, Alejandro Silhanek
**Mentor:** Joffre Gutierrez
**Entity:** KU Leuven
**Date of reading:** 2010

## Final year projects

Since 2010 I have supervised 10 final years projects of bachelor students; 8 in the field of low temperature superconductivity, and 2 in the field of inorganic semiconductors for thermoelectric applications.

# Dissemination of the scientific research

**Invited talks**

**Title:** Progress in nanostructured Coated Conductors processing and development at EUROTAPES
**Conference:** I Latin American conference on superconductivity and magnetism
**Location:** Lima, Peru **Dates:** 24/10/2016 - 28/10/2016
**Authors:** Gutierrez, J.

**Title:** Visualization of the effects of competing Vortex-Vortex interactions in superconductors
**Conference:** EBS 2013 - V Workshop on Frontiers of Superconductivity and Magnetism (V WFSM) Quo Vadis Multiband Superconductivity
**Location:** Olinda, Brazil **Dates:** 24/01/2014 - 27/01/2014
**Authors:** Gutierrez, J; Jun Yi, Ge; Raes, B; Cuppens, J; Moshchalkov, V.

**Title:** Competing Vortex-Vortex interactions in superconductors
**Conference:** IC-MSQUARE
**Location:** Prague, Czech Republic **Dates:** 01/09/2013 - 05/09/2013
**Authors:** Gutierrez, J; Jun Yi, Ge; Raes, B; Cuppens, J; Moshchalkov, V.

**Title:** Flux quantization and dynamics in the intermediate state of a Type-I superconducting film
**Conference:** 14th International Workshop on Vortex Matter in Superconductors
**Location:** Nanjing, China **Dates:** 21/05/2013 - 28/05/2013
**Authors:** Gutierrez, J; Jun Yi, Ge; Raes, B; Cuppens, J; Moshchalkov, V.

**Title:** Vortex matter in type-1.5 superconductors visualized by local probe techniques
**Conference:** III International Conference on Superconductivity and Magnetism
**Location:** Kumburgaz, Turkey **Dates:** 29/04/2012 - 04/05/2012
**Authors:** Gutierrez, J; Raes, B; Silhanek, AV; Moshchalkov, V; Zhigadlo, ND; Karpinski, J.

**Title:** Scanning Hall probe microscopy of unconventional vortex patterns in the two-gap $MgB_2$ superconductor
**Conference:** EBS 2011 - III Workshop on Frontiers of Superconductivity and Magnetism
**Location:** Porto de Galinhas, Brazil **Dates:** 14/12/2011 - 17/12/2011
**Authors:** Gutierrez, J; Raes, B; Silhanek, A; Zhigadlo, ND; Karpinski, J; Tempere, J; Moshchalkov, V.

**Title:** Anomalous vortex structure visualization in multi-bandgap $MgB_2$ superconductor
**Conference:** Eigth International Conference on Vortex Matter in Nanostructured Superconductors (VORTEX VII)
**Location:** Rhodes, Greece **Dates:** 10/09/2011 - 17/09/2011
**Authors:** Gutierrez, J; Raes, B; Silhanek, AV; Moshchalkov, V; Zhigadlo, ND; Karpinski, J.

**Title:** Vortex matter in type-1.5 superconductors
**Conference:** International Workshop on Mesoscopic Superconductivity & Vortex Imaging
**Location:** Bath, United Kingdom **Dates:** 03/05/2011 - 07/05/2011
**Authors:** Gutierrez, J; Moshchalkov, V.

**Title:** Flux pinning in MOD-TFA YBCO nanostructured films
**Conference:** V Reunión Nacional de Física del Estado Sólido - Gefes 2008
**Location:** Santiago de Compostela, Spain **Dates:** 06/02/2008 - 08/02/2008
**Authors:** Gutierrez, J; Puig, T; Llordes, A; Gibert, M; Moreno, C; Roma, N; Gazquez, J; Ricart, S; Sandiumenge, F; Mestres, N; Obradors, X.

