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Personal InformationsBirth Date: 10th September 1981**Current position**

Associate Research Fellow
College of Engineering, Mathematics & Physical Sciences
University of Exeter, UK

Education

2012 PhD in Physics.

Thesis title: Defect and dopants in carbon related materials.

University of Exeter, United Kingdom.

Supervisor: Professor Robert Jones.

2008: Master of Physics in Advanced Materials , Theoretical and Computational Methods on Condensed Matter, at the University of Minho, Portugal.

Thesis title: Optical properties of TiC_xO_y from ab-initio calculations.

Supervisor: Luis Silvino Marques.

2005: BSc in Physics, University of Minho, Portugal.

Graduation thesis at the Physics Department of University of Aveiro, Portugal.

Thesis title: : Ab-initio studies of defects in germanium.

Supervisor: José Pedro Coutinho.

Previous experience

2011-2012: Research Fellow. Hungarian Academy of Sciences, Wigner Research Centre for Physics Institute for Solid State, Physics and Optics Budapest, Hungary.

Ab initio study of luminescent defects in diamond.

2007-2008: Researcher in the Computational and Theoretical Physics Group at University of Minho, Portugal.

2006-2007: Researcher at Agilus Institute for Innovation in Information Technologies, modelling the optical properties of thermochromic thin films in the framework of the European project TERMOGLAZE.

2005-2006: Graduation thesis at Physics Department of University of Aveiro, Portugal.

2003-2006: Development of 3D model for the simulation of thin film growth using Monte Carlo techniques. The model was developed in Fortran 90 using parallel computing (MPI). This project was carried out in collaboration with CERN and supported by FCT (DeCsI - Degradation of RICH CsI Detectors).

Supervisor: Ricardo Mende Ribeiro.

2003: Summer Student in the HMPID group of the ALICE experiment at CERN (European Organization for Nuclear Research). Project title: Study of the quantum efficiency of CsI thin films for photocathodes applications in the UV region.

Supervisor: Emile Schyns and Herbert Hödlmoser.

2001-2003: Characterization of SnO_2 thin films produced by DC sputtering for gas sensor applications in the Functional Coatings Group at University of Minho, Portugal.

Supervisor: José Miguel Correia Pires and Vasco Teixeira.

Computer skills and competences

Applications – LaTeX, GNUPLOT, VIM, Mathematica, Origin, Microsoft Office, Dreamweaver, OpenGL, GNUPLOT and Message Passing Interface.

Programming languages – Excellent skills in Fortran and basic knowledge in C. Very good experience in parallel computing (MPI).

Operative Systems – Mac-Os, Linux and Microsoft Windows

Experience using AiMPRO and VASP.

Teaching Experience

Postgraduate Demonstrator. Regularly supervise practicals for undergraduate students.

Awards

Author of the paper *p-type doping of graphene with F4-TCNQ* awarded by the Journal of Physics: Condensed Matter for the Highlights of 2009.

Honorable mention in the VI National Meeting of Physics Students (2004).

Prize for the best presentation in the IV National Meeting of Physics Students (2002).

Participation in projects

Polifilm

Project nr. PTDC/CTM/69362/2006

Funding by Fundação para a Ciência e a Tecnologia

From September 2007 to August 2008

Termoglaze

Project nr. COOP – CT – 2005 -017761

Funding by European Union

From September 2006 to August 2007

DeCsI - Degradation of RICH CsI Detectors

Project nr. POCI/FP/63442/2005

Funding by Fundação para a Ciência e a Tecnologia

From October 2005 to December 2006

Publications

Thermodynamic stability and electronic properties of F- and Cl-terminated diamond

Amit K. Tiwari, J. P. Goss, P. R. Briddon, Nicholas G. Wright, Alton B. Horsfall, R. Jones, H. Pinto, M. J. Rayson

Phys. Status Solidi (a), **209** (9) 1709 (2012)

On the diffusion of NV defects in diamond

H. Pinto, R. Jones, D. W. Palmer, J. P. Goss and P. R. Briddon, S. Oberg

Phys. Status Solidi (a), **209** 1765 (2012)

First-principles studies of the effect of (001) surface terminations on the electronic properties of the negatively charged nitrogen vacancy defect in diamond

H. Pinto, R. Jones, D. W. Palmer, J. P. Goss and P. R. Briddon, S. Oberg

Phys. Rev. B, **86** 045313 (2012)

Calculated electron affinity and stability of halogen-terminated diamond

Amit K. Tiwari, J. P. Goss, P. R. Briddon, Nick G. Wright, Alton B. Horsfall, R. Jones, H. Pinto, M. J. Rayson

Physical Review B, **84** 245305 (2011)

