CURRÍCULUM VÍTAE NORMALIZADO

Hermann Suderow Rodriguez

Generated from: Editor CVN de FECYT

Date of document: 22/07/2024

v 1.4.3

2af278c7cc7cafeb28fff8554962856b

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

FECYT INNOVACIÓN

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.

I made my PhD in Grenoble (1997, supervisors J. Flouquet and J.P. Brison), where I performed thermal conductivity measurements in the superconducting phases of UPt3 down to 15 mK. I discovered an increase of the density of states with the magnetic field, which has been widely used to study other superconductors as cuprates. In 1998, I started working at the low temperature laboratory of the Universidad Autónoma de Madrid (UAM) with a Marie Curie contract, supervised by S. Vieira, and I obtained a Ramón y Cajal tenure track position on 2000. In 2006 I tenured (prof titular), after winning a habilitation contest and since 2019 I am full prof (catedrático) at UAM. I have pioneered scanning tunneling microscopy (STM) in 3He-4He dilution refrigerators and set-up one of the few laboratories worldwide where several dilution refrigerator STMs are operated simultaneously.

During my work as a researcher, I have built or supervised the construction of numerous instruments, including operational STM electronics (10 units), superconducting persistent switch vectorial magnets (3 units), data acquisition and control units, cryogenic systems or STMs for very low temperatures. I have lead collaborations and partnerships with the private sector, including SME as well as large companies and numerous other small size collaborations. Recently, I have taken a keen interest in the zero-e project of Airbus and related industries. The project requires the establishment of a new wide-spread industrial use of liquid hydrogen at 20 K, presenting an enormous opportunity for low temperature physics.

Millikelvin STM provides neat images (free of thermal noise) of electronic correlations, disorder and the real space atomic structure. We have studied numerous superconducting materials, often obtaining results just a few weeks after the discovery of superconductivity. For example, in MgB2, our results provided the thread to establish the theory of two-band superconductivity. We contributed to understand superconductivity with spin and charge density waves, thanks to results in the nickel borocarbides, in ferromagnetic superconductors and in transition metal dichalcogenides. We obtained new vortex physics in iron-based superconductors and, most recently, we showed a new correlated surface state and studied its interaction with the bulk.

130 publications, more than 60 invited contributions to international meetings, 3 patents, 6 contracts with companies. 4 sexenios de investigación until 2017. 2991 total citations, 2373 without self-citations (3941 in scholar). 226 citations per year in the last 5 years (298 in scholar). 1 Nature, 2 Nat Phys, 2 Nat Com, 9 PRL, 3 Comm Phys, 2 Nanolett, 6 PRR, 30 PRB, 4 NJP, 4RSI, 4 Superc Sci Tec., 9 Physica C, 4 JLTP, 1 perspective in Science. H-index 32 (35 in scholar). 11 PhD thesis and participation in more than 20 PhD thesis juries. Chair of two COST Actions (nanocohybri and superqumap), PI of 14 projects (of these 2 ACI and 9 plan estatal), co-PI in 2 Marie Curie projects, organizer of major international conferences or summer schools. Co-organizer of cmd2020gefes, Vortex 2015, Quantum materials school, Superconductivity meets molecular spins, N. Cabrera Summer School, Low dimensional superconducting hybrids for novel quantum functionalities, Young investigators workshop on heavy fermion superconductivity and ongoing meetings of superqumap.eu. Program Committee in LT28 and in LT29, Chair

of LT30. Co-organizer of symposium “Topology in condensed matter physics” in Berlin 2018 DPG-EPS meeting. ICM 2015 Programme committee.
Physics committee of the Spanish research agency, chair, “gestor” from 2015 to 2018. Director of the Nicolás Cabrera Institute from 2011 to 2020, leading a transformational change in the Institute. Materials and infrastructure coordinator of IFIMAC, scientific counselor of segainvex, member of commissions and panels (C5 commission of IUPAP, ANEP, GEFES-RSEF, ACSUCYL, UNIBasq), Referee of funding agencies (ERC StG, AdG, AEI, Pathfinder, DFG, Caixa, EPSRC, etc). Fellow APS 2017. Participant in setting up superfluid demonstration experiments shown at prime time in Spanish TV. Liquid helium dissemination experiments. Co-organizer of open lab days for school visitors. Co-author of one book about superconductivity for teenagers (soon translated to German, Spanish and English).

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.

5 "sexenios de investigación", until 2023.
12 co-directed PhD (2024, 2023, 2021, two in 2017, 2016, two in 2013, 2009 and 2006).
3112 cites, 2494 without self-cites (4150 in scholar).
232 cites/year average during past 5 years.
1 Nature, 2 Nat Phys, 1 Nat Com, 2 Phys. Com, 9 PRL, 28 PRB, 4 NJP, 3 Superc Sci Tec. 1 perspective in Science.
h index of 33 (35 in scholar).

Hermann Suderow Rodriguez

Surname(s):	**Suderow Rodriguez**
Name:	**Hermann**
ORCID:	**0000-0002-5902-1880**
ScopusID:	**7003666360**
ResearcherID:	**L-6612-2013**
Scholar:	**https://scholar.google.es/citations?user=Ei1OhusAAAAJ&hl=en**
Date of birth:	**02/09/1970**
Gender:	**Male**
Nationality:	**Germany**
Country of birth:	**Spain**
Email:	**hermann.suderow@uam.es**
Personal web page:	**http://www.uam.es/hermann.suderow**

Current professional situation

Employing entity: Universidad Autónoma de Madrid
Department: Fisica de la Materia Condensada, Facultad de Ciencias
Professional category: Catedrático de Universidad
Start date: 01/08/2019
Type of contract: Civil servant **Dedication regime:** Full time
Primary (UNESCO code): 221127 - Superconductors
Secondary (UNESCO code): 220208 - Magnetism
Performed tasks: I am interested in the direct real space visualization of vortices in superconductors and other spatially varying features of low dimensional metals and magnets. I have designed and built scanning tunneling microscopes, which we operate at temperatures of 30 mK in helium3-helium4 dilution refrigerators and under magnetic fields. Using one of these microscopes, I measured the superconducting gap in a heavy fermion superconductor, pioneering scanning tunneling microscopy in dilution refrigerators. Our laboratory (lbtuam.es) runs now five of these machines. We study the vortex lattice of superconductors, the electronic properties of 2D and heavy fermion superconductors and nanostructured systems. Recently, we introduced crystal growth techniques to make samples for our own studies. Since a few years I am also charged of several organizational activities. Among others, I have been director of the N. Cabrera Institute during 8 years and support UAM's technical staff in running our helium liquefier and recovery system, which serves many groups in the whole Campus. I also have active collaborations with industry, with 8 contracts of, in all, more than 200 000 euros since 2021.
Identify key words: Kondo models; Quantum criticality; Magnetism; Superconductors

Previous positions and activities

	Employing entity	Professional category	Start date
1	Universidad Autónoma de Madrid	Profesor Titular de Universidad	01/06/2006
2	Universidad Autónoma de Madrid	Position as a lecturer qualified within program I3 of the spanish national science funding organization	2005

	Employing entity	Professional category	Start date
3	Universidad Autónoma de Madrid	"Ramon y Cajal" Fellow of the spanish national science funding organization	2001
4	Instituto de Ciencia de Materiales de Madrid	CSIC Postdoctoral fellow	2000
5	Universidad Autónoma de Madrid	Marie Curie Postdoctoral Fellow of the European Union	01/01/1998
6	CEA and CNRS	PhD Fellow (CEA grant)	01/01/1994
7	Uni Karlsruhe - CEA, Grenoble Francia	Diplomarbeit	01/01/1993

1 **Employing entity:** Universidad Autónoma de Madrid **Type of entity:** University
Professional category: Profesor Titular de Universidad
Start-End date: 01/06/2006 - 31/07/2019

2 **Employing entity:** Universidad Autónoma de Madrid **Type of entity:** University
Professional category: Position as a lecturer qualified within program I3 of the spanish national science funding organization
Start-End date: 2005 - 2006

3 **Employing entity:** Universidad Autónoma de Madrid **Type of entity:** University
Professional category: "Ramon y Cajal" Fellow of the spanish national science funding organization
Start-End date: 2001 - 2005

4 **Employing entity:** Instituto de Ciencia de Materiales de Madrid **Type of entity:** State agency
Professional category: CSIC Postdoctoral fellow
Start-End date: 2000 - 2001 **Duration:** 1 year

5 **Employing entity:** Universidad Autónoma de Madrid **Type of entity:** University
Professional category: Marie Curie Postdoctoral Fellow of the European Union
Start-End date: 01/01/1998 - 31/12/1999 **Duration:** 2 years

6 **Employing entity:** CEA and CNRS
Professional category: PhD Fellow (CEA grant)
Start-End date: 01/01/1994 - 31/12/1998

7 **Employing entity:** Uni Karlsruhe - CEA, Grenoble Francia
Professional category: Diplomarbeit
Start-End date: 01/01/1993 - 01/12/1993

Education

University education

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

University degree: Doctorate
Name of qualification: Physics (Diplom-Physik equivalent to Master in Physics or Licenciado en Física)
City degree awarding entity: Germany
Degree awarding entity: Universität Karlsruhe **Type of entity:** University
Date of qualification: 05/01/1994
Foreign qualification: Diplom Physik (Msc in Physics)

Doctorates

Degree awarding entity: Université Joseph Fourier **Type of entity:** University
City degree awarding entity: Grenoble, France
Date of degree: 05/11/1997
Thesis title: Conduction Thermique des phases suprconductrices de UPT3
Thesis director: Jacques Flouquet
Obtained qualification: Très Honorable avec felicitations

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	C1	C1	C1	C1	C1
French	C2	C2	C2	C2	C2
German	C2	C2	C2	C2	C2
Spanish	C2	C2	C2	C2	C2

Teaching experience

General teaching experience

1 **Name of the course:** Experimental techniques IV
University degree: Graduate Physics (licenciatura)
Start date: 2000 **End date:** 2012
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

2 **Name of the course:** Física de Bajas Temperaturas.
University degree: Graduate Physics (licenciatura)
Start date: 2001 **End date:** 2011
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

3 **Name of the course:** Física Avanzada de Bajas Temperaturas
University degree: Doctoral studies (curso de doctorado)
Start date: 2002 **End date:** 2008
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

4 **Name of the course:** Solid State Physics
University degree: Graduate physics (licenciatura)
Start date: 2003 **End date:** 2004
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

5 **Name of the course:** Physics
University degree: Physics for first year Biology
Start date: 1994 **End date:** 1996
Entity: University of Savoie, France **Type of entity:** University
Faculty, institute or centre: Science

6 **Name of the course:** Low Temperature Physics
University degree: Master Condensed Matter and Bio systems, http://www.masternanobio.es/
Start date: 2015
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

7 **Name of the course:** TFG-EXP, Coordinador del laboratorio avanzado del grado (4 Física)
University degree: Physics
Start date: 2015
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

8 **Name of the course:** Experimental techniques (advanced)
University degree: Graduate Physics (grado)
Start date: 2013
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

9 **Name of the course:** Modern Physics
University degree: General physics, 2nd year physics, chemistry and engineering
Start date: 2012
Entity: Universidad Autónoma de Madrid **Type of entity:** University

10 **Name of the course:** Advanced low temperature physics
University degree: Master degree Condensed Matter Physics and Nanotechnology
Start date: 2011
Entity: Universidad Autónoma de Madrid **Type of entity:** University

Faculty, institute or centre: Facultad de Ciencias

11 **Name of the course:** Superconductivity and superfluidity
University degree: Master degree Condensed Matter Physics and Nanotechnology (www.fmcyn.es).
Start date: 2009
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias

12 **Name of the course:** Stat Phys, Nanophysics, etc
University degree: Physics
Start date: 01/01/2006
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Faculty, institute or centre: Ciencias

13 **Name of the course:** Scanning microscopy
University degree: Advanced Cryogenics School
Start date: 2005

14 **Name of the course:** Growth and characterization of new materials, together with PC Canfield
University degree: Master and graduate physics

Experience supervising doctoral thesis and/or final year projects

1 **Project title:** Iron based superconductors under the microscope
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Marta Fernández Lomana
Date of reading: 01/02/2024

2 **Project title:** PhD thesis: Atomic scale quantization and charging eects in topological semimetals
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Raquel Sanchez Barquilla
Date of reading: 02/02/2023

3 **Project title:** PhD thesis:SCANNING TUNNELING SPECTROSCOPY OF SUPERCONDUCTORS CLOSE TO A QUANTUM CRITICAL POINT AND AT MAGNETIC IMPURITIES
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Victor Barrena Escolar
Date of reading: 23/03/2022

4 **Project title:** PhD thesis:VISUALIZATION OF QUASIPARTICLES IN QUANTUM MATERIALS AT HIGH MAGNETIC FIELD
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Francisco Martín Vega
Date of reading: 16/12/2021

5 **Project title:** PhD thesis: VORTEX LATTICES UNDER STRES: VISUALIZING THE SUPERCONDUCTING VORTEX LATTICE IN PRESENCE OF DISORDER AND MAGNETIS
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Jose Benito Llorens

Date of reading: 16/01/2020

6 **Project title:** PhD thesis: Magnetic force microscopy of layered superconductors in vectorial magnetic fields
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Alex Correa Orellana
Date of reading: 22/01/2018

7 **Project title:** PhD thesis: Visualizing the influence of defects and impurities on pncitide and chalcogenide superconductors
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Anton Fente Hernandez
Date of reading: 26/04/2017

8 **Project title:** PhD thesis: Visualizing the influence of the Fermi surface on Superconductivity
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Edwin Herrera Vasco
Date of reading: 15/12/2016

9 **Project title:** PhD thesis: Superconductividad y dimensionalidad: Microscopa tunel bajo campos magneticos inclinados.
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Jose Augusto Galvis Echeverry
Date of reading: 11/2013

10 **Project title:** Master project Growth and characterization of single crystals of layered Pd-Bi binary alloys
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Alexandre Correa
Date of reading: 07/2013

11 **Project title:** PhD thesis, Superconducting vortex dynamics and new heavy fermion phases studied by very low temperature scanning tunneling spectroscopy
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Ana Maldonado Cid
Date of reading: 07/2013

