Daniel Margineda de Godos

Personal Data

Address

Phone
E-mail
Websites

Work Experience

02/2020 - current	**Post-doctoral researcher, Paul Scherrer Institut.**, Villigen, Switzerland. Project: investigate quantum phase transitions in magnetic and superconducting materials. Fabricate mesoscopic devices in 2DEG heterostructures. Transport and magnetic characterization. Commission a sputtering system.
09/2017 - 10/2019	**Physicist, York Instruments Ltd.**, York, United Kingdom. Duties: development and Fabrication of Hybrid Superconducting Quantum Interference Devices (Hy-QUIDs) for magnetoencephalographic scanners (MEGSCAN). Bench-test experiments at cryogenic temperatures and Python control of instrumentation and data analysis. Correlations with theoretical predictions and design improvements based on theory and experiments. Project management.
09/2013 - 03/2017	**Teaching Assistant (TA/GA), Cardiff University**, Cardiff, United Kingdom. Objective: undergraduate courses. (Experimental Physics I and II)
01/2013 - 03/2013	**Physicist, Serviciencia,S.L.**, Yuncos, Toledo, Spain. Objective: Labview engineering software developer for magnetic sensors. New magnetic solutions. Electronic devices.
10/2008 - 10/2012	**Physicist, Instituto de Ciencia de Materiales**, Madrid, Spain. Research: development of a static and time-resolved magnetooptic Kerr-effect magnetometer (picosecond TRMOKE). Line manager: Dr. Jesús González Fernández. Keywords: Electroptic devices, pulsed lasers, fibre optic, transmission lines, high field magnetometers (VSM, SQUID). Pulse laser deposition (PLD)
08/2007 - 09/2008	**Physicist, Instituto de Magnetismo Aplicado**, Las Rozas, Madrid, Spain. Research: Investigation of magnetic microwires with RF absorption properties. Line manager: Dr. Pilar Marin Palacios. Keywords: virtual network analyser,magnetostriction, structural and magnetic characterization.
01/2007 - 07/2007	**Grant Holder, Isofoton**, Madrid, Spain. Research: study of photovoltaic cells to improve safety measures against hot spots formation. Supervisor: Dr. P. Sanchez-Friera (Isofoton) M.C Garcia Alonso (CIEMAT). Keywords: photovoltaics, semiconductors.

06/2006 - 01/2007	**Grant Holder, Universidad Complutense**, Madrid, Spain. Duties: maintenance and development of School website

Education

09/2013 - 09/2017	**PhD, Cardiff University**, Cardiff, UK, Dr. S.R.Giblin. Research: low temperature magnetism and superconductivity at high frequencies. Thesis title: "Investigations of Spin Dynamics in Magnetic Systems and Development of Novel Probes".
07/2006 - 09/2007	**MSc Applied Physics, Universidad Complutense - Ciemat**, Madrid, Spain. Research: nanomaterials; semiconductors; renewable energies. Msc, Thesis title: "Study of Photovoltaic Cells to Improve Safety Measures against Hot Spots Formation". (under M.C. Garcia Alonso)
09/2000 - 09/2006	**BSc Physics, Universidad Complutense**, Madrid, Spain

Conferences,Grants, Awards and Training Courses

02/2021	LENS Machine Learning School 2021 organised by ISIS/STFC .
09/2019	Superconducting Quantum Devices SQD 2019 .
01/2019	Innovate UK Grant.
11/2018	Business Start-up Award 2018 (Institute of Physics).
02/2017	Muon Spectroscopy at Low Temperatures Symposium and User Meeting.
04/2016	Superconductors-based Sensors and Quantum Technologies Workshop. (SBS-QT16).
03/2016	APS March Meeting.
03/2016	UK Magnetic Society Student bursary
2015	iSolve Cardiff University programme to investigate the commercial potential of research advances.
05/2014	ISIS Muon Training School 2014 http://www.isis.stfc.ac.uk/groups/muons/muon-training-school/muon-training-school-201414926.html
03/2014	ISIS Neutron Training Course 2014 http://www.isis.stfc.ac.uk/learning/neutron-training-course/isis-neutron-training-course-20149135.html
09/2009	European School on Magnetism 2009 http://magnetism.eu/esm/2009/
01/2007	Isofoton grant to study safety measure against hot spots formation in photovoltaic cells