## Oral presentations

**Title:** Visualization of the critical state formation at the microscopic level in a superconductor with periodic array of antidots
**Conference:** International Conference on Superconductivity and Magnetism
**Location:** Antalya, Turkey **Dates:** 25/04/2010 – 30/04/2010
**Authors:** J. Gutierrez, A. V. Silhanek, R. B. G. Kramer , G. W. Ataklti, J. Van de Vondel, V. V. Moshchalkov, A. Sanchez

**Title:** Turbulent to laminar vortex flow in superconductors with periodic pinning
**Conference:** Six International Conference on Vortex Matter in Nanostructured Superconductors (VORTEX VI)
**Location:** Rhodes, Greece **Dates:** 17/09/2009 – 24/09/2009
**Authors:** J. Gutiérrez, A. V. Silhanek, J. Van de Vondel, W. Gillijns, V.V. Moshchalkov

**Title:** Vortex pinning landscape in MOD-TFA YBCO nanostructured films
**Conference:** APS March meeting 2008
**Location:** New Orleans, USA **Dates:** 10/03/2008 – 14/03/2008
**Authors:** J. Gutierrez, T. Puig, A. Pomar, X. Obradors

**Title:** Vortex pinning in nanostructurated $YBa_2Cu_3O_{7-x}$-$BaZrO_3$ thin films
**Conference:** Fifth International Conference on Vortex Matter in Nanostructured Superconductors (VORTEX V)
**Location:** Rhodos, Greece **Dates:** 08/09/2007 – 14/09/2007
**Authors:** J. Gutiérrez, T. Puig, A. Llordès, A. Pomar, M. Gibert, J. Gazquéz, S. Ricart, N. Romà, F. Sandiumenge, X. Obradors

**Title:** Thickness dependence of the critical current density on MOD-TFA films
**Conference:** Applied superconductivity conference - ASC
**Location:** Seattle, Washington **Dates:** 27/08/2006 – 01/09/2006
**Authors:** J. Gutiérrez, B. Maiorov, T. Puig, J. Gázquez, N. Romà, H. Wang L. Civale, F. Sandiumenge, X. Obradors

**Title:** Quantification of random and correlated vortex pinning in YBCO coated conductors
**Conference:** Applied superconductivity conference - ASC
**Location:** Seattle, Washington **Dates:** 27/08/2006 – 01/09/2006
**Authors:** J. Gutierrez, T. Puig, X. Obradors

## Poster presentations

**Title:** C-axis critical current transport measurements on 3D nano-patterned YBCO TFA thin films
**Conference:** 8$^{th}$ European Conference on Applied Superconductivity EUCAS 2007
**Location:** Bruxelles, Belgium **Dates:** 16/09/2007 – 20/09/2007
**Authors:** J. Gutiérrez, A. Palau, J. H. Durrell, N. Romà, T. Puig, M. G. Blamire, X. Obradors

**Title:** Anclaje de vórtices en cintas superconductoras de $YBa_2Cu_3O_{7-x}$
**Conference:** IV Reunión de Física del Estado Sólido - GEFES
**Location:** Alicante, Spain **Dates:** 01/02/2006 – 03/02/2006
**Authors:** J. Gutiérrez, T. Puig, X. Obradors

**Title:** Granularity effects and pinning regimes of $YBa_2Cu_3O_{7-x}$ derived from angular-transport critical-current density measurements
**Conference:** International Workshop on Coated Conductors for Applications - CCA 2005
**Location:** Santa Fe, New Mexico, USA **Dates:** 16/10/2005 – 18/10/2005
**Authors:** J. Gutiérrez, A. Palau, T. Puig, X. Obradors

**Title:** Vortex pinning regimes on $YBa_2Cu_3O_{7-x}$ coated conductors derived from inductive and angular-transport critical-currents density results
**Conference:** 7$^{th}$ European Conference on Applied Superconductivity - EUCAS 2005
**Location:** Wien, Austria **Dates:** 11/09/2005 – 15/09/2005
**Authors:** J. Gutierrez, A. Palau, T. Puig, X. Obradors

**Title:** Transport properties of $YBa_2Cu_3O_7$ coated conductors: grain boundary and grain vortices behaviour
**Conference:** 2005 MRS spring meeting
**Location:** San Francisco, CA, USA **Dates:** 28/03/2005 – 01/04/2005
**Authors:** J. Gutiérrez, A. Palau, T. Puig, X. Obradors, L. Fernández, B. Holzapfel A. Usoskin, H. C. Freyhardt

**Title:** Low angle grain boundary influence on transport properties of $YBa_2Cu_3O_{7-x}$ coated conductors
**Conference:** 7th international conference on spectroscopy in novel superconductors
**Location:** Sitges, Spain **Dates:** 11/07/2004 – 16/07/2004
**Authors:** J. Gutierrez, T. Puig, X. Obradors, L. Fernández, B. Holzapfel