12 **Project title:** Master project of A. Fente, Superconductividad bidimensional, efecto Kondo, y magnetismo en la serie LaxCe1-xSb2
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Anton Fente Hernandez
Date of reading: 07/2012

13 **Project title:** Master project of A. Maldonado, Espectroscopía túnel a muy bajas temperaturas en aluminio
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Ana Maldonado Cid
Date of reading: 07/2009

14 **Project title:** PhD thesis Orden y desorden en superconductividad
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Isabel Guillamon Gomez
Date of reading: 06/2009

15 **Project title:** Master project of F. Luque, Espectroscopía túnel en el superconductor magnético HoNi2B2C
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Francisco J. Luque
Date of reading: 07/2008

16 **Project title:** PhD thesis, Espectroscopía túnel local en superconductores magnéticos: los borocarburos de niquel TmNi2B2C y ErNi2B2C
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Student: Maria Crespo Jimenez
Date of reading: 11/2006

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:** Solutions of nanomagnetism to social challenges.
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Rodolfo Miranda; Manuel Vazquez; Ma Pilar Marin; Hermann Suderow; Alberto Bollero; Juan de la Figuera; Agustina Asenjo; Paolo Perna
Nº of researchers: 50
Funding entity or bodies:
Comunidad de Madrid **Type of entity:** Regional Research Funding Agency
City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 01/01/2019 - 31/12/2022
Total amount: 1.000.000 €

2 **Name of the project:** NUEVAS MICROSCOPIAS DE DISPOSITIVOS PARA VISUALIZAR MATERIALES CUANTICOS CONTROLADOS
Entity where project took place: Facultad de Ciencias **Type of entity:** University Centres and Structures and Associated Bodies
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Hermann Suderow Rodriguez; Isabel Guillamon Gomez
Nº of researchers: 6
Start-End date: 01/01/2018 - 31/12/2020
Total amount: 272.000 €

3 **Name of the project:** EU, H2020, COST, Nanoscale coherent hybrid devices for superconducting quantum technologies, COST CA16218
Entity where project took place: COST EU **Type of entity:** State agency
City of entity: Brussels,
Name principal investigator (PI, Co-PI....): Hermann Suderow Rodriguez
Nº of researchers: 100
Start-End date: 01/11/2017 - 30/10/2020
Total amount: 600.000 €

4 **Name of the project:** Increasing the delivery capabilities of the liquid Helium production and recovery system of the Campus UAM+CSIC
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Hermann Suderow
Nº of researchers: 30
Start-End date: 01/01/2019 - 31/12/2019
Total amount: 105.725 €

5 **Name of the project:** Visualizing, understanding and controlling Andreev bound states down to atomic scale
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Alfredo Levy Yeyati; Hermann Suderow
Nº of researchers: 5
Start-End date: 01/01/2015 - 31/12/2018
Total amount: 160.000 €

6 **Name of the project:** New frontiers of fundamental and applied nanomagnetism
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Rodolfo Miranda Soriano; Hermann Suderow Rodriguez
Nº of researchers: 40
Start-End date: 2014 - 2018
Total amount: 900.000 €

7 **Name of the project:** Superconductividad bidimensional, nuevos fenómenos para nuevas aplicaciones
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Hermann Suderow
Nº of researchers: 4
Start-End date: 01/01/2015 - 31/12/2017
Total amount: 130.000 €

8 **Name of the project:** COST program 2012. Nanoscale superconductivity: novel funcionalities through optimized confinement of condensate and fields. NanoSC-COST.
Name principal investigator (PI, Co-PI....): H. Suderow, Spanish representative and responsible for characterization (IP at EU V. Moshchalkov)
Nº of researchers: 80
Start-End date: 2013 - 2017

9 **Name of the project:** ExtremeFieldImaging – Scanning tunneling spectroscopy at high magnetic fields: visualizing pnictide and heavy fermion superconductivity
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Isabel Guillamón Gomez; Hermann Suderow Rodriguez
Nº of researchers: 2

Start-End date: 2013 - 2017
Total amount: 100.000 €

10 **Name of the project:** Vortex 2015 workshop, ICAM-NSF support for travel for ICAM scientists
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): H. Suderow; I. Guillamon; L. Greene; J.G. Rodrigo; S. Vieira; E. Gonzalez
Nº of researchers: 5
Start-End date: 2014 - 2015
Total amount: 10.000 €

11 **Name of the project:** Proyectos de cooperación interuniversitaria con Asia Banco Santander - UAM (2013).Síntesis y caracterización de superconductores nanoestructurados.
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): H. Suderow
Nº of researchers: 8
Funding entity or bodies:
BANCO SANTANDER, S.A.
City funding entity: Spain

Start-End date: 2013 - 2015
Total amount: 11.000 €

12 **Name of the project:** Direct observation of individual and collective properties of superconducting vortices through scanning tunneling microscopy and spectroscopy. FIS2011-23488. VORTEX MATTERS.
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): H. Suderow
Nº of researchers: 8
Start-End date: 2011 - 2014
Total amount: 240.000 €

13 **Name of the project:** Proyecto ACI-Colabora con India. Fabricación y estudio de nanoestructuras en dicalcogenuros superconductores.Mayo 2010-Abril 2013. Referencia ACI2009-0905.
Name principal investigator (PI, Co-PI....): H. Suderow
Nº of researchers: 14
Start-End date: 2010 - 2013
Total amount: 77.000 €

14 **Name of the project:** Fundamentos y aplicaciones de moléculas, nanopartículas y nanoestructuras
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): Rodolfo Miranda Soriano
Funding entity or bodies:
Comunidad de Madrid **Type of entity:** Body, others

Start-End date: 2009 - 2013

15 **Name of the project:** Programa Consolider-Ingenio 2010 del Ministerio de Educación y Ciencia (de 2007 a 2011). Nanociencia Molecular CDS2007-00010
Name principal investigator (PI, Co-PI....): E. Coronado Miralles

Nº of researchers: 120
Start-End date: 2007 - 2013
Total amount: 5.000.000 €

16 **Name of the project:** Proyecto ACI-Promociona. Science and technology at high magnetic fields
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): H. Suderow.
Nº of researchers: 4
Funding entity or bodies:
MINECO

Start-End date: 2011 - 2012
Total amount: 30.000 €

17 **Name of the project:** Proyectos de cooperación interuniversitaria Banco Santander - UAM (2011). Superconductividad: cien años de un fenómeno interdisciplinar.
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): H. Suderow
Nº of researchers: 12
Start-End date: 2011 - 2012
Total amount: 15.000 €

18 **Name of the project:** Nano-Science and Engineering in Superconductivity (NES) Core-to-Core program entre Japón, USA, y la Unión Europea Japan Society for Promotion of Science y European Science Foundation Coordinador europeo: V. Moshchalkov. Coordinador en Japón: Kazuo Kadowaki Coordinador en España: S. Vieira
Name principal investigator (PI, Co-PI....): S. Vieira (Spain), V. Moshchalkov (EU IP)
Nº of researchers: 100
Start-End date: 2009 - 2012

19 **Name of the project:** Marie Curie advanced cryogenics course "Cryocourse" European Commission Contract Nr MSCF-CT-2006-045781 Coordinador: H. Godfrin, Grenoble Coordinador en España : S. Vieira.
Nº of researchers: 40
Start-End date: 2008 - 2011

20 **Name of the project:** Estancia de año sabático de V. Tissen. Fermi surface under pressure: upper critical field down to millikelvin temperaturas of superconductors with competing orders. SAB2009-0057
Name principal investigator (PI, Co-PI....): S. Vieira
Nº of researchers: 3
Start-End date: 2010 - 2010

21 **Name of the project:** Programa de actividades de I+D de la Comunidad de Madrid, CITECNOMIK
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): Sebastian Vieira Diaz
Nº of researchers: 30
Start-End date: 2006 - 2009
Total amount: 600.000 €

22 **Name of the project:** Proyecto del Plan Nacional de I+D+I, convocatoria de 2003 (de 2004 a 2007). Punta superconductora para microscopía y espectroscopia túnel local a muy bajas temperaturas: Estudio de algunos sistemas superconductores y magnéticos Referencia: FIS2004-028977. Ejecución en el Laboratorio de Bajas Temperaturas de la UAM (LBT-UAM).
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): H. Suderow
Nº of researchers: 8
Start-End date: 2004 - 2007
Total amount: 140.000 €

23 **Name of the project:** Emergent behavior in Correlated Matter (ECOM) Programa de la European Science Foundation – COST, programa P-16 Coordinador del grupo de trabajo “experimental techniques”: H. Suderow Coordinador en España: J.C. Gomez-Sal
Name principal investigator (PI, Co-PI....): JC Gomez Sal (Spain), E. Bauer (EU IP)
Start-End date: 2002 - 2006

24 **Name of the project:** Fabricación de sistemas metálicos nanoscópicos y su caracterización a bajas y muy bajas temperaturas (2002-2005) MAT2001-1281-C02-01
Name principal investigator (PI, Co-PI....): N. Agraït de la Puente
Nº of researchers: 6
Start-End date: 2002 - 2004
Total amount: 120.000 €

25 **Name of the project:** Materiales Magnéticos y superconductores a muy bajas temperaturas: nanoestructuras y transporte de espín a escala atómica 07N/0053/2002
Name principal investigator (PI, Co-PI....): H. Suderow
Nº of researchers: 6
Funding entity or bodies:
Comunidad de Madrid **Type of entity:** Body, others
Start-End date: 2002 - 2004
Total amount: 60.000 €

26 **Name of the project:** Estudio a bajas temperaturas del espectro de excitaciones de superconductores magnéticos (2002-2004)Colaboración bilateral CSIC-CNRS con J.P. Brison en Grenoble
Name principal investigator (PI, Co-PI....): J.L. Martínez-Peña y J.P. Brison. Ejecución en el ICMM-CSIC y en el LBT-UAM
Start-End date: 2002 - 2003
Total amount: 10.000 €

27 **Name of the project:** STM study of MgB2 single crystals (2002-2003) Colaboración bilateral dentro del programa NEDO con S. Tajima y S. Lee, del ISTEC (Japón)
Name principal investigator (PI, Co-PI....): S. Vieira y S. Tajima
Start-End date: 2002 - 2003

28 **Name of the project:** Magnetoresistencia colosal a temperatura ambiente en sistemas de Mn: Policristales, monocristales y láminas delgadas (1999-2002) MAT99-1045
Name principal investigator (PI, Co-PI....): J.L. Martinez Ejecución en el ICMM-CSIC
Start-End date: 1999 - 2002

29 **Name of the project:** Fermi liquid instabilities in correlated metals (FERLIN) (1998-2002) Proyecto de la European Science Foundation http://www.esf.org/physical/pp/FERLIN/ferlina.htm Coordinador en España: J.C. Gomez-Sal (Univ. Santander)
Name principal investigator (PI, Co-PI....): JC Gomez Sal (Spain IP) H.v. Löhneysen (EU IP)
Start-End date: 1998 - 2002

30 **Name of the project:** Vortex matter in superconductors at extreme scales and conditions Proyecto de la European Science Foundation
Name principal investigator (PI, Co-PI....): S. Vieira (Spain), V. Moshchalkov (Leuven-Belgica)
Nº of researchers: 60
Start-End date: 1998 - 2002

31 **Name of the project:** Espectroscopía a escala nanométrica y medidas térmicas en materiales con electrones fuertemente correlacionados (1-10-98 al 1-10-2001) DGICYT PB97-0068
Name principal investigator (PI, Co-PI....): S. Vieira Ejecución en el LBT-UAM.
Start-End date: 1998 - 2001

32 **Name of the project:** Scanning tunneling microscopy in exotic superconductors (1998-2000) Contrato de la Unión Europea (programa Marie Curie/TMR), ERBFMICT972499 Ejecución en el LBT-UAM.
Name principal investigator (PI, Co-PI....): H. Suderow (fellow), S. Vieira (supervisor)
Start-End date: 1998 - 2000

33 **Name of the project:** Superconductores magnéticos: El caso de los borocarburos. Búsqueda de una nueva fase superconductora modulada bajo fuertes campos magnéticos y bajas temperaturas (1999-2000) Acción Integrada HF1998-0014 con el grupo de Superconductividad y Magnetismo del CRTBT-CNRS (Grenoble) y el grupo de teoría de la materia condensada de Bordeaux.
Name principal investigator (PI, Co-PI....): S. Vieira Ejecución en el LBT-UAM.
Start-End date: 1998 - 1999

34 **Name of the project:** Propiedades eléctricas, mecánicas y térmicas de estructuras submicrométricas de plomo y oro a bajas temperaturas (1-10-95 al 1-10-98) DGICYT MAT95-1542
Name principal investigator (PI, Co-PI....): S. Vieira Ejecución en el LBT-UAM.
Start-End date: 1995 - 1998

35 **Name of the project:** Expériènces à Très Basses Températures Proyecto interno del Commisariat á l'Energie Atomique. Ejecución en el Laboratorio de Bajas Temperaturas del SPSMS/DRFMC/CEA
Name principal investigator (PI, Co-PI....): J. Flouquet
Start-End date: 1994 - 1998

36 **Name of the project:** Sistema compacto de almacenamiento centralizado de helio gas en el Campus Uam+Csic
Entity where project took place: Universidad Autónoma de Madrid **Type of entity:** University
Name principal investigator (PI, Co-PI....): Hermann Suderow
Nº of researchers: 20
Start date: 2014
Total amount: 71.500 €

37 **Name of the project:** Proyecto del Plan Nacional de I+D+I, convocatoria de 2007 (de 2008 a 2011)Espectroscopía túnel local de alta resolución en el milikelvin: estudio de superconductores con orden de espín y de carga . Ejecución en el Laboratorio de Bajas Temperaturas de la UAM (LBT-UAM). Referencia: FIS2008-00454.

Name principal investigator (PI, Co-PI....): H. Suderow
Start date: 2011

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

1 **Name of the project:** Desarrollo de hilos pasamuros para medidas a altas presiones con Easylab.

2 **Name of the project:** Varios trabajos en el ámbito de la criogenia con EADS-CASA, dirigidos por S. Vieira.