Topic of interest and Skills

Languages	English (fluent), Spanish (fluent), Italian (intermediate), German (basic).
Experimental Skills	**Fabrication techniques:** e-beam and photo-lithography, sputtering, thermal evaporation, wet and dry etching. **Characterization techniques:** XRD, Hall effect, SEM, AFM, photoluminescence, XRR, PEEM. **Low Temperature Physics:** cryocoolers, dilution refrigerators, vacuum technologies. **Magnetometry:** surface and time-resolved magneto-optic Kerr effect (TR-MOKE). AC and DC magnetometry (SQUID, VSM, MPMS-PMMS). **Muon Spectroscopy μSR:** experience in pulsed (ISIS) and continuous (PSI) muon spectroscopy facilities: ultra low temperature μSR (MUSR-ISIS LTF-PSI); pump-probe μSR (RF-EMU); laser-μSR (HIFI-ISIS); Dolly,GPS-PSI. **Neutron Scattering:** neutron diffraction, inelastic neutron scattering. small angle neutron scattering (SANS). Investigations of crystalographic and magnetic structure and phase transitions. Mantid software.
Programming skills	Labview, Python, Latex, Originlab, Matlab, Comsol, Ansys.
Topic of interest	Superconducting quantum technologies. Hybrid mesoscopic devices. Microscopic sensors. Novel magnetism. Medical devices.

Publication List

[1] D. Billington, E. Riordan, M. Salman, D. Margineda, G. Gill, S. Cotrell, I. McKenzie, T. Lancaster, M. Graf and S. Giblin, *Radio-frequency manipulation of state populations in a coupled muon- fluorine system*, Submitted (2021)

[2] D. Margineda, J. Weaver, F. Quevjanaj and C. Checkley, *Anomalous Josephson Effect in Non-magnetic Andreev Interferometers*, arXiv:2105.13968 [cond-mat.supr-con] (2021)

[3] E. Riordan, J. Blomgren, C. Jonasson, F. Ahrentorp, C. Johansson, D. Margineda, A. Elfassi, S. Michel, F. Dellova, G. M. Klemencic and S. R. Giblin, *Design and implementation of a low temperature, inductance based high frequency alternating current susceptometer*, Review of Scientific Instruments 90 (7), p. 073908 (2019)

[4] D. Margineda, J. Duffy, J. Taylor and S. Giblin, *μSR study of stoichiometric $NbFe_2$*, Physica B: Condensed Matter 504, p. 121 (2017)

[5] M. Graf, S. Disseler, C. Dhital, T. Hogan, M. Bojko, A. Amato, H. Luetkens, C. Baines, D. Margineda, S. Giblin *et al.*, *Magnetism and magnetic order in the pyrochlore iridates in the insulator-to-metal crossover region*, Journal of Physics: Conference Series 551 (1), p. 012020 (2014)

[6] C. Aguilera, J. González, A. Borrás, D. Margineda, J. González, a.R. González-Elipe and J. Espinós, *Preparation and characterization of CrO2 films by Low Pressure Chemical Vapor Deposition from CrO3*, Thin Solid Films 539, p. 1 (2013)

[7] H. Bustos, D. Oyola, Y. Rojas, G. Perez Alcazar, J. Gonzalez and D. Margineda, *Evidence of dipolar magnetic field in mechanically alloyed $Fe_{50}Al_{50}$ samples*, J. Alloys Compd. 536, p. S377 (2012)

[8] D. Margineda, M. Alonso-García and P. Sánchez-Friera, *Analysis of the thermal and electrical behavior of commercial photovoltaic cells in inverse operation*, in *Construyendo el futuro sostenible: XIV Iberian Congress and IX Latin American of Solar Energy. Vigo, Galicia, Spain* (2008), p. 721