**Title:** Influencia de las fronteras de grano de bajo ángulo en el transporte eléctrico de cintas superconductoras de YBCO
**Conference:** III Reunión Nacional de Física del Estado Sólido - GEFES
**Location:** San Sebastian, Spain **Dates:** 02/06/2004 – 04/06/2004
**Authors:** J. Gutierrez, T. Puig, X. Obradors, L. Fernández, B. Holzapfel

# Publication list

**Peer reviewed journals**
Citation metrics (Google scholar)

Total peer reviewed articles in Publication List: **31**
Sum of the Times Cited: 1215
h-index: 14

1 Ge JY, Gutierrez J, Gladilin VN, Devreese JT, Moshchalkov VV: Bound vortex dipoles generated at pinning centres by Meissner current. **Nature Communications**, 6 (2015). **IF: 10.742**

2 Gladilin VN, Ge J, Gutierrez J, Timmermans M, Van de Vondel J, Tempere J, Devreese JT, Moshchalkov VV: Vortices in a wedge made of a type-I superconductor. **New Journal of Physics**, 17 (2015). **IF: 3.570**

3 Ge J, Gutierrez J, Li J, Yuan J, Wang H-B, Yamaura K, Takayama-Muromachi E, Moshchalkov VV: Dependence of the flux-creep activation energy on current density and magnetic field for a $Ca_{10}(Pt_3As_8)[(Fe_{1-x}Pt_x)_2As_2]_5$ single crystal. **Applied Physics Letters**, 104 (2014). **IF: 3.515**

4 Ge J-Y, Gutierrez J, Lyashchenko A, Filipov V, Li J, Moshchalkov VV: Direct visualization of vortex pattern transition in ZrB12 with Ginzburg-Landau parameter close to the dual point. **Physical Review B**, 90 (2014). **IF: 3.664**

5 Ge J, Gutierrez J, Cuppens J, Moshchalkov VV: Quantification of the flux tubes and the stability of stripe pattern in the intermediate state of a type-1 superconducting film. **Physica C: Superconductivity**, 503 (2014). **IF: 1.110**

6 Gutierrez J, Raes B, Van de Vondel J, Silhanek AV, Kramer RBG, Ataklti GW, Moshchalkov VV: First vortex entry into a perpendicularly magnetized superconducting thin film. **Physical Review B**, 88 (2013). **IF: 3.664**

7 Ge J, Gutierrez J, Raes B, Cuppens J, Moshchalkov VV: Flux pattern transitions in the intermediate state of a type-I superconductor driven by an ac field. **New Journal of Physics**, 15 (2013). **IF: 3.673**

8 Ge J, Gutierrez J, Cuppens J, Moshchalkov VV: Observation of single flux quantum vortices in the intermediate state of a type-I superconducting film. **Physical Review B**, 88 (2013). **IF: 3.664**

9 Ge J, Gutierrez J, Li J, Yuan J, Wang H-B, Yamaura K, Takayama-Muromachi E, Moshchalkov VV: Peak effect in optimally doped p-type single-crystal $Ba_{0.5}K_{0.5}Fe_2As_2$ studied by ac magnetization measurements. **Physical Review B**, 88 (2013). **IF: 3.664**

10 Ge J, Gutierrez J, Li M, Zhang J, Moshchalkov VV: Vortex phase transition and isotropic flux dynamics in $K_{0.8}Fe_2Se_2$ single crystal lightly doped with Mn. **Applied Physics Letters**, 103 (2013). **IF: 3.515**

11 Raes B, Van de Vondel J, Silhanek AV, de Souza Silva CC, Gutierrez J, Kramer RBG, Moshchalkov VV: Local mapping of dissipative vortex motion. **Physical Review B**, 86 (2012). **IF: 3.767**

12 Llordes A, Palau A, Gazquez J, Coll M, Vlad R, Pomar A, Arbiol J, Guzman R, Ye S, Rouco V, Sandiumenge, F., Ricart, S, Puig, T, Varela, M, Chateigner, D, Vanacke, J, Gutierrez, J, Moshchalkov, V, Deutscher, G, Magen, C, Obradors, X: Nanoscale strain-induced pair suppression as a vortex-pinning mechanism in high-temperature superconductors. **Nature materials**, 11 (2012). **IF: 35.749**

13 Gutierrez J, Raes B, Silhanek AV, Li LJ, Zhigadlo ND, Karpinski J, Tempere J, Moshchalkov VV: Scanning Hall probe microscopy of unconventional vortex patterns in the two-gap $MgB_2$ superconductor. **Physical Review B**, 85 (2012). **IF: 3.767**