Results

Industrial and intellectual property

1 **Title registered industrial property:** Termómetro primario para muy bajas temperaturas
Inventors/authors/obtainers: H. Suderow; A. Maldonado; S. Vieira
Entity holder of rights: Universidad Autónoma de Madrid
Nº of application: ES2380989B1
Country of inscription: Spain, Community of Madrid
Date of register: 2009
Conferral date: 16/10/2013

2 **Title registered industrial property:** Dispositivo posicionador para microscopios operable en entornos criogénicos
Inventors/authors/obtainers: H. Suderow; I. Guillamón; A. Buendía; M. Pazos; S. Vieira.
Entity holder of rights: Universidad Autónoma de Madrid
Nº of application: ES2396331B1
Country of inscription: Spain
Date of register: 2009
Conferral date: 2013

Transferencia e intercambio de conocimiento

- Industrial collaboration contracts in the field of cryogenics and the liquid hydrogen effort (4 ongoing, 70k€ and 8 finished >200k€, with LIDAX, FIDAMC, AIRBUS, CIDT).
- Patent of Airbus, "Device and method for testing permeability of materials", EP4390366A1.
- Dispositivo posicionador para microscopios operable en entornos criogénicos, número de publicación ES2396331B1. H. Suderow, I. Guillamón, A. Buendía, M. Pazos and S. Vieira. Procedure and thermometer to measure low temperatures. ES2380989B1. H. Suderow, S. Vieira and A. Maldonado.

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

1 Bermúdez-Perez JD; Herrera-Vasco E; Casas-Salgado J; Castelblanco HA; Vega-Bustos K; Cardenas-Chirivi G; Herrera-Sandoval OL; Suderow H; Giraldo-Gallo P; Galvis JA. High-resolution scanning tunneling microscope and its adaptation for local thermopower measurements in 2D materials.Ultramicroscopy. 261, pp. 113963. 2024. ISSN 0304-3991

DOI: 10.1016/j.ultramic.2024.113963

PMID: 38613941

Type of production: Scientific paper

2 Herrera, Edwin; Wu, Beilun; O'Leary, Evan; Ruiz, Alberto M.; Agueda, Miguel; Talavera, Pablo Garcia; Barrena, Victor; Azpeitia, Jon; Munuera, Carmen; Garcia-Hernandez, Mar; Wang, Lin-Lin; Kaminski, Adam; Canfield, Paul C.; Baldovi, Jose J.; Guillamon, Isabel; Suderow, Hermann; Herrera, Edwin; Wu, Beilun; O'Leary, Evan; Ruiz, Alberto M.; Agueda, Miguel; Talavera, Pablo Garcia; Barrena, Victor; Azpeitia, Jon; Munuera, Carmen; Garcia-Hernandez, Mar; Wang, Lin-Lin; Kaminski, Adam; Canfield, Paul C.; Baldovi, Jose J.; Guillamon, Isabel; Suderow, Hermann. Band structure, superconductivity, and polytypism in AuSn4. PHYSICAL REVIEW MATERIALS. 7, 2023. ISSN 2475-9953

DOI: 10.1103/PhysRevMaterials.7.024804

Type of production: Scientific paper

Source of citations: WOK **Citations:** 2

3 Rollano, V; de Ory, M. C.; Gomez, A.; Gonzalez, E. M.; Pribulova, Z.; Marcin, M.; Samuely, P.; Sanchez-Santolino, G.; Torres-Pardo, A.; Mompean, F.; Garcia-Hernandez, M.; Guillamon, I; Suderow, H.; Menghini, M.; Vicent, J. L.; Rollano, V; de Ory, M. C.; Gomez, A.; Gonzalez, E. M.; Pribulova, Z.; Marcin, M.; Samuely, P.; Sanchez-Santolino, G.; Torres-Pardo, A.; Mompean, F.; Garcia-Hernandez, M.; Guillamon, I; Suderow, H.; Menghini, M.; Vicent, J. L.. Enhancement of vortex liquid phase and reentrant behavior in NiBi₃ single crystals. SUPERCONDUCTOR SCIENCE & TECHNOLOGY. 36, 2023. ISSN 0953-2048

DOI: 10.1088/1361-6668/acbe74

Type of production: Scientific paper

Source of citations: WOK **Citations:** 1

4 Noah A; Zur Y; Fridman N; Singh S; Gutfreund A; Herrera E; Vakahi A; Remennik S; Huber ME; Gazit S; Suderow H; Steinberg H; Millo O; Anahory Y. Nano-Patterned Magnetic Edges in CrGeTe(3) for Quasi 1-D Spintronic Devices.ACS applied nano materials. 6, pp. 8627 - 8634. 2023.

DOI: 10.1021/acsanm.3c01008

PMID: 37256091

Type of production: Scientific paper

Citations: 36

5 Noah, Avia; Zur, Yishay; Fridman, Nofar; Singh, Sourabh; Gutfreund, Alon; Herrera, Edwin; Vakahi, Atzmon; Remennik, Sergei; Huber, Martin Emile; Gazit, Snir; Suderow, Hermann; Steinberg, Hadar; Millo, Oded; Anahory, Yonathan; Noah, Avia; Zur, Yishay; Fridman, Nofar; Singh, Sourabh; Gutfreund, Alon; Herrera, Edwin; Vakahi, Atzmon; Remennik, Sergei; Huber, Martin Emile; Gazit, Snir; Suderow, Hermann; Steinberg, Hadar; Millo, Oded; Anahory, Yonathan. Nano-Patterned Magnetic Edges in CrGeTe₃ for Quasi 1-D Spintronic Devices. ACS APPLIED NANO MATERIALS. 6, pp. 8627 - 8634. 2023.

DOI: 10.1021/acsanm.3c01008
PMID: MEDLINE:37256091
Type of production: Scientific paper
Source of citations: WOK **Citations:** 5

6 Suderow, Hermann; Oppeneer, Peter M.; Suderow, Hermann; Oppeneer, Peter M.. Quantization observed for 'heavy' electrons. NATURE. 2023. ISSN 0028-0836
DOI: 10.1038/d41586-023-01263-y
PMID: MEDLINE:37193869
Type of production: Scientific paper
Source of citations: WOK **Citations:** 0

7 Herrera, Edwin; Guillamon, Isabel; Barrena, Victor; Herrera, William J.; Galvis, Jose Augusto; Yeyati, Alfredo Levy; Rusz, Jan; Oppeneer, Peter M.; Knebel, Georg; Brison, Jean Pascal; Flouquet, Jacques; Aoki, Dai; Suderow, Hermann; Herrera, Edwin; Guillamon, Isabel; Barrena, Victor; Herrera, William J.; Galvis, Jose Augusto; Yeyati, Alfredo Levy; Rusz, Jan; Oppeneer, Peter M.; Knebel, Georg; Brison, Jean Pascal; Flouquet, Jacques; Aoki, Dai; Suderow, Hermann. Quantum-well states at the surface of a heavy-fermion superconductor. NATURE. 616, pp. 465 - +. 2023. ISSN 0028-0836
DOI: 10.1038/s41586-023-05830-1
PMID: MEDLINE:36949204
Type of production: Scientific paper
Source of citations: WOK **Citations:** 5

8 Herrera E; Guillamón I; Barrena V; Herrera WJ; Galvis JA; Yeyati AL; Rusz J; Oppeneer PM; Knebel G; Brison JP; Flouquet J; Aoki D; Suderow H. Quantum-well states at the surface of a heavy-fermion superconductor.Nature. 616, pp. 465 - 469. 2023. ISSN 0028-0836
DOI: 10.1038/s41586-023-05830-1
PMID: 36949204
Type of production: Scientific paper
Citations: 88

9 Noah A; Alpern H; Singh S; Gutfreund A; Zisman G; Feld TD; Vakahi A; Remennik S; Paltiel Y; Huber ME; Barrena V; Suderow H; Steinberg H; Millo O; Anahory Y. Interior and Edge Magnetization in Thin Exfoliated CrGeTe(3) Films.Nano letters. 22, pp. 3165 - 3172. 2022. ISSN 1530-6984
DOI: 10.1021/acs.nanolett.1c04665
PMID: 35271282
Type of production: Scientific paper
Citations: 44

10 Noah, Avia; Alpern, Hen; Singh, Sourabh; Gutfreund, Alon; Zisman, Gilad; Feld, Tomer D.; Vakahi, Atzmon; Remennik, Sergei; Paltiel, Yossi; Huber, Martin Emile; Barrena, Victor; Suderow, Hermann; Steinberg, Hadar; Millo, Oded; Anahory, Yonathan; Noah, Avia; Alpern, Hen; Singh, Sourabh; Gutfreund, Alon; Zisman, Gilad; Feld, Tomer D.; Vakahi, Atzmon; Remennik, Sergei; Paltiel, Yossi; Huber, Martin Emile; Barrena, Victor; Suderow, Hermann; Steinberg, Hadar; Millo, Oded; Anahory, Yonathan. Interior and Edge Magnetization in Thin Exfoliated CrGeTe₃ Films. NANO LETTERS. 22, pp. 3165 - 3172. 2022. ISSN 1530-6984
DOI: 10.1021/acs.nanolett.1c04665
PMID: MEDLINE:35271282
Type of production: Scientific paper
Source of citations: WOK **Citations:** 12

11 Soda, Minoru; Kagamida, Nao; Campillo, Emma; Forgan, Edward M.; Blackburn, Elizabeth; Muehlbauer, Sebastian; Cubitt, Robert; Suderow, Hermann; Guillamon, Isabel; Herrera, Edwin; Yoshizawa, Hideki; Kawano-Furukawa, Hazuki; Soda, Minoru; Kagamida, Nao; Campillo, Emma; Forgan, Edward M.; Blackburn, Elizabeth; Muehlbauer, Sebastian; Cubitt, Robert; Suderow, Hermann; Guillamon, Isabel; Herrera, Edwin; Yoshizawa, Hideki; Kawano-Furukawa, Hazuki. Penetration Depth and Coherence Length in the Superconductor β-PdBi₂. JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN. 91, 2022. ISSN 0031-9015

DOI: 10.7566/JPSJ.91.034706

Type of production: Scientific paper

Source of citations: WOK **Citations:** 0

12 Martin-Vega, Francisco; Herrera, Edwin; Wu, Beilun; Barrena, Victor; Mompean, Federico; Garcia-Hernandez, Mar; Canfield, Paul C.; Black-Schaffer, Annica M.; Baldovi, Jose J.; Guillamon, Isabel; Suderow, Hermann; Martin-Vega, Francisco; Herrera, Edwin; Wu, Beilun; Barrena, Victor; Mompean, Federico; Garcia-Hernandez, Mar; Canfield, Paul C.; Black-Schaffer, Annica M.; Baldovi, Jose J.; Guillamon, Isabel; Suderow, Hermann. Superconducting density of states and band structure at the surface of the candidate topological superconductor Au₂Pb. PHYSICAL REVIEW RESEARCH. 4, 2022.

DOI: 10.1103/PhysRevResearch.4.023241

Type of production: Scientific paper

Source of citations: WOK **Citations:** 4

13 Park S; Barrena V; Mañas-Valero S; Baldoví JJ; Fente A; Herrera E; Mompeán F; García-Hernández M; Rubio Á; Coronado E; Guillamón I; Yeyati AL; Suderow H. Coherent coupling between vortex bound states and magnetic impurities in 2D layered superconductors.Nature communications. 12, pp. 4668. 2021.

DOI: 10.1038/s41467-021-24531-9

PMID: 34344878

Type of production: Scientific paper

Citations: 42

14 Fernández-Lomana M; Barrena V; Wu B; Delgado S; Mompeán F; García-Hernández M; Suderow H; Guillamón I. Large magnetoresistance in the iron-free pnictide superconductor LaRu(2)P(2).Journal of physics. Condensed matter : an Institute of Physics journal. 33, 2021. ISSN 0953-8984

DOI: 10.1088/1361-648X/abdbea

PMID: 33445159

Type of production: Scientific paper

15 Fernandez-Lomana, Marta; Wu, Beilun; Martin-Vega, Francisco; Sanchez-Barquilla, Raquel; alvarez-Montoya, Rafael; Castilla, Jose Maria; Navarrete, Jose; Marijuan, Juan Ramon; Herrera, Edwin; Suderow, Hermann; Guillamon, Isabel; Fernandez-Lomana, Marta; Wu, Beilun; Martin-Vega, Francisco; Sanchez-Barquilla, Raquel; alvarez-Montoya, Rafael; Castilla, Jose Maria; Navarrete, Jose; Marijuan, Juan Ramon; Herrera, Edwin; Suderow, Hermann; Guillamon, Isabel. Millikelvin scanning tunneling microscope at 20/22 T with a graphite enabled stick-slip approach and an energy resolution below 8 μeV: Application to conductance quantization at 20 T in single atom point contacts of Al and Au and to the charge density wave of 2H-NbSe₂. REVIEW OF SCIENTIFIC INSTRUMENTS. 92, 2021. ISSN 0034-6748

DOI: 10.1063/5.0059394

PMID: MEDLINE:34598511

Type of production: Scientific paper

Source of citations: WOK **Citations:** 10

16 Fernández-Lomana M; Wu B; Martín-Vega F; Sánchez-Barquilla R; Álvarez-Montoya R; Castilla JM; Navarrete J; Marijuan JR; Herrera E; Suderow H; Guillamón I. Millikelvin scanning tunneling microscope at 20/22 T with a graphite enabled stick-slip approach and an energy resolution below 8 μeV: Application to conductance quantization at 20 T

in single atom point contacts of Al and Au and to the charge density wave of 2H-NbSe(2).The Review of scientific instruments. 92, pp. 093701. 2021. ISSN 0034-6748
DOI: 10.1063/5.0059394
PMID: 34598511
Type of production: Scientific paper