Ab initio studies of fluorine passivation on the electronic structure of the NV⁻ defect in nanodiamond

H. Pinto, R. Jones, D. W. Palmer, J. P. Goss and P. R. Briddon, S. Oberg
Journal of Nanoscience and Nanotechnology, accepted

Theory of the surface effects on the luminescence of the NV⁻ defect in nanodiamond

H. Pinto, R. Jones, D. W. Palmer, J. P. Goss and P. R. Briddon, S. Oberg
Phys. Status Solidi (a), **208** 9 (2011) 2045

Point and extended defects in chemical vapour deposited diamond

H. Pinto, R. Jones, J. P. Goss and P. R. Briddon
Journal of Physics: Conference Series, **281** (2011) 012023

Unexpected change in the electronic properties of the Au-graphene interface caused by toluene

H. Pinto, R. Jones, J. P. Goss and P. R. Briddon
Phys. Rev. B, **82** (2010) 125407

Mechanisms of doping graphene

H. Pinto, R. Jones, J. P. Goss and P. R. Briddon
Phys. Status Solidi (a), **207** (2010) 2131

Theory of graphene

H. Pinto, R. Jones, J. P. Goss and P. R. Briddon
Ibergrid (2010) 109. isbn:978-84-9745-549-7

Optically active point defects in high quality single crystal diamond

J. P. Goss and P. R. Briddon, H. Pinto, R. Jones
Phys. Status Solidi (a), **207** (2010) 2049

p-type doping of graphene with F4-TCNQ

H. Pinto, R. Jones, J. P. Goss and P. R. Briddon
J. Phys.: Condens. Matter, **21** (2009) 402001

First principles study of point defects in titanium oxycarbide

L. Marques, H. M. Pinto, F. Vaz, M. M. D. Ramos
Materials Science and Engineering B **165** (2009) 194

Theory of the birefringence due to dislocations in single crystal CVD diamond

H. Pinto and R. Jones
J. Phys.: Condens. Matter **21** (2009) 364220.

Optical properties of titanium oxycarbide thin films

L. Marques, H. M. Pinto, A. C. Fernandes, O. Banakh, F. Vaz, M. M. D. Ramos
Applied Surface Science, **255** (2009) 5615.

Determination of the Optical Constants of VO₂ and Nb-doped VO₂ thin films

H. M. Pinto, J. Correia, R. Binions, C. Piccirillo, I. P. Parkin and V. Teixeira
Materials Science Forum, **587** (2008) 640

Formation energy and migration barrier of a Ge vacancy from ab-initio studies

H. M. Pinto, J. Coutinho, V. J. B. Torres, S. Oberg, and P. R. Briddon
Mater. Sci. Semicond. Process., **9** (2006) 498

Talks

Luminescence intermittency in nitrogen-vacancy centre in diamond: a novel approach for charge dynamics

SBDD XVII-Hasselt Diamond Workshop 2012, Hasselt, Belgium (2012)

Ab initio studies of different surface terminations on the electronic properties of NV⁻ in diamond
NanoteC11 Carbon Nanoscience and Nanotechnology, Nantes, France (2011)

Surface effects on the luminescence of the NV⁻ in diamond
The 62nd diamond conference, Warwick, UK (2011)

Influence of different surfaces on the electronic levels of the NV⁻ defect in diamond
NanoTP WG4, Glasgow, UK (2011)

Influence of the surface and crystal size on the luminescence properties of the NV⁻ defect in diamond
E-MRS 2011 Spring Meeting, Nice, France (2011)

Broadening of the photoluminescence due to NV- defects in nanodiamonds
The 61st diamond conference, Warwick, UK (2010)

Mechanisms of doping graphene
E-MRS 2010 Spring Meeting, Strasbourg, France (2010)

Theory of doping graphene
IBERGRID Conference, Braga, Portugal (2010)

p-type doping of graphene with F4-TCNQ
AIMPRO conference 2010, Nottingham, UK (2010)

Molecular p-type doping of graphene with F4-TCNQ and n-type co-doping with toluene/Au
Physics Department, University of Minho, Portugal (2010)

Modelization of CsI thin film growth
International Conference for Physics Students, Novi Sad, Serbia Montenegro (2004)

Modelization of thin film growth
VI Encontro Nacional de Estudantes de Física, Braga, Portugal (2002)

CsI thin films for photocathodes applications in RICH detectors
V Jornadas do Grupo de Revestimentos Funcionais, Braga, Portugal (2003)

CsI thin films for photocathodes applications
Summer Student Lecture Programme 2003, CERN, Switzerland (2003)

Thin films of SnO₂ for gas sensor applications
International Conference for Physics Students, Budapest, Hungary (2002)