14 Ge J, Gutierrez J, Raes B, Watanabe T, Koshio J, Moshchalkov V: Two energy gaps in superconducting $Lu_2Fe_3Si_5$ single crystal derived from the temperature dependence of lower critical field $H_{c1}$ (T). **Physica C: Superconductivity**, 478 (2012). **IF: 0.718**

15 Silhanek AV, Gutierrez J, Kramer RBG, Ataklti GW, de Vondel JV, Moshchalkov VV: Microscopic picture of the critical state in a superconductor with a periodic array of antidots. **Physical Review B**, 83 (2011). **IF: 3.691**

16 Moreno C, Munuera C, Perez del Pino A, Gutierrez J, Puig T, Ocal C, Obradors X, Ruyter A: Absence of self-heated bistable resistivity in $La_{0.7}Sr_{0.3}MnO_3$ films up to high current densities. **Physical Review B**, 80 (2009). **IF: 3.475**

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## Book chapters

*1* ***Title***: Flux Pinning and AC Loss Studies on YBCO Coated Conductors

***Authors***: X. Obradors; T. Puig; A. Pomar; F. Sandiumenge; S. Pinol; N. Mestres; O. Castano; A. Cavallaro; A. Palau; J. Gazquez; J.C. Gonzalez; J. Gutierrez; N. Roma; S. Ricart; J.M. Moreto; M.D. Rossell; G. van Tendeloo

***Pages***: 171-204

***Publisher***: Nova Science Publishers

***Year***: 2007

## Patents

1 ***Title English***: Superconducting nanostructured material type $REBa_2Cu_3O_7$ (RE= Rare Earth or Yttrium) with a high density of pinning centers and its preparation method

***Original title***: Material superconductor nanoestructurado tipo $REBa_2Cu_3O_7$ (RE=Tierra Rara o Ytrio) con una elevada densidad de centros de anclaje de vórtices y su método de preparación

***Authors***: Xavier Obradors Berenguer; Teresa Puig Molina; Susana Ricart; Alberto Pomar; Felip Sandiumenge; Narcis Mestres; Anna Llordes; Marta Gibert; Joffre Gutierrez; Jaume Gazquez; Neus Roma.

***Entity holder of rights***: Consejo Superior de Investigaciones Científicas

***Nº of application***: 200603172

***Country of inscription***: Spain

***Date of register***: 14/12/2006

***Companies***: OXOLUTIA S.L

2 ***Title English***: Multilayered superconducting tapes grown by chemical solution deposition

***Original title***: Cintas superconductoras multicapas preparadas mediante deposición de soluciones químicas

***Authors***: Xavier Obradors Berenguer; Teresa Puig Molina; Felip Sandiumenge; Salvador Piñol; Narcis Mestres; Alberto Pomar; Oscar Castaño; Andrea Cavallaro; Mariona Coll; Jaume Gazquez; Juan Carlos Gonzalez; Joffre Gutierrez; Anna Palau; Awatef Hassini

***Entity holder of rights***: Consejo Superior de Investigaciones Científicas

***Nº of application***: 200500702

***Country of inscription***: Spain

***Date of register***: 23/03/2005

***Companies***: OXOLUTIA S.L

# Stays abroad

**1 Entity:** The University of Sydney **Place:** Sydney (Australia)
**Start-End date:** 15/02/2016 - 17/05/2016 **Duration:** 3 months
**Goals of the stay:** Raman spectroscopy study of tensile strained germanium bridges

**2 Entity:** KU Leuven **Place:** Leuven (Belgium)
**Start-End date:** 01/10/2008 - 31/01/2015 **Duration:** 6 years and 4 months
**Goals of the stay:** Study of vortex dynamics and vortex interactions at the nanoscale in superconducting systems.

**3 Entity:** Cambridge University **Place:** Cambridge (United Kingdom)
**Start-End date:** 01/07/2007 - 01/10/2007 **Duration:** 3 months
**Goals of the stay:** Study the c-axis dependence of critical currents in YBCO-MOD films

**4 Entity:** Cambridge University **Place:** Cambridge (United Kingdom)
**Start-End date:** 01/07/2006 - 15/09/2006 **Duration:** 2 months and a half
**Goals of the stay:** Study the c-axis dependence of critical currents in YBCO-MOD films

**5 Entity:** Los Alamos national laboratory **Place:** Los Alamos (USA)
**Start-End date:** 17/10/2005 - 23/12/2005 **Duration:** 2 months and a week
**Goals of the stay:** Study the thickness dependence of critical current in YBCO - MOD films