17 Martin-Vega, Francisco; Barrena, Victor; Sanchez-Barquilla, Raquel; Fernandez-Lomana, Marta; Benito Llorens, Jose; Wu, Beilun; Fente, Anton; Perconte Duplain, David; Horcas, Ignacio; Lopez, Raquel; Blanco, Javier; Higuera, Juan Antonio; Manas-Valero, Samuel; Jo, Na Hyun; Schmidt, Juan; Canfield, Paul C.; Rubio-Bollinger, Gabino; Rodrigo, Jose Gabriel; Herrera, Edwin; Guillamon, Isabel; Suderow, Hermann; Martin-Vega, Francisco; Barrena, Victor; Sanchez-Barquilla, Raquel; Fernandez-Lomana, Marta; Benito Llorens, Jose; Wu, Beilun; Fente, Anton; Perconte Duplain, David; Horcas, Ignacio; Lopez, Raquel; Blanco, Javier; Higuera, Juan Antonio; Manas-Valero, Samuel; Jo, Na Hyun; Schmidt, Juan; Canfield, Paul C.; Rubio-Bollinger, Gabino; Rodrigo, Jose Gabriel; Herrera, Edwin; Guillamon, Isabel; Suderow, Hermann. Simplified feedback control system for scanning tunneling microscopy. REVIEW OF SCIENTIFIC INSTRUMENTS. 92, 2021. ISSN 0034-6748
DOI: 10.1063/5.0064511
PMID: MEDLINE:34717388
Type of production: Scientific paper
Source of citations: WOK **Citations:** 3

18 Martín-Vega F; Barrena V; Sánchez-Barquilla R; Fernández-Lomana M; Benito Llorens J; Wu B; Fente A; Perconte Duplain D; Horcas I; López R; Blanco J; Higuera JA; Mañas-Valero S; Jo NH; Schmidt J; Canfield PC; Rubio-Bollinger G; Rodrigo JG; Herrera E; Guillamón I; Suderow H. Simplified feedback control system for scanning tunneling microscopy.The Review of scientific instruments. 92, pp. 103705. 2021. ISSN 0034-6748
DOI: 10.1063/5.0064511
PMID: 34717388
Type of production: Scientific paper

19 Magnetic phase diagram, magnetotransport and inverse magnetocaloric effect in the noncollinear antiferromagnet Mn5Si3. Journal of Magnetism and Magnetic Materials. 489, pp. 165451. North-Holland, 13/06/2019.
DOI: 10.1016/j.jmmm.2019.165451
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes

20 Methods to simplify cooling of liquid Helium cryostats. Hardware X. pp. e00058. Elsevier, 04/2019.
DOI: 10.1016/j.ohx.2019.e00058
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes

21 Attractive interaction between superconducting vortices in tilted magnetic fields. Communications Physics. 2, pp. 31. Nature Group, 03/2019.
DOI: 10.1038/s42005-019-0132-x
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes

22 Attractive interaction between superconducting vortices in tilted magnetic fields. 2019.
Type of production: Scientific paper

23 Long-range vortex transfer in superconducting nanowires. 2019.
Type of production: Scientific paper

24 Methods to simplify cooling of liquid Helium cryostats. 2019.
Type of production: Scientific paper

25 Córdoba R; Mailly D; Rezaev RO; Smirnova EI; Schmidt OG; Fomin VM; Zeitler U; Guillamón I; Suderow H; De Teresa JM. Three-Dimensional Superconducting Nanohelices Grown by He(+)-Focused-Ion-Beam Direct Writing.Nano letters. 19, pp. 8597 - 8604. 2019. ISSN 1530-6984
DOI: 10.1021/acs.nanolett.9b03153
PMID: 31730351
Type of production: Scientific paper
Citations: 43

26 JA Galvis; E. Herrera; C. Berthod; S. Vieira; I. Guillamon; H. Suderow. Tilted vortex cores and superconducting gap anisotropy in 2H-NbSe2. Communications Physics. 1, pp. 30. Nature, 12/2018.
DOI: 10.1038/s42005-018-0028-1
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Source of citations: WOS **Citations:** 5

27 Fente A.; Correa-Orellana A.; Böhmer A.; Kreyssig A.; Ran S.; Bud'Ko S.; Canfield P.; Mompean F.; García-Hernández M.; Munuera C.; Guillamón I.; Suderow H.. Direct visualization of phase separation between superconducting and nematic domains in Co-doped CaFe2As2 close to a first-order phase transition. Physical Review B. 97, 2018. ISSN 24699950
DOI: 10.1103/PhysRevB.97.014505
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 6

28 Choi D.; Fernández C.; Herrera E.; Rubio-Verdú C.; Ugeda M.; Guillamón I.; Suderow H.; Pascual J.; Lorente N.. Influence of Magnetic Ordering between Cr Adatoms on the Yu-Shiba-Rusinov States of the ?-Bi2Pd Superconductor. Physical Review Letters. 120, 2018. ISSN 00319007
DOI: 10.1103/PhysRevLett.120.167001
Type of production: Scientific paper **Format:** Journal
Source of citations: SCOPUS **Citations:** 4

29 Fente A.; Meier W.; Kong T.; Kogan V.; Bud'Ko S.; Canfield P.; Guillamón I.; Suderow H.. Influence of multiband sign-changing superconductivity on vortex cores and vortex pinning in stoichiometric high- Tc CaKFe4As4. Physical Review B. 97, 2018. ISSN 24699950
DOI: 10.1103/PhysRevB.97.134501
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Source of citations: WOS **Citations:** 3

30 Pristáš G.; Orendá? M.; Gabáni S.; Ka?mar?ík J.; GaŽo E.; Pribulová Z.; Correa-Orellana A.; Herrera E.; Suderow H.; Samuely P.. Pressure effect on the superconducting and the normal state of ?- B i2Pd. Physical Review B. 97, 2018. ISSN 24699950
DOI: 10.1103/PhysRevB.97.134505
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 1

31 J.A. Galvis; E. Herrera; I. Guillamón; S. Vieira; H. Suderow. Vortex cores and vortex motion in superconductors with anisotropic Fermi surfaces. Physica C: Superconductivity and its Applications. 533, pp. 2 - 8. Elsevier {BV}, 02/2017. Available on-line at: <10.1016/j.physc.2016.07.023>.
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 1

32 Kyuil Cho; A. Fente; S. Teknowijoyo; M. A. Tanatar; K. R. Joshi; N. M. Nusran; T. Kong; W. R. Meier; U. Kaluarachchi; I. Guillamon; H. Suderow; S. L. Bud'ko; P. C. Canfield; R. Prozorov. Nodeless multiband superconductivity in stoichiometric single-crystalline CaKFe4As4. Physical Review B. 95 - 10, 2017.
DOI: 10.1103/PhysRevB.95.100502
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Source of citations: WOS **Citations:** 30

33 Herrera, E.; Guillamon, I.; Galvis, J. A.; Correa, A.; Fente, A.; Vieira, S.; Suderow, H.; Martynovich, A. Yu.; Kogan, V. G.. Subsurface bending and reorientation of tilted vortex lattices in bulk isotropic superconductors due to Coulomb-like repulsion at the surface. PHYSICAL REVIEW B. 96, 2017. ISSN 2469-9950
DOI: 10.1103/PhysRevB.96.184502
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 2

34 Edwin Herrera; Jose Benito-Llorens; Udhara S. Kaluarachchi; Sergey L. Bud'ko; Paul C. Canfield; Isabel Guillamon; Hermann Suderow. Vortex creep at very low temperatures in single crystals of the extreme type-II superconductor Rh9In4S4. Physical Review B. 95 - 13, 2017.
DOI: 10.1103/PhysRevB.95.134505
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Source of citations: WOS **Citations:** 1

35 A. Fente; E. Herrera; I. Guillamon; H. Suderow; S. Manas-Valero; M. Galbiati; E. Coronado; V. G. Kogan. Field dependence of the vortex core size probed by scanning tunneling microscopy. Physical Review B. 94 - 1, 2016.
DOI: 10.1103/PhysRevB.94.014517
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 12

36 Gorky Shaw; S. S. Banerjee; T. Tamegai; Hermann Suderow. Metastable inhomogeneous vortex configuration with non-uniform filling fraction inside a blind hole array patterned in a BSCCO single crystal and concentrating magnetic flux inside it. Superconductor Science & Technology. 29 - 6, 2016.
DOI: 10.1088/0953-2048/29/6/065021
Type of production: Scientific paper **Format:** Journal
Corresponding author: No

37 J. Kacmarcik; Z. Pribulova; T. Samuely; P. Szabo; V. Cambel; J. Soltys; E. Herrera; H. Suderow; A. Correa-Orellana; D. Prabhakaran; P. Samuely. Single-gap superconductivity in beta-Bi2Pd. Physical Review B. 93 - 14, 2016.
DOI: 10.1103/PhysRevB.93.144502
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
Source of citations: WOS **Citations:** 18

38 Mostafa Enayat; Zhixiang Sun; Ana Maldonado; Hermann Suderow; Silvia Seiro; Christoph Geibel; Steffen Wirth; Frank Steglich; Peter Wahl. Superconducting gap and vortex lattice of the heavy-fermion compound CeCu2Si2. Physical Review B. 93 - 4, 2016.
DOI: 10.1103/PhysRevB.93.045123
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
Source of citations: WOS **Citations:** 16

39 R. F. Luccas; A. Fente; J. Hanko; A. Correa-Orellana; E. Herrera; E. Climent-Pascual; J. Azpeitia; T. Perez-Castaneda; M. R. Osorio; E. Salas-Colera; N. M. Nemes; F. J. Mompean; M. Garcia-Hernandez; J. G. Rodrigo; M. A. Ramos; I. Guillamon; S. Vieira; H. Suderow. Charge density wave in layered La1-xCexSb2. Physical Review B. 92 - 23, 2015.
DOI: 10.1103/PhysRevB.92.235153
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 6

40 E. Herrera; I. Guillamon; J. A. Galvis; A. Correa; A. Fente; R. F. Luccas; F. J. Mompean; M. Garcia-Hernandez; S. Vieira; J. P. Brison; H. Suderow. Magnetic field dependence of the density of states in the multiband superconductor beta-Bi2Pd. Physical Review B. 92 - 5, 2015. Available on-line at: <http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:0
DOI: 10.1103/PhysRevB.92.054507
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Source of citations: WOS **Citations:** 23

41 Hermann J. Suderow. Opening the gate on superconductivity. Science. 350 - 6266, pp. 1316 - 1317. 2015.
DOI: 10.1126/science.aad7086
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 3

42 JA Galvis; Hermann Suderow. Three axis vector magnet set-up for cryogenic scanning probe microscopy. Review of Scientific Instruments. 86 - 013706, AIP, 2015.
DOI: 10.1063/1.4905531
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Source of citations: WOS **Citations:** 13

43 I. Guillamon; R. Cordoba; J. Sese; J.M. De Teresa; M.R. Ibarra; S. Vieira; H. Suderow. Enhancement of long-range correlations in a 2D vortex lattice by an incommensurate 1D disorder potential. Nature Physics. 10, pp. 851. 2014.
DOI: 10.1038/NPHYS3132
Type of production: Scientific paper **Format:** Scientific and technical document or report
Source of citations: WOS **Citations:** 35

44 S. Vieira; J.G. Rodrigo; I. Guillamon; H. Suderow. Imaging superconducting vortex cores and lattices with a scanning tunneling microscope. Invited review paper.Superconductor Science and Technology. 27, pp. 063001. 2014.
DOI: 10.1088/0953-2048/27/6/063001
Type of production: Scientific paper **Format:** Scientific and technical document or report

Source of citations: WOS **Citations:** 38

45 S.S. Banerjee; G. Shaw; R. Ibarra; J.M. De Teresa; J. Sese; R. Cordoba; S. Vieira; P. Kulkarni; H. Suderow; I. Guillamon. Nanostructuring superconducting vortex matter with focused ion beams. Physica C. 503, pp. 70. 2014.
DOI: 10.1016/j.physc.2014.04.031
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 3

46 A. Fente; I. Guillamon; S. Ran; S. Vieira; H. Suderow; S.L. Bud'ko; P.C. Canfield. Observation of unreconstructed square atomic square lattice in Ca(Fe0.965Co0.035)2As2 cleaved at very low temperatures. J. Physics, Conference Series. 568, pp. 022046. 2014.
DOI: 10.1088/1742-6596/568/2/022046
Type of production: Scientific paper **Format:** Scientific and technical document or report
Source of citations: WOS **Citations:** 2

47 H. Suderow; S. Vieira; J.G. Rodrigo; I. Guillamon. Scanning tunneling microscopy and spectroscopy at very low temperatures. J. Physics, Conference Series. 568, pp. 022045. 2014.
DOI: 10.1088/1742-6596/568/2/022045
Type of production: Scientific paper **Format:** Scientific and technical document or report

48 F. Guinea; H. Suderow; E. Coronado; E. Navarro-Moratalla; S. Vieira; I. Guillamon; L. Chirolli; J.A. Galvis. Zero bias conductance peak in detached flakes of superconducting 2H-TaS2 probed by scanning tunneling spectroscopy.Physical Review B. 89, pp. 224512. APS, 2014.
DOI: 10.1103/PhysRevB.89.224512
Type of production: Scientific paper
Source of citations: WOS **Citations:** 11

49 A. Fente; H. Suderow; S. Vieira; N.M. Nemes; M. García-Hernández; S.L. Bud'ko; P.C. Canfield. Low temperature magnetic transitions of single crystal HoBi. Solid State Comm. 171, pp. 59. 2013.
DOI: 10.1016/j.ssc.2013.07.027
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 3

50 T. Perez-Castañeda; J. Azpeitia; J. Hanko; A. Fente; H. Suderow; M.A. Ramos J.. Low-Temperature Specific Heat of Graphite and CeSb2: Validation of a Quasi-adiabatic Continuous Method. J Low Temp Phys. 173, pp. 4. 2013.
DOI: 10.1007/s10909-013-0884-8
Type of production: Scientific paper
Source of citations: WOS **Citations:** 9

51 R. Córdoba; T.I. Baturina; J. Sesé; Yu. Mironov; J.M. De Teresa; M.R. Ibarra; D.A. Nasimov; A.K. Gutakovskii; A.V. Latishev; I. Guillamón; H. Suderow; S. Vieira; M.R. Baklanov; J.J. Palacios; Valerii Vinokour. Magnetic field-induced dissipation-free state in superconducting nanostructures. Nat Comm. 4, pp. 1437. 2013.
DOI: 10.1038/ncomms2437
Type of production: Scientific paper
Source of citations: WOS **Citations:** 54