Thin films deposition
IV Encontro Nacional de Estudantes de Física, Braga, Portugal (2002)

Posters

On the diffusion of NV defects in diamond

H. Pinto, R. Jones, D. W. Palmer, J. P. Goss and P. R. Briddon, S. Oberg
SBDD XVII-Hasselt Diamond Workshop 2012, Hasselt, Belgium (2012)

Theoretical studies of mechanisms of doping graphene

H. Pinto, R. Jones, J. P. Goss and P. R. Briddon
Topical Research Meetings on Physics: Graphene and Related Two-Dimensional Materials, London, UK (2011)

Theory of the surface effects on the luminescence of the NV– defect in nanodiamond

H. Pinto, R. Jones, D. W. Palmer, J. P. Goss and P. R. Briddon, S. Oberg
SBDD XVI-Hasselt Diamond Workshop 2011, Hasselt, Belgium (2011)

Mechanisms of graphene doping

H. M. Pinto, R. Jones, P. R. Briddon
SBDD XV-Hasselt Diamond Workshop 2010, Hasselt, Belgium (2010)

Optically active point defects in high quality single crystal diamond

J. P. Goss, P. R. Briddon, H. M. Pinto, R. Jones
SBDD XIV-Hasselt Diamond Workshop 2009, Hasselt, Belgium (2010)

Doping of graphene by toluene

A. A. Kaverzin, F. Withers, A. S. Price, S. M. Strawbridge, A. K. Savchenko, H. Pinto, R. Jones
Graphene Tokyo 2009, University of Tokyo, Japan (2009)

Doping of graphene by toluene

A. A. Kaverzin, F. Withers, A. S. Price, S. M. Strawbridge, A. K. Savchenko, H. Pinto, R. Jones
18th Electronic Properties of 2 Dimensional Systems, Kobe, Japan (2009)

Birefringence and dislocations in single crystal CVD diamond

H. M. Pinto, R. Jones, P. M. Martineau, M. P. Gaukroger
Warwick, United Kingdom (2009)

Birefringence and dislocations in single crystal CVD diamond

H. M. Pinto, R. Jones, P. M. Martineau, M. P. Gaukroger
SBDD XIV-Hasselt Diamond Workshop 2009, Hasselt, Belgium (2009)

Study of Point Defects in Titanium Oxycarbides

H. M. Pinto, L. Marques and F. Vaz
5th International Conference on Nanosciences Nanotechnologies (NN08), Thessaloniki, Greece (2008)

First principles study of point defects in titanium oxycarbides

H. M. Pinto, L. Marques and F. Vaz
7th Iberian Vacuum Meeting - IVM-7, Costa da Caparica, Portugal(2008)

Optical properties of titanium oxycarbide thin films

H. Pinto, L. Marques, M. M. D. Ramos, F. Vaz
E-MRS 2008 Spring meeting, Strasbourg, France (2008)

Optical properties of TiCO from ab initio calculations

H. Pinto, L. Marques, M. M. D. Ramos, F. Vaz
Workshop on low dimension semiconductors 2008, University of Aveiro, Portugal (2008)

Determination of the optical constants of vanadium oxide thin films

H. M. Pinto, J. Correia, C. Batista, V. Teixeira, Ivan P. Parkin
Materiais 2007, Porto, Portugal (2007)

Ab-initio determination of the vacancy migration barrier in germanium

H. M. Pinto, J. Coutinho, V. J. B. Torres, R. Jones, P. R. Bridson E-MRS Spring Meeting 2006, Nice, France (2006)

Ab-initio determination of the vacancy migration barrier in germanium

Workshop on low dimension semiconductors 2006, University of Aveiro, Portugal (2006)

Modelization of thin film growth

H. M. Pinto, R. M. Ribeiro
E-MRS Spring Meeting 2004, , Strasbourg, France (2004)

Optical properties of TiCO from ab initio calculations

H. M. Pinto, L. Marques, M. M. D. Ramos, F. Vaz
2nd Workshop on Low-Dimensional Structures: Properties and Applications, Aveiro, Portugal (2008)

Thin films of $\text{SnO}_2\text{-Me}_x\text{O}_y$ ($\text{Me}=\text{Fe}, \text{Mo}$) for gas sensor applications

H. Pinto, P. Portela, J. M. Correia Pires, J. B. Almeida, R. M. Ribeiro, V. Teixeira
13^a Conferência Nacional de Física, Évora, Portugal, (2002)

Deposition of doped SnO_2 thin films for gas sensing applications

H. Pinto, J. M. Correia Pires, J. B. Almeida, R. M. Ribeiro, V. Teixeira
12th General Conference of the European Physical Society, Budapest, Hungary (2002)