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PROFESSIONAL AND RESEARCH ACTIVITY

- 2010 to present** New York University - Center for Brain Imaging
Senior Research Scientist.
Chief MRI Physicist: Overseeing operations of the Center, managing of staff (5 people), user support, protocol development and optimization, image reconstruction and processing, sequence programming, QA procedures, equipment and software, documentation, etc.
- 2005 to 2009** New York University - Center for Brain Imaging
Assistant Research Scientist:
MRI Physicist: Image reconstruction and processing, sequence programming, QA procedures, equipment and software, documentation, users support, etc.
- 2009** MRI consultant for HBO television series.
- 2003 to 2004** New York University - Center for Neural Science
Postdoctoral Sloan-Swartz Fellowship
Study of human visual perception: visual integration into a global motion perception.
- 1997 to 2002** Institute of Materials Science of Madrid -
The Spanish High Council of Scientific Research (CSIC)

Thesis: *Synthesis and characterization of new $Tl_2Mn_2O_7$ -related pyrochlores with colossal magnetoresistance properties.*
 - August to December 2002: Postdoctoral Research Grant
 - January to June 2002: Research Grant
 - January 1998 to December 2001: Scholarship from the Spanish Ministry of Education and CultureSupervisors: Profs. J. L. Martínez Peña and J. A. Alonso
1997: Young Scientist Grant
Synthesis and structural characterization of $GeCuO_3$
Supervisor: Prof. I. Rasines.
- September 1995 to December 1996** Complutense University of Madrid -
Materials Science Department, Faculty of Physics
Collaborator in the study of the induction of helical anisotropies in low-magnetostriction amorphous ribbons
Supervisors: Prof. C. Aroca and Dr. E. López

ACADEMIC APPOINTMENTS

- 2011 to present** New York University - School of Medicine
Research Assistant Professor (Radiology).

EDUCATION

Autónoma University of Madrid (ranked the top university in Spain for Physics)

- 2002: Ph. D. in Physics (Materials)
- 2002: European Doctorate

Complutense University of Madrid (ranked the #1 university in Spain)

- 1997: Graduate in Physics with a specialty in Physics of Materials, score of 9 out of 10
- 1997: Extraordinary Graduate Award
- 1st in class
- November 1995: "Class of '60 Physics" Award