Relevant results: Highlight in Madrimasd(http://www.madrimasd.org/informacionidi/noticias/noticia.asp?id=55849), http://www.2physics.com/) and US Society of Hispanic Professional Engineers (see p. 24 http://www.nxtbook.com/nxtbooks/shpe/fall13/index.php)

52 V.G. Tissen; M.R. Osorio; J.P. Brison; N.M. Nemes; M. Gacría-Hernández; L. Cario; P. Rodiere; S. Vieira; H. Suderow. Pressure dependence of supeconducting critical temperature and upper critical field of NbS2. Phys. Rev. B. 87, pp. 134502. 2013.
DOI: 10.1103/PhysRevB.87.134502
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 28

53 J.A. Galvis; P. Rodiere; I. Guillamón; M.R. Osorio; J.G. Rodrigo; L. Cario; E. Navarro-Moratalla; E. Coronado; S. Vieira; H. Suderow. Scanning tunneling measurements of layers of superconducting 2H-TaSe2: Evidence for a zero-bias anomaly in single layers. Phys Rev B. 87, pp. 094502. 2013.
DOI: 10.1103/PhysRevB.87.094502
Type of production: Scientific paper
Source of citations: WOS **Citations:** 17

54 J.A. Galvis; H. Suderow; S. Vieira; S.L. Bud'ko; P.C. Canfield. Scanning tunneling microscopy in the superconductor LaSb2. Phys Rev B. 87, pp. 214504. 2013.
DOI: 10.1103/PhysRevB.87.214504
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 5

55 H. Suderow; S. Vieira; M.A. Ramos; M. Garcia-Hernandez; F. Mompean; P. Kulkarni; M.R. Osorio; J. Hanko; N.M. Nemes; R.F. Luccas; B. Silva. Superconductivity and magnetism on flux-grown single crystals of NiBi3. Physical Review B. 88, pp. 184508. APS, 2013.
DOI: 10.1103/PhysRevB.88.184508
Type of production: Scientific paper **Format:** Scientific and technical document or report
Corresponding author: Yes
Source of citations: WOS **Citations:** 13

56 A. Maldonado; S. Vieira; H. Suderow. Supercurrent on a vortex core: Current-driven scanning tunneling spectroscopy measurements. Phys Rev B. 88, pp. 064518. 2013.
DOI: 10.1103/PhysRevB.88.064518
Type of production: Scientific paper **Format:** Journal
Source of citations: WOS **Citations:** 11

57 J.G. Rodrigo; V.Crespo; H. Suderow; S. Vieira; F. Guinea. Topological superconductivity in metallic nanowires fabricated with a scanning tunneling microscope. New J of Phys. 15, pp. 055020. 2013.
DOI: 10.1088/1367-2630/15/5/055020
Type of production: Scientific paper
Source of citations: WOS **Citations:** 3

58 M.R. Osorio; A. Palacio-Morales; J.G. Rodrigo; H. Suderow; S. Vieira.. Demonstration experiments for solid-state physics using a table-top mechanical Stirling. Eur J Phys. 33, pp. 757. 2012.
DOI: 10.1088/0143-0807/33/4/757

Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 2

59 G. Shaw; B. Bag; S.S. Banerjee; H. Suderow; T. Tamegai. Generating strong magnetic flux shielding regions in a single crystal of Bi2Sr2CaCu2O8 using a blind hole array. Superc Sci Tech. 25, pp. 095016. 2012.
DOI: 10.1088/0953-2048/25/9/095016
Type of production: Scientific paper
Source of citations: WOS **Citations:** 6

60 J.A. Galvis; M. Crespo; I. Guillamón; H. Suderow; S. Vieira; M. García-Hernández; S. Bud'ko; P.C. Canfield.. Magnetic and superconducting phase diagrams of ErNi2B2C.Solid State Comm. 152, pp. 1075. 2012.
DOI: 10.1016/j.ssc.2012.03.021
Type of production: Scientific paper
Source of citations: WOS **Citations:** 4

61 M.R. Osorio; D.E. Lahera; H. Suderow. Magnetic levitation on a type-I superconductor as a practical demonstration experiment for students. Eur J Phys. 33, pp. 1383. 2012.
DOI: 10.1088/0143-0807/33/5/1383
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 1

62 G. Shaw; P. Mandal; B. Bag; S.S. Banerjee; T.Tamegai; H. Suderow.. Properties of nanopatterned pins generated in a superconductor with FIB. Appl Surf Sci. 258, pp. 4199. 2012.
DOI: 10.1016/j.apsusc.2011.05.011
Type of production: Scientific paper
Source of citations: WOS **Citations:** 4

63 V. Crespo; A. Maldonado; J.A. Galvis; P. Kulkarni; I. Guillamón; J.G. Rodrigo; H. Suderow; S. Vieira; S.S. Banerjee; P. Rodiere. Scanning microscopies of superconductors at very low temperatures. Physica C. 497, pp. 19. 2012.
DOI: 10.1016/j.physc.2012.02.014
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 3

64 A. Maldonado; H. Suderow; S. Vieira; D. Aoki; J. Flouquet.. Temperature dependendent tunneling spectroscopy in the heavy fermion CeRu2Si2 and in the antiferromagnet CeRh2Si2. J Phys Cond Matt. 24, pp. 475602. 2012.
DOI: 10.1088/0953-8984/24/47/475602
Type of production: Scientific paper
Source of citations: WOS **Citations:** 2

65 J.G. Rodrigo; V. Crespo; H. Suderow; S. Vieira; F. Guinea. Topological superconducting state of lead nanowires in an external magnetic field. Phys Rev Lett. 109, pp. 237003. 2012.
DOI: 10.1103/PhysRevLett.109.237003
Type of production: Scientific paper
Source of citations: WOS **Citations:** 16

66 A. Maldonado; I. Guillamón; J.G. Rodrigo; H. Suderow; S. Vieira; D. Aoki; J. Flouquet.. Tunneling spectroscopy of the superconducting state of URu2Si2. Phys Rev B. 85, pp. 214512. 2012.
DOI: 10.1103/PhysRevB.85.214512
Type of production: Scientific paper
Source of citations: WOS **Citations:** 6

67 S. Sangaio; J.M. De Teresa; M.R. Ibarra; I. Guillamón; H. Suderow; S. Vieira; L. Morellón.. Andreev reflection under high magnetic fields in ferromagnet-superconductor nanocontacts. Phys Rev B. 84, pp. 233402. 2011.
DOI: 10.1103/PhysRevB.84.233402
Type of production: Scientific paper
Source of citations: WOS **Citations:** 7

68 I. Guillamón; H. Suderow; S. Vieira; L. Cario; P. Rodière; E. Navarro-Moratalla; C. Marti-Gastaldo and E. Coronado.. Chiral charge order and superconductivity in 2H-TaS2. New J of Phys. 13, pp. 103020. 2011.
DOI: 10.1088/1367-2630/13/10/103020
Type of production: Scientific paper
Source of citations: WOS **Citations:** 23

69 H. Suderow; I. Guillamón; S. Vieira.. Compact very low temperature scanning tunneling microscope with mechanically driven horizontal linear positioning stage.Rev of Sci Inst. 82, pp. 033711. 2011.
DOI: 10.1063/1.3567008
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 30

70 I. Guillamón; H. Suderow; S. Vieira; A. Fernández-Pacheco; J. Sesé; R. Córdoba; J.M. De Teresa; M.R. Ibarra. Direct observation of stress accumulation and release in small superconducting vortex bundles.Phys Rev Lett. 107, pp. 077001. 2011.
DOI: 10.1103/PhysRevLett.106.077001
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 17

71 A. Maldonado; I. Guillamón; H. Suderow and S. Vieira.. Scanning tunneling spectroscopy under large current flow through the sample.Rev Sci Inst. 82, pp. 073710. 2011.
DOI: 10.1063/1.3615627
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 11

72 I. Guillamón; V. Crespo; H. Suderow; S. Vieira; J.P. Brison; S.L. Bud'ko and P.C. Canfield. Atomic resolution and vortex lattice studies of magnetic superconductors: a first approach in the nickel borocarbide TmNi2B2C.Physica C. 470, pp. 771. 2010.
DOI: 10.1016/j.physc.2010.02.073
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 8

73 B.L. Willems; G. Zhang; J. Vanacken; V.V. Moshchalkov; I. Guillamon; H. Suderow; S. Vieira; S.D. Janssens; K. Haenen; P. Wagner. In/extrinsic granularity in superconducting boron-doped diamond.Physica C. 470, pp. 853. 2010.
DOI: 10.1016/j.physc.2010.02.080
Type of production: Scientific paper
Source of citations: WOS **Citations:** 2

74 A. Maldonado; H. Suderow; S. Vieira. Thermometry with a nearly temperature independent sensitivity using a normal-superconducting tunnel diode biased closet o the superconducting gap. Cryogenics. 50, pp. 397. 2010.
DOI: 10.1016/j.cryogenics.2010.03.006
Type of production: Scientific paper
Source of citations: WOS **Citations:** 3

75 H. Suderow; V. Crespo; I. Guillamón; F. Servant; P. Lejay; J.P. Brison; J. Flouquet.. A Nodeless superconducting gap in Sr2RuO4 from tunneling spectroscopy. New J of Phys. 11, pp. 093004. 2009.
DOI: 10.1088/1367-2630/11/9/093004
Type of production: Scientific paper
Source of citations: WOS **Citations:** 24

76 I. Guillamón; H. Suderow; A. Fernández-Pacheco; J. Sesé; R. Córdoba; J.M. De Teresa; M.R. Ibarra; S. Vieira. Direct observation of melting in a two-dimensional superconducting vortex lattice.Nat Phys. 5, pp. 461. 2009.
DOI: 10.1038/NPHYS1368
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 67

Relevant results: Highlight in Physics Today (October 2009), Physics Update (http://blogs.physicstoday.org/update/2009/08/mapping-two-dimensional-meltin.html), and Madrimasd ("Observan la fusión de la red de vórtices en un nuevo material superconductor").

77 V. Crespo; J.G. Rodrigo; H. Suderow; S. Vieira; D.G. Hinks; I.K. Schuller. Evolution of the local superconducting density of states in ErRh4B4 close to the ferromagnetic transition. Phys Rev Lett. 102, pp. 237002. 2009.
DOI: 10.1103/PhysRevLett.102.237002
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 11

78 B.L. Willems; V.H. Dau; J. Vanacken; L.F. Chibotaru; V.V. Moshchalkov; I. Guillamón; H. Suderow; S. Vieira; S.D. Janssens; O.A. Williams; K. Haenen and P. Wagner. Intrinsic granularity in nanocrystalline boron-doped diamond films measured by scanning tunneling microscopy.Phys Rev B. 80, pp. 224518. 2009.
DOI: 10.1103/PhysRevB.80.224518
Type of production: Scientific paper
Source of citations: WOS **Citations:** 16

79 J.G. Rodrigo; H. Suderow; S. Vieira. Nanoscience and Engineering in Superconductivity.Editors V.V. Moshchalkov, R. Woerdenweber and W. Lang, ISBN 978-3-642-15136-1. Scanning Tunneling Spectroscopy of vortices with superconducting tips. 2009.
Type of production: Scientific paper **Format:** Book

80 H. Suderow; K. Behnia; I. Guillamon; V. Crespo; S. Vieira; D. Kikuchi; Y. Aoki; H. Sugawara and H. Sato.. Gap opening with ordering in PrFe4P12 studied by local tunneling spectroscopy. Phys Rev B. 77, pp. 153101. 2008.
DOI: 10.1103/PhysRevB.77.153101
Type of production: Scientific paper
Source of citations: WOS **Citations:** 3

81 J. Kacmarcik; P. Szabo; P. Samuely; J.G. Rodrigo; H. Suderow; S. Vieira; A. Lafond and A. Meerschaut. Intrinsic Josephson junction behavior of the low Tc superconductor (LaSe)(1.14)(NbSe2). Physica C. 468, pp. 543. 2008.
DOI: 10.1016/j.physc.2007.11.062
Type of production: Scientific paper
Source of citations: WOS **Citations:** 2

82 I. Guillamon; H. Suderow; F. Guinea; S. Vieira.. Intrinsic atomic scale modulations of the superconducting gap of 2H-NbSe2. Phys Rev B.77, pp. 134505. 2008.
DOI: 10.1103/PhysRevB.77.134505
Type of production: Scientific paper
Source of citations: WOS **Citations:** 62

Relevant results: Editor's suggestion. Highlight in "ESF Highlights 2007".

83 I. Guillamón; H. Suderow; S. Vieira; A. Fernández-Pacheco; J. Sesé; R. Córdoba; J.M. De Teresa; M.R. Ibarra.. Nanoscale superconducting properties of amorphous W-based deposits grown with a focused-ion-beam. New J of Phys. 10, pp. 093005. 2008.
DOI: 10.1088/1367-2630/10/9/093005
Type of production: Scientific paper
Source of citations: WOS **Citations:** 47

Relevant results: Highlight in Europhysics News, Vol.39, p. 15 (2008).

84 I. Guillamon; H. Suderow; S. Vieira; P. Rodiere. Scanning tunneling spectroscopy with superconducting tips of Al. Physica C. 468, pp. 537. 2008.
DOI: 10.1016/j.physc.2007.11.066
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 24

85 I. Guillamón; H. Suderow; S. Vieira; L. Cario; P. Diener and P. Rodière.. Superconducting density of states and vortex cores of 2H-NbSe2. Phys Rev Lett. 101, pp. 166407. 2008.
DOI: 10.1103/PhysRevLett.101.166407
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 97

86 M. Crespo; H. Suderow; S. Vieira; S. Bud'ko; P.C. Canfield. Local superconducting density of states of ErNi2B2C. Phys Rev Lett. 96, pp. 27003. 2006.
DOI: 10.1103/PhysRevLett.96.027003
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 30

87 M. Crespo; H. Suderow; S. Vieira; S. Bud'ko and P.C. Canfield. Thermal expansion measured by STM in the magnetic superconductor ErNi2B2C. Physica B. 378, pp. 471. 2006.
DOI: 10.1016/j.physb.2006.01.205
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 3

88 H. Suderow; V. Tissen; J.P. Brison; J.L. Martínez; S. Vieira.. Pressure induced effects on the Fermi surface of superconducting 2H-NbSe2. Phys Rev Lett. 95, pp. 117006. 2005.
DOI: 10.1103/PhysRevLett.95.117006
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 59

89 J.P. Brison; N. Luchier; A. Sulpice; H. Suderow; P. Martínez-Samper; S. Vieira; A.I. Buzdin; P.C. Canfield.. Anisotropic superconductivity in the borocarbide superconductors and spin disorder. J of Mag and Mag Mat. 272, pp. 158. 2004.
DOI: 10.1016/j.jmmm.2003.12.1380
Type of production: Scientific paper
Source of citations: WOS **Citations:** 5

90 J.G. Rodrigo; H. Suderow; S. Vieira. On the use of STM superconducting tips at very low temperatures. Eur Phys J B. 40, pp. 483. 2004.
DOI: 10.1140/epjb/e2004-00273-y
Type of production: Scientific paper
Source of citations: WOS **Citations:** 44

91 H. Suderow; V. Tissen; J.P. Brison; P. Lejay; J.L. Martínez; S. Vieira; S. Lee and S. Tajima. Pressure dependence of the upper critical field of MgB2 and of YNi2B2C. Phys Rev B. 70, pp. 134518. 2004.
DOI: 10.1103/PhysRevB.70.134518
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 35

92 J. Kacmarcik; P. Szabo; P. Samuely; J.G. Rodrigo; H. Suderow and S. Vieira; A. Lafond; A. Meerschaut. Scanning Tunneling Microscopy and Spectroscopy of (LaSe)1.14(NbSe2) at very low temperatures and in magnetic fields. Czechosklovak Journal of Physics (2004). 2004.
Type of production: Scientific paper

93 J.G. Rodrigo; H. Suderow; S. Vieira; E. Bascones; F. Guinea.. Superconducting nanostructures fabricated with an STM. Review article. J of Phys Cond Matt. 16, pp. R1151. 2004.
DOI: 10.1088/0953-8984/16/34/R01
Type of production: Scientific paper
Source of citations: WOS **Citations:** 33

Relevant results: Top papers 2004 (http://ej.iop.org/pdf/jpcm/2004_top_papers.pdf).

94 H. Suderow; S. Vieira; J.D. Strand; S. Bud`ko; P.C. Canfield. Very Low Temperature Scanning tunneling spectroscopy in the heavy fermion superconductor PrOs4Sb12. Phys Rev B Rapid Comm. 69, pp. 060504. 2004.
DOI: 10.1103/PhysRevB.69.060504
Type of production: Scientific paper

Source of citations: WOS **Citations:** 61

95 L. Durivault; F. Bourée; B. Chevalier; G. André; F. Weil; J. Etourneau; P. Martínez Samper; J.G. Rodrigo; H. Suderow; S. Vieira. Incommensurate and commensurate magnetic structures of the ternary germanide CeNiGe3. J Phys: Cond Matt. 15, pp. 77. 2003.
Type of production: Scientific paper

96 H. Suderow; M. Crespo; S. Vieira; M. Vila; M. Garcia-Hernandez; A. de Andres; C. Prieto; C. Ocal; J.L. Martínez; Y.M. Mukovskii.. Observation of a spin polarized current through single atom quantum point contacts. Physica E. 18, pp. 264. 2003.
DOI: 10.1016/S1386-9477(02)01010-X
Type of production: Scientific paper
Source of citations: WOS **Citations:** 3

97 P. Martinez-Samper; H. Suderow; S. Vieira; J.P. Brison; N. Luchier; P. Lejay; P. Canfield. Phonon mediated anisotropic superconductivity in the Y and Lu Ni borocarbides. Phys Rev B. 67, pp. 014526. 2003.
DOI: 10.1103/PhysRevB.67.014526
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 45

98 P. Martínez-Samper; J.G. Rodrigo; G. Rubio-Bollinger; H. Suderow; S. Vieira.. Scanning tunneling spectroscopy in MgB2. Invited Review issue about MgB2. Physica C. 385, pp. 233. 2003.
DOI: 10.1016/S0921-4534(02)02296-7
Type of production: Scientific paper
Source of citations: WOS **Citations:** 40

99 H. Suderow; J.G. Rodrigo; P. Martínez-Samper; S. Vieira; J.P. Brison; P. Lejay; P.C. Canfield; S.I. Lee; S. Tajima. Scanning tunneling spectroscopy in anisotropic s-wave superconductors. Int J of Mod Phys. 17, pp. 18. 2003.
DOI: 10.1142/S0217979203020892
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 1

100 J.G. Rodrigo; H. Suderow; S. Vieira.. Superconducting nanobridges under magnetic fields. Phys Stat Sol B. 237, pp. 386. 2003.
DOI: 10.1002/pssb.200301798
Type of production: Scientific paper
Source of citations: WOS **Citations:** 16

101 H. Suderow; E. Bascones; A. Izquierdo; S. Vieira.. Proximity effect and strong-coupling superconductivity in nanostructures built with an STM. Phys Rev B, Rapid Comm. 65, pp. 100519. 2002.
DOI: 10.1103/PhysRevB.65.100519
Type of production: Scientific paper
Source of citations: WOS **Citations:** 30

102 H. Suderow; M. Crespo; P. Martínez-Samper; J.G. Rodrigo; G. Rubio-Bollinger; S. Vieira; N. Luchier; J.P. Brison; P.C. Canfield.. Scanning tunneling microscopy and spectroscopy at very low temperatures. Physica C, Vol. 369,. 369, pp. 106. 2002.

DOI: 10.1016/S0921-4534(01)01228-X
Type of production: Scientific paper
Source of citations: WOS **Citations:** 22

103 P. Martínez Samper; A. Izquierdo; H. Suderow; J. Rodríguez Fernández; J.I. Espeso; F.G. Aliev; J.C. Gómez Sal; S. Vieira. The evanescence of the Ferromagnetic order in Ce1-xYxNi0.8Pt0.2 Dense Kondo System. Eur Phys J B. 28, pp. 103. 2002.
Type of production: Scientific paper

104 G. Rubio; H. Suderow; S. Vieira. Tunneling Spectroscopy in superconducting grains of MgB2. Phys Rev Lett. 86, pp. 5582. 2001.
DOI: 10.1103/PhysRevLett.86.5582
Type of production: Scientific paper
Source of citations: WOS **Citations:** 135

105 H. Suderow; P. Martinez-Samper; S. Vieira; N. Luchier; J.P. Brison; P. Canfield. Tunneling spectroscopy in the magnetic superconductor TmNi2B2C. Phys Rev B, Rapid Comm. 64, pp. 20503. 2001.
DOI: 10.1103/PhysRevB.64.020503
Type of production: Scientific paper
Source of citations: WOS **Citations:** 24

106 H. Suderow; E. Bascones; W. Belzig; F. Guinea; S. Vieira. Andreev scattering in nanoscopic junctions in magnetic fields. Europhysics Letters,. 50, pp. 749. 2000.
DOI: 10.1209/epl/i2000-00544-3
Type of production: Scientific paper
Source of citations: WOS **Citations:** 24

107 J.P. Brison; L. Glemot; H. Suderow; A. Huxley; S. Kambe; J. Flouquet. Heavy Fermion Superconductivity. Physica B. 280, pp. 165. 2000.
DOI: 10.1016/S0921-4526(99)01551-3
Type of production: Scientific paper
Source of citations: WOS **Citations:** 16

108 H. Suderow; S. Vieira. Nonequilibrium effects in superconducting nanobridges under magnetic fields. Phys Lett A. 275, pp. 299. 2000.
DOI: 10.1016/S0375-9601(00)00587-9
Type of production: Scientific paper
Corresponding author: Yes
Source of citations: WOS **Citations:** 6

109 H. Suderow; A. Izquierdo; S. Vieira. Superconducting lead nanobridges under magnetic fields. Physica C. 332, pp. 327. 2000.
DOI: 10.1016/S0921-4534(99)00696-6
Type of production: Scientific paper
Source of citations: WOS **Citations:** 8

110 J.P. Brison; H. Suderow; P. Rodière; A. Huxley; S. Kambe; F. Rullier-Albenque; J. Flouquet. Transport in the Superconducting Phase of UPt3 at Low Temperatures: Magnetic Field and Imputity Effects. Physica B. 281, pp. 872. 2000.

Type of production: Scientific paper

111 H. Suderow; S. Kambe; J. P. Brison; A.D. Huxley; J. Flouquet; F. Rullier-Albenque. Controlled Creation of Structural Defects and its Influence on the Superconducting Properties of UPt3. J of Low Temp Phys. 116, pp. 393. 1999.
DOI: 10.1023/A:1021711610128
Type of production: Scientific paper
Source of citations: WOS **Citations:** 8

112 S. Kambe; H. Suderow; T. Fukuhara; J. Flouquet; T. Takimoto. Spin fluctuation mediated thermal conductivity around the magnetic instability of CeNi2Ge2. J of Low Temp Phys. 117, pp. 101. 1999.
DOI: 10.1023/A:1021865906745
Type of production: Scientific paper
Source of citations: WOS **Citations:** 22

113 H. Suderow; J.P. Brison; A.D. Huxley; J. Flouquet. Scaling and Thermal Conductivity in Unconventional Superconductors : The Case of UPt3. Physical Review Letters. 80, pp. 165. 1998.
DOI: 10.1103/PhysRevLett.80.165
Type of production: Scientific paper
Source of citations: WOS **Citations:** 41

114 H. Suderow; J.P. Brison; A.D. Huxley; J. Flouquet. Scaling of the Thermal Conductivity in the Mixed Phase of UPt3. Physica B. 259, pp. 664. 1998.
Type of production: Scientific paper

115 H. Suderow; J.P. Brison; J. Flouquet; A. Tyler; Y. Maeno. Very Low Temperature Thermal Conductivity in the Layered Perovskite Sr2RuO4.J of Phys Cond Matt. 10, pp. L597. 1998.
DOI: 10.1088/0953-8984/10/34/004
Type of production: Scientific paper
Source of citations: WOS **Citations:** 23

116 H. Suderow; A.D. Huxley; H. Aubin; K. Behnia. Quasiparticle Vortex Scattering in UPt3. Phys Lett A. 234, pp. 342. 1997.
DOI: 10.1016/S0375-9601(97)00569-0
Type of production: Scientific paper
Source of citations: WOS **Citations:** 13

117 H. Suderow; J.P. Brison; A.D. Huxley; J. Flouquet. Thermal Conductivity and Gap Structure of the Superconducting Phases of UPt3. J of Low Temp Phys. 108, pp. 11. 1997.
DOI: 10.1007/BF02396814
Type of production: Scientific paper
Source of citations: WOS **Citations:** 69

118 S. Kambe; S. Raymond; H. Suderow; G. Lapertot; H. Bioud; P. Haen; L.P. Regnault; J. Flouquet; D.N. Davydov; A.G.M. Jansen; P. Wyder; N. Wilson. Charge and Spin Gaps in Kondo-Insulator CeNiSn. Czechoslovak Journal of Physics. 46, pp. 1999. 1996.
Type of production: Scientific paper

119 S. Kambe; S. Raymond; H. Suderow; J. McDonough; B. Fak; L.P. Regnault; R. Calemzuk; J. Flouquet. Excitations in Heavy Fermion Systems. Physica B. 224, pp. 135. 1996.
DOI: 10.1016/0921-4526(96)00060-9
Type of production: Scientific paper
Source of citations: WOS **Citations:** 21

120 H. Suderow; J.P. Brison; A.D. Huxley; J. Flouquet. Probing the Superconducting Gap of UPt3 by Very Low Temperature Thermal Conductivity. Physica B. 224, pp. 47. 1996.
Type of production: Scientific paper

121 H. Suderow; J.P. Brison; Ch. Marcenat; B. Salce. Thermal Diffusivity and Conductivity Measurements for Si:P near the Metal-Insulator Transition. Journal of Phys : Cond Matt. 8, pp. 999. 1996.
DOI: 10.1088/0953-8984/8/8/011
Type of production: Scientific paper
Source of citations: WOS **Citations:** 5

122 H. Suderow; J.P. Brison; A.D. Huxley; J. Flouquet. Very Low Temperature Thermal Conductivity of UPt3. Physica B. 230, pp. 47. 1996.
Type of production: Scientific paper

123 S. Kambe; H. Suderow; J. Flouquet; P. Haen and P. Lejay. Field-induced Renormalization observed by Magnetoresistance in CeRu2Si2. Solid State Communications. 95, pp. 175. 1995.
DOI: 10.1016/0038-1098(95)00243-X
Type of production: Scientific paper
Source of citations: WOS **Citations:** 28

124 Editor of "Some Modern Aspects of the Physics of Strongly Correlated Electron Systems", junto con R. Villar, J.C. Gomez-Sal y F. Aliev.Publication service UAM. ISBN 84-7477-780-1. 1999.
Type of production: Scientific book or monograph

125 Córdoba R; Ibarra A; Mailly D; Guillamón I; Suderow H; De Teresa JM. 3D superconducting hollow nanowires with tailored diameters grown by focused He(+) beam direct writing.Beilstein journal of nanotechnology. 11, pp. 1198 - 1206. 2020. ISSN 2190-4286
DOI: 10.3762/bjnano.11.104
PMID: 32832315
Source of citations: Otros **Citations:** 45

126 H. Suderow; S. Vieira. Fusión en una red bidimensional de vórtices superconductores.Investigación y Ciencia 05/2010. pp. 10 - 11. 2010.

Works submitted to national or international conferences

1 **Title of the work:** Atomic scale scanning tunneling spectroscopy with a superconducting tip
Name of the conference: Quantum coherent phenomena at the nanoscale
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Naples, Italy
Date of event: 16/06/2019

End date: 20/06/2019
Organising entity: University Naples

2 **Title of the work:** Characterization and manipulation of bound states in superconductors via scanning probe microscopy
Name of the conference: ESMOLNA2019
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Elche, Spain
Date of event: 23/05/2019
End date: 24/05/2019
Organising entity: Universitat de València **Type of entity:** University

3 **Title of the work:** Characterizing and manipulating vortices in uniaxial superconductors at high magnetic fields
Name of the conference: Vortex 2019
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Antwerp, Belgium
Date of event: 20/05/2019
End date: 25/05/2019
Organising entity: University Antwerp
Hermann Suderow.

4 **Title of the work:** Scanning probe microscopy of vortices in tilted magnetic fields
Name of the conference: Probing Coherent Superconducting Hybrids at the Nanoscale
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Eilat, Israel
Date of event: 17/02/2019
End date: 20/02/2019
Organising entity: Nanocohybri
Hermann Suderow.

5 **Title of the work:** Electronic interference observed by very low temperature scanning tunneling microscopy
Name of the conference: Synthesis and exotic physics of novel quantum materials
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Ames, United States of America
Date of event: 08/2018
Organising entity: Ames Lab
City organizing entity: Ames, United States of America
Hermann Suderow.

6 **Title of the work:** Scanning probe microscopy of vortices in tilted magnetic
Name of the conference: 12th International Conference on Materials and Mechanisms of Superconductivity.
City of event: Beijing, China
Date of event: 08/2018
Organising entity: M2S committee
Hermann Suderow.

7 **Title of the work:** Bound states of vortices and magnetic impurities in superconductors
Name of the conference: A.A.Abrikosov Memorial Conference
Type of participation: Participatory - invited/keynote talk
City of event: Moscoz, Russia
Date of event: 25/06/2018
End date: 28/06/2018
Organising entity: Landau Institute of Physics
Hermann Suderow.

8 **Title of the work:** Bound states and unconventional low energy electronic behavior in superconductors
Name of the conference: New Platforms for Topological Superconductivity with Magnetic Atoms
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Dresden, Germany
Date of event: 10/04/2018
End date: 14/04/2018
Organising entity: Max Planck
Hermann Suderow.

9 **Title of the work:** Biaxial strain induces phase separation in Ca(FeCo)2As2
Name of the conference: Vortex X. Rhodes
Corresponding author: Yes
Date of event: 2017
Hermann Suderow.

10 **Title of the work:** Microscopía de efecto túnel a muy bajas temperaturas
Name of the conference: XVII Encuentro de Superficies y Materiales Nanoestructurados. Bariloche
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
Date of event: 2017
Hermann Suderow.

11 **Title of the work:** Scanning tunneling microscopy of vortices in tilted fields.
Name of the conference: 16th international workshop on vortex matter.
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
Date of event: 2017
Hermann Suderow.

12 **Title of the work:** Visualizing the vortex lattice in two-effective-band, stoichiometric high Tc CaKFe4As4 superconductor.
Name of the conference: March meeting. Nueva Orleans
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
Date of event: 2017
Hermann Suderow.

13 **Title of the work:** Anisotropy and size of the superconducting vortex core.
Name of the conference: Workshop on nanoscale imaging of superconductivity
Type of participation: Participatory - invited/keynote talk

Corresponding author: Yes
City of event: Sas Fee, Switzerland
Date of event: 2016
Hermann Suderow.

14 **Title of the work:** Correlations and superconductivity in 2D
Name of the conference: 9th European School on Molecular Nanomagnetism
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Valladolid, Spain
Date of event: 2016
Hermann Suderow.

15 **Title of the work:** Interplay between structural domains, magnetic and superconductivity from low temperature scanning tunneling microscopy.
Name of the conference: Interference of magnetism and superconductivity. Natal. Institute of Physics.
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
Date of event: 2016
Hermann Suderow.

16 **Title of the work:** Vortex core size from low temperature scanning tunneling microscopy. 54. Interference of magnetism and superconductivity. Natal. Institute
Name of the conference: Nanoconfined superconductors and their applications. Garmisch-Partenkirchen
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
Date of event: 2016
Hermann Suderow.

17 **Title of the work:** Vortex core size from very low temperature scanning tunneling microscopy in one and two gap superconductors
Name of the conference: 3rd Toyota Riken International Workshop on vortex matter.
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
Date of event: 2016
Hermann Suderow.

18 **Title of the work:** Multiband Fermi surface, anisotropic gap structure and tilted vortices in layered superconductors
Name of the conference: Brazilian Physical Society Meeting 2015
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Iguazu, Brazil
Date of event: 2015
Hermann Suderow.

19 **Title of the work:** Scanning tunneling microscopy and spectroscopy in strongly correlated electron systems
Name of the conference: International conference on vortex matter in nanostructured superconductors
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Rhodes, Greece

Date of event: 2015
Hermann Suderow.

20 **Title of the work:** Scanning tunneling microscopy in strongly correlated electron systems
Name of the conference: WE Heraeus seminar Frontiers in Scanning Probe Microscopy
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Bad Honner, Germany
Date of event: 2015
Hermann Suderow.

21 **Title of the work:** Scanning tunneling spectroscopy of two-dimensional superconductors at very low temperatures
Name of the conference: Landau Institute. International workshop on localization, interactions and superconductivity
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Moscu, Russia
Date of event: 2015
Hermann Suderow.

22 **Title of the work:** Disorder and Coulomb interactions in quasi two dimensional superconductors
Name of the conference: Workshop on the superconductor to insulator transition
Type of participation: Participatory - invited/keynote talk
City of event: Villard de Lans, France
Date of event: 2014
Organising entity: UJF **Type of entity:** University
City organizing entity: Grenoble, France
H. Suderow.

23 **Title of the work:** On the tilted vortex lattice.
Name of the conference: Interplay between magnetism and superconductivity
City of event: Bordeaux,
Date of event: 2014
Organising entity: University Bordeaux **Type of entity:** University
City organizing entity: Bordeaux,
H. Suderow.

24 **Title of the work:** Semi-plenary talk. Scanning tunneling microscopy and spectroscopy in superconductors at very low temperatures
Name of the conference: Condensed Matter in Paris 2014, JMC 14 CMD 25
Type of participation: Participatory - invited/keynote talk
City of event: Paris, France
Date of event: 2014
H. Suderow.

25 **Title of the work:** Semi-plenary talk. Very low temperature scanning tunneling microscopy observation of the 2D vortex order-disorder transition
Name of the conference: International Conference in Low Temperature Physics, LT27
Type of participation: Participatory - invited/keynote talk
City of event: Buenos Aires, Argentina

Date of event: 2014
Organising entity: UBA **Type of entity:** University
City organizing entity: Buenos Aires,
H. Suderow.

26 **Title of the work:** Superconductivity and magnetism at the nanoscale
Name of the conference: International School of the IMPRS for Condensed Matter Science
Type of participation: Participatory - invited/keynote talk
City of event: Stuttgart, Germany
Date of event: 2014
Organising entity: Max Planck Stuttgart **Type of entity:** Public Research Body
City organizing entity: Stuttgart, Germany
H. Suderow.

27 **Title of the work:** Tilted vortex cores and the Fermi surface anisotropies
Name of the conference: Physics and applications of superconducting hybrid nanoengineered devices
Type of participation: Participatory - invited/keynote talk
City of event: Naples, Italy
Date of event: 2014
Organising entity: University naples **Type of entity:** University
H. Suderow.

28 **Title of the work:** 2D crystals and disordered superconducting systems
Name of the conference: 14th international workshop on vortex matter in superconductors. Mai 2013.
Type of participation: Participatory - invited/keynote talk
City of event: Nanjing, China
Date of event: 2013
H. Suderow. 2013.

29 **Title of the work:** Keynote talk. Vortex lattice visualization using scanning tunneling spectroscopy at very low temperatures
Name of the conference: VIII Vortex Summer School. October 2013.
Type of participation: Participatory - invited/keynote talk
City of event: Rhodes, Greece
Date of event: 2013
H. Suderow. 2013.

30 **Title of the work:** Scanning tunneling spectroscopy at very low temperatures
Name of the conference: 15th Czech and Slovak conference on magnetism.
Type of participation: Participatory - invited/keynote talk
City of event: Kosice,
Date of event: 2013
H. Suderow. 2013.

31 **Title of the work:** Scanning tunneling spectroscopy at very low temperatures in vortex lattices
Name of the conference: Modern trends in theory of quantum phase transitions
Type of participation: Participatory - invited/keynote talk
City of event: Bordeaux, France
Date of event: 2013
H. Suderow. 2013.

32 **Title of the work:** Scanning tunneling spectroscopy on disordered systems
Name of the conference: XVI National Conference of superconductivity
Type of participation: Participatory - invited/keynote talk
City of event: Zakopane, Poland
Date of event: 2013
H. Suderow. 2013.

33 **Title of the work:** Superconducting thin films and single layers studied by STM
Name of the conference: Workshop on high temperature superconductors
Type of participation: Participatory - invited/keynote talk
City of event: Planneralm, Austria
Date of event: 2013
Organising entity: University Wien **Type of entity:** University
H. Suderow.

34 **Title of the work:** Very low temperature scanning tunneling spectroscopy in superconductors
Name of the conference: International conference in superconductivity
Type of participation: Participatory - invited/keynote talk
City of event: Tokyo,
Date of event: 2013
H. Suderow.

35 **Title of the work:** Laboratorio de muy bajas temperaturas: cerca del cero absoluto
Name of the conference: CYTEF 2012.
Type of participation: Participatory - invited/keynote talk
City of event: Madrid, Spain
Date of event: 2012

36 **Title of the work:** Scanning tunneling conductance at very low temperatures in superconducting and insulating phases of ultra thin TiN films
Name of the conference: Workshop on unconventional insulators.
Type of participation: Participatory - invited/keynote talk
City of event: Argonne, USA,
Date of event: 2012
H. Suderow. 2012.

37 **Title of the work:** Scanning tunneling microscopy of the vortex lattice
Name of the conference: M2S 2012
Type of participation: Participatory - invited/keynote talk
City of event: Washington, USA, Canada
Date of event: 2012
H. Suderow. 2012.

38 **Title of the work:** Cryogenic scanning probe microscopy. Atomic scale precisión in a cryogenic environment
Name of the conference: 23rd International congress of refrigeration.
Type of participation: Participatory - invited/keynote talk
City of event: Prague, Cheque republic,
Date of event: 2011
H. Suderow. 2011.

39 **Title of the work:** Scanning tunneling microscopy at very low temperatures
Name of the conference: ESMOLNA 2011
Type of participation: Participatory - invited/keynote talk
City of event: Peñiscola, Spain
Date of event: 2011
H. Suderow. 2011.

40 **Title of the work:** Very low temperature scanning tunneling spectroscopy of the vortex lattice: order-disorder transition.
Name of the conference: Mesoscopic superconductivity and vortex imaging
Type of participation: Participatory - invited/keynote talk
City of event: Bath, UK,
Date of event: 2011
H. Suderow. 2011.

41 **Title of the work:** Scanning tunneling spectroscopy of the vortex lattice.
Name of the conference: Fuerzas y Túnel 2010.
Type of participation: Participatory - invited/keynote talk
City of event: Tarragona, Spain,
Date of event: 2010
H. Suderow. 2010.

42 **Title of the work:** Scanning tunneling spectroscopy in heavy fermion superconductors.
Name of the conference: On the heavy fermion road.
Type of participation: Participatory - invited/keynote talk
City of event: Paris, France,
Date of event: 2010

43 **Title of the work:** Scanning tunneling spectroscopy in strongly correlated electron systems
Name of the conference: New generation of strongly correlated electron systems.
Type of participation: Participatory - invited/keynote talk
City of event: Lanzarote, Spain
Date of event: 2010
H. Suderow. 2010.

44 **Title of the work:** Scanning tunneling spectroscopy in superconductors at very low temperatures.
Name of the conference: International Vacuum Congress
Type of participation: Participatory - invited/keynote talk
City of event: Beijing, China.,
Date of event: 2010
H. Suderow. 2010.

45 **Title of the work:** STM in superconductors at very low temperatures.
Name of the conference: Emergent behavior in correlated systems.
Type of participation: Participatory - invited/keynote talk
City of event: Krakow, Poland.,
Date of event: 2009

46 **Title of the work:** Scanning tunneling microscopy imaging of the vortex lattice.
Name of the conference: Vortex matter in nanostructured superconductors
Type of participation: Participatory - invited/keynote talk

City of event: Rhodes, Greece,
Date of event: 2009
H. Suderow. 2009.

47 **Title of the work:** Superconductivity studied by scanning tunneling spectroscopy at very low temperatures.
Name of the conference: First European School on Molecular Nanoscience
Type of participation: Participatory - invited/keynote talk
Date of event: 2008
H. Suderow. 2008.

48 **Title of the work:** Interplay between superconductivity and charge order in the transition metal dichalcogenides
Name of the conference: New materials, new techniques and new ideas in strongly correlated electron systems
Type of participation: Participatory - invited/keynote talk
Date of event: 2008
H. Suderow. 2008.

49 **Title of the work:** Nanoscale superconducting properties of amorphous W-based deposits grown with focused-ion-beam.
Name of the conference: IV International Workshop on Nanomagnetism.
Type of participation: Participatory - invited/keynote talk
Date of event: 2008
H. Suderow. 2008.

50 **Title of the work:** Superconductivity and charge order: Intrinsic atomic scale modulations of the superconducting density of states.
Name of the conference: Probing superconductivity the Nanoscale.
Type of participation: Participatory - invited/keynote talk
City of event: Alicante, Spain,
Date of event: 2008
H. Suderow. 2008.

51 **Title of the work:** "Cerca del cero absoluto: física de bajas y muy bajas temperaturas". Invited lecture. Superconductividad en materiales magnéticos
Name of the conference: Curso de Verano en El Escorial.
Type of participation: Participatory - invited/keynote talk
Date of event: 2007
H. Suderow. 2007.

52 **Title of the work:** Local Tunneling Spectroscopy at millikelvin temperatures: Multiband effects, and coexistence of superconductivity and magnetism in the nanoscale.
Name of the conference: Vortex Matter in nanostructured superconductors
Type of participation: Participatory - invited/keynote talk
City of event: Rhodes,
Date of event: 2007
H. Suderow. 2007.

53 **Title of the work:** Scanning tunnelling microscopy and spectroscopy at 100 mK: Local density of states, vortex lattice and superconducting tips
Name of the conference: II International workshop on nanomagnetism, Coma-Ruga

Type of participation: Participatory - invited/keynote talk
Date of event: 2006
H. Suderow. 2006.

54 **Title of the work:** Very low temperature Scanning Tunneling Spectroscopy in magnetic superconductors.
Name of the conference: USA-Spain workshop on nanomaterials
Type of participation: Participatory - invited/keynote talk
City of event: Segovia,
Date of event: 2005
H. Suderow. 2005.

55 **Title of the work:** Local Tunneling Spectroscopy in superconductors at very low temperatures
Name of the conference: Spectroscopies in novel superconductors,
Type of participation: Participatory - invited/keynote talk
Date of event: 2004
H. Suderow. 2004.

56 **Title of the work:** Phonon mediated superconductivity induced by Fermi surface nesting in the Y and Lu Nickel borocarbides
Name of the conference: Intrinsic inhomogeneities in strongly correlated electron systems. Santander
Type of participation: Participatory - invited/keynote talk
Date of event: 2003
H. Suderow. 2003.

57 **Title of the work:** Advances and future prospects of spin dependent transport and local magnetization measurements with very low temperature STM
Name of the conference: Workshop on magnetic tunnel junctions M2TPS
Type of participation: Participatory - invited/keynote talk
Date of event: 2003
H. Suderow.

58 **Title of the work:** Scanning tunneling spectroscopy at very low temperatures
Name of the conference: New Theories and discoveries in High Tc superconductors and related materials
Type of participation: Participatory - invited/keynote talk
City of event: San Diego,
Date of event: 2003
H. Suderow. 2003.

59 **Title of the work:** Scanning tunneling spectroscopy in superconductors below 1K: nanostructures and nanoscale phenomena
Name of the conference: Spin and Charge transport in nanostructures, Braga
Type of participation: Participatory - invited/keynote talk
Date of event: 2003
2003.

60 **Title of the work:** Scanning tunneling spectroscopy in MgB2 and the borocarbides
Name of the conference: March Meeting of the American Physica Society, Indianapolis, March 2002
Type of participation: Participatory - invited/keynote talk
Date of event: 2002
2002.

61 **Title of the work:** Espectroscopía túnel local en un superconductor magnético: Interacción-competición entre la superconductividad y el magnetismo.
Name of the conference: Reunión de la Sección de Estado Sólido de la Real Sociedad de Física Española. Madrid, Febrero 2001
Type of participation: Participatory - invited/keynote talk
Date of event: 2001
H. Suderow. 2001.

62 **Title of the work:** Keynote lecture. Tunneling Spectroscopy in Superconductors.
Name of the conference: Summer School on "Vortex Matter in Superconductors" Crete-Greece, September 2001.
Type of participation: Participatory - invited/keynote talk
Date of event: 2001
2001.

63 **Title of the work:** Superconducting properties of nanostructured necks under magnetic fields
Name of the conference: TMR Conference on "Phase Coherent Dynamics in Hybrid Nanostructures" Cargese, Mai 2000.
Type of participation: Participatory - invited/keynote talk
Date of event: 2000
2000.

64 **Title of the work:** Superconductivity under Magnetic Fields in Nanobridges of Lead
Name of the conference: Euroconference on "Vortex Matter in Superconductors" Crete-Greece, September 1999
Type of participation: Participatory - invited/keynote talk
Date of event: 1999
1999.

65 **Title of the work:** The vortex phases of heavy fermion superconductors probed by thermal conductivity
Name of the conference: International Workshop “Vortices in Exotic Systems” dedicated to the 70th anniversary of A.A. Abrikosov. Bordeaux, October 1998.
Type of participation: Participatory - invited/keynote talk
Date of event: 1998
1998.

66 **Title of the work:** These are invited talks delivered by myself. Further contributions include 10 talks in international meetings and over 15 poster presentations. I also delivered more than 25 invited talks in laboratories such as the Van der Waals-Zeeman colloquium in Amsterdam, colloquia in Ames Laboratory, in Tokyo, in Stuttgart (Max-Planck Institute), in Grenoble and in several places in Spain.

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

1 **Committee title:** C5 Commission of IUPAP
Primary (UNESCO code): 221127 - Superconductors
Start-End date: 2018 - 2020

2 **Committee title:** Advisory board of the "Scientific Park of Madrid"
Affiliation entity: Universidad Autonoma de Madrid and Universidad Complutense de Madrid
Start date: 2013

3 **Committee title:** A1 Commission of the International Institute of Refrigeration (http://www.iifiir.org/com/members.php?com=A1)
Geographical area: Non EU International
Affiliation entity: http://www.iifiir.org

4 **Committee title:** COST P-16, ECOM, “Emergent behavior in condensed matter”. Coordinador del grupo de trabajo “Experimental techniques” (http://ecom.tuwien.ac.at/58.0.html).

5 **Committee title:** Member (vocal) of GEFES of RSEF
Primary (UNESCO code): 221100 - Solid state physics
Affiliation entity: RSEF **Type of entity:** Associations and Groups
City affiliation entity: Spain

6 **Committee title:** Member of DPG, APS and Spanish Physical Society

7 **Committee title:** Steering committee of COST MP-1201, NanoSC, “Nanoscale superconductivity”. Coordinador of “Design and characterization” (http://www.kuleuven.be/inpac/cost/index.php).

Organization of R&D activities

1 **Title of the activity:** Co-chair of CMD2020GEFES, http://www.cmd2020gefes.eu/
Type of activity: Organization of meetings **Geographical area:** European Union
Convening entity: EPS-RSEF
Start-End date: 31/08/2020 - 04/09/2020 **Duration:** 5 days

2 **Title of the activity:** Co-organizer of the Nicolas Cabrera Summer School 2019, www.uam.es/inc
Type of activity: Summer School **Geographical area:** European Union
Convening entity: Universidad Autónoma de Madrid **Type of entity:** University
City convening entity: Madrid, Community of Madrid, Spain
Start-End date: 08/09/2019 - 13/09/2019 **Duration:** 5 days

3 **Title of the activity:** Co-organizer of Superconductivity meets molecular spins
Type of activity: workshop,
http://nanocohybri.eu/superconductivity-meets-molecular-spins-20-22-march-2019/
Start-End date: 20/03/2019 - 22/03/2019 **Duration:** 3 days

4 **Title of the activity:** Vortex 2015
Type of activity: Workshop organization **Geographical area:** European Union
City convening entity: El Escorial, Spain
Type of participation: Chairman
Start-End date: 10/05/2015 - 15/05/2015

5 **Title of the activity:** School on quantum materials and workshop on vortex behavior in unconventional superconductors
Type of activity: Summer school **Geographical area:** European Union
City convening entity: Braga
Start date: 10/2018 **Duration:** 5 days

6 **Title of the activity:** Workshop Advances in Nanostructured Superconductors, http://
www.nicolascabrera.es/index.php/es/otras-actividades/workshops/350-qadvances-in-nanostructured-superconductorsq
Type of activity: Workshop **Geographical area:** European Union
Convening entity: COST MP1201
Start date: 05/2014 **Duration:** 5 days

7 **Title of the activity:** Workshop “Science and technology at high magnetic fields”, Miraflores de la Sierra, November 2012.
Type of activity: Workshop co-chairman
Start date: 2012

8 **Title of the activity:** “La superconductividad: cien años ganando actualidad”.
http://www.uam.es/superconductividad2011.
Type of activity: Co-director
Start date: 2011

9 **Title of the activity:** Cryoconference 2008 (www.uam.es/cryoconference).
Type of activity: Co-chairman
Start date: 2008

10 **Title of the activity:** VI International Summer School Nicolás Cabrera Strongly Correlated Electrons (http://www.uam.es/inc/) del Instituto Universitario de Ciencia de Materiales “Nicolás Cabrera” de la Universidad Autónoma de Madrid, junto con R. Villar, J.C. Gomez-Sal y F. Aliev.
Type of activity: Co-organizer
Start date: 2008

11 **Title of the activity:** XV International “N. Cabrera” Summerschool 2008.
100 years of liquid helium: new physics at the edge of absolute zero”
(http://www.nicolascabrera.es/index.php/es/escuelas-anteriores/58-escuela-verano-2008).
Type of activity: Co-Chairman
Start date: 2008

12 **Title of the activity:** workshop “Probing superconductivity at the nanoscale”
Type of activity: Member of the organizing committee
Start date: 2008

13 **Title of the activity:** Stays in Madrid of J. Flouquet (3 weeks), V. Vinokur (2 times one month) and P.C. Canfield (two months).
Type of activity: Main organizer

R&D management

1 **Name of the activity:** Gestor del Plan Estatal
Type of management: Management of R&D&I actions and projects
Performed tasks: Management of the evaluation of the projects of the Spanish State funding agency
Entity: Agencia Estatal de Investigacion
Start date: 2015 **Duration:** 3 years

2 **Name of the activity:** Coordinator of the Advanced Materials section at IFIMAC
Type of management: Group management
Entity: Uniersidad Autonoma de Madrid **Type of entity:** University
Start date: 2013

3 **Name of the activity:** Nicolas Cabrera Institute
Type of management: Management of body
Performed tasks: Director
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Start date: 11/2011

4 **Name of the activity:** SEGAINVEX. Service for support of experimental sciences
Performed tasks: Scientific councillor
Entity: Universidad Autónoma de Madrid **Type of entity:** University
Start date: 2010

5 **Name of the activity:** Association UAM-CSIC on "Low temperature physics and high magnetic fields"
Performed tasks: Secretary until 2013, IP from 2013
Entity: Universidad Autonoma de Madrid and Consejo Superior de Investigaciones Cientificas

Other achievements

Stays in public or private R&D centres

1 **Entity:** CEA Grenoble
Duration: 4 years
Goals of the stay: Doctorate

2 **Entity:** Several one or two week stays at Universities or Research institutes in Leuven, Antwerp, Grenoble, Bordeaux, Tokyo, Argonne, Stuttgart.
Goals of the stay: Guest

3 **Entity:** Universidad Autónoma de Madrid
Duration: 2 years
Goals of the stay: Post-doctoral

Summary of other achievements

1 **Description of the achievement:** Referee of FET-Open (6 projects)
Accrediting entity: FET-Open **Type of entity:** European Funding Agency
Conferral date: 2019

2 **Description of the achievement:** Teaching innovation project: Diseño y evaluacion de acciones transversales para introducir la perspectiva de género en la docencia en física
Accrediting entity: Universidad Autónoma de Madrid **Type of entity:** University
Conferral date: 2019

3 **Description of the achievement:** Fellow of the American Physical Society
Accrediting entity: APS
Conferral date: 2017

4 **Description of the achievement:** Acreditacion Catedratico Universidad
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** others
Conferral date: 2015

5 **Description of the achievement:** Panel member of spanish funding agency (2012 and 2013)
Accrediting entity: MINECO
Conferral date: 2013

6 **Description of the achievement:** Referee for funding agencies ERC (EU), DFG (Germany), EPSRC (UK) ANR (France), Royal Society (UK), FWO (Belgium), Dutch funding agency, La Caixa, and ANECA.
Conferral date: 2013

7 **Description of the achievement:** Referee of Science, Science Adv, Nat Phys, Nat. Comm., Physical Review (Letters and B), Europhysics Letters, Physica B, IOP (Journal of Physics Condensed Matter, Superc. Sci. Technolog., New Journal of Physics,Sci. Rep.
Conferral date: 2013

8 **Description of the achievement:** Commission "materials and nanoscience" of the excellence initiative UAM+CSIC.
Conferral date: 2012

9 **Description of the achievement:** Coordinator of fourproposals to FP7 ITN calls, involving several EU research groups and companies. Proposals were ranked above threshold all times, without receiving support.
Conferral date: 2012

10 **Description of the achievement:** Director of the teaching innovation project “Internacionalización del programa oficial de posgrado en Física de la Materia Condensada y Nanotecnología de la UAM: diseño e implantación de asignaturas en inglés”. Convocatoria de desarrollo de enseñanzas UAM 2011.
Accrediting entity: Universidad Autónoma de Madrid **Type of entity:** University
Conferral date: 2011

11 **Description of the achievement:** Member of Faculty and University senates since november 2011
Accrediting entity: Universidad Autónoma de Madrid **Type of entity:** University
Conferral date: 2011

12 **Description of the achievement:** New helium liquefaction facility for the UAM Campus (2009). Extension of high pressure storage (2013)
Conferral date: 2009

13 **Description of the achievement:** Organizer of sabbatical stay of Prof. V. Tissen (SAB2009-0057).
Conferral date: 2009

14 **Description of the achievement:** Century of liquid helium: preparation and transportation to Seville of macroscopic quantum phenomena experiments with liquid helium. Talk for faculty and students. Real Academia Sevillana de las Ciencias. Observación directa de fenómenos cuánticos macroscópicos en helio líquido
Conferral date: 2008

15 **Description of the achievement:** National competitive "Habilitation" in the area "condensed matter physics"
Conferral date: 2004

16 **Description of the achievement:** Positive evaluation for being hired as Profesor Contratado Doctor (PCD 2004-69), el 4 de Marzo de 2004.
Conferral date: 2004

17 **Description of the achievement:** Several articles of scientific dissemination, Oxford Instruments “Research Matters”, Gazette UAM, Investigación y Ciencia, 2Physics.com
Conferral date: 2003

18 **Description of the achievement:** Best poster presentation in LT23 (Hiroshima).
Conferral date: 2002

19 **Description of the achievement:** Dissemination activities. Organizer of visits of scholars, youtube videos, master courses, visits of external lecturers

20 **Description of the achievement:** Organizer of open days since 2009, sometimes with 400 high school pupils attending the lab.

21 **Description of the achievement:** Organizer of the stay of PC Canfield in Madrid, http://www.uam.es/otros/fmcyn/CanfieldsStayinMadrid.pdf

22 **Description of the achievement:** Post docs I. Guillamon (now in Madrid), E. Herrera (now in Madrid), R.F. Luccas (now at Rosario, Argentina), M.R. Osorio (now in IMDEA-Nano).

23 **Description of the achievement:** Various international collaborations (Grenoble, Stuttgart, Paris, Leuven y Antwerp, Cambridge), Japón (Tokio, Osaka) y USA (Ames, Berkeley, Argonne, Stanford).

24 **Description of the achievement:** Web pages www.lbtuam.es, www.nicolascabrera.es, www.citecnomik.es, and channels http://www.youtube.com/user/InstitutoNC and http://www.youtube.com/user/citecnomik1.