PUBLICATIONS

1. P. Velasco and S.J. Inati "Non-linearity in diffusion-gradient induced eddy-current fields in a head only 3T scanner." **Proc. of the ISMRM 2008 conference** 1825 (2008).
2. P. Velasco, J.A. Alonso, M.T. Casais, M.J. Martínez-Lope and J.L. Martínez "Analysis of magnetotransport data of $Tl_2Mn_2O_7$ pyrochlore: evidence for half-metallicity." **J. Phys.: Cond. Matter** 8725 **16** (2004).
3. M. Venkatesan, P. Velasco, J.A. Alonso, J.L. Martínez and J.M.D. Coey "Powder magneto-resistance of $Tl_2Mn_2O_7$ related compounds." **J. Phys.: Cond. Matter** 3465 **16** (2004).
4. A. P. Douvalis, M. Venkatesan, P. Velasco, C. B. Fitzgerald, and J. M. D. Coey "Combustion synthesis of the magnetoresistive double perovskite $(Ba_{1.6}Sr_{0.4})FeMoO_6$." **J. App. Phys.** 8071 **93** (2003).
5. P. Velasco, J.A. Alonso, V.G. Tissen, W.G. Marshall, M.T. Casais, M.J. Martínez-Lope and J.L. Martínez "Pressure effect in the structure, transport properties and magnetic interactions of $Tl_2Mn_2O_7$ pyrochlore derivatives." **Phys. Rev. B.** 104403 **67** (2003).
6. P. Velasco, J.A. Alonso, M.T. Casais, M.J. Martínez-Lope, J.L. Martínez and M.T. Fernández-Díaz "Influence of charge-carrier density on the magnetic and magneto-transport properties of $Tl_{2-x}Cd_xMn_2O_7$ pyrochlores ($x \leq 0.2$)." **Phys. Rev. B.** 174408 **66** (2002).
7. P. Velasco, J. Mira, F. Guinea, J. Rivas, J.A. Alonso and J.L. Martínez "First order transition and phase separation in colossal magnetoresistance pyrochlores." **Phys. Rev. B.** 104412 **66** (2002).
8. P. Velasco, J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez "Manganese pyrochlores with colossal magnetoresistance." **High Pressure Research**, 563 - 568 **22** (2002).
9. V. Tissen, P. Velasco, J.L. Martínez, A. de Andrés, C. Prieto, J.A. Alonso, M.T. Casais, M.J. Martínez-Lope, "Pressure dependence of the transport and magnetic properties of colossal magnetoresistance $Tl_2Mn_2O_7$ pyrochlore system." **High Pressure Research**, 143-146 **22** (2002).
10. P. Velasco, J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez, M.T. Fernández-Díaz "Magnetic and transport properties of a Pb substituted $Tl_2Mn_2O_7$ pyrochlore." **Journal of Magnetism and Magnetic Materials**, 725-728 **242-245**, (2002).
11. M.C. Viola, M.J. Martínez-Lope, J. A. Alonso, P. Velasco, J.L. Martínez, J.C. Pedregosa, R.E. Carbonio, M.T. Fernández-Díaz "Induction of colossal magnetoresistance in the double perovskite Sr_2CoMoO_6 ." **Chem. Mater.** 812 **14** (2002).
12. P. Velasco, J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez, M.T. Fernández-Díaz "Synthesis and properties of $Tl_2Mn_{2-x}Ti_xO_7$ pyrochlores with colossal magnetoresistance." **J. Phys.: Cond. Matter.** 10991 **13** (2001).
13. P. Velasco, J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez, M.T. Fernández-Díaz, J.M. de Paoli "Electron injection in Te-doped derivatives of $Tl_2Mn_2O_7$ pyrochlore." **Phys. Rev. B.** 184436 **64** (2001).
14. J.A. Alonso, P. Velasco, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez, M.T. Fernández-Díaz "A novel series of Cd-substituted $Tl_2Mn_2O_7$ pyrochlores with unprecedented magnetoresistance." **Appl. Phys. Lett.** 3274-3276 **76** (2000).

15. J.A. Alonso, M.T. Casais, M.J. Martínez-Lope, J.L. Martínez, P. Velasco, A. Muñoz, M.T. Fernández-Díaz "Preparation, crystal structure, magnetic and magnetotransport properties of the double perovskite $\text{Ca}_2\text{FeMoO}_6$." **Chem. Mater.** 161-168 **12** (2000).
16. J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, P. Velasco, J.L. Martínez, M.T. Fernández-Díaz, J.M. de Paoli, "Enhancement of ferromagnetic coupling in Sb-substituted $\text{Tl}_2\text{Mn}_2\text{O}_7$ pyrochlores." **Phys. Rev. B.** R15 024-027 **60** (1999).
17. M. Rodríguez, P. Velasco, C. Aroca, E. López, M.C. Sánchez, P. Sánchez, "Different mechanism of induced helical anisotropy in low-magnetostriction amorphous ribbons." **J. Magn. Magn. Mat.** 220-222 **177-181** (1998).

PRESENTATIONS AT CONFERENCES

18. S Inati, P Velasco, E Vessel, "A New Method for Robust Functional to Structural Alignment Using Multi-echo GRE B0 and R2* Mapping." Poster at the **OHBM 2011 Meeting**. Quebec City (Canada) 26-30 June 2011.
19. D Schluppeck, E. P. Merriam, R.-M. Sanchez-Panchuelo, S. Francis, R. Bowtell, P. Velasco, S. Inati, D. J. Heeger, "Assessing the spatial precision of high-resolution echo-planar functional MRI at 3T and 7T." Poster at the **Society for Neuroscience 2010 Meeting**. San Diego (CA) 13-17 November 2010.
20. P. Velasco and S.J. Inati "Non-linearity in diffusion-gradient induced eddy-current fields in a head only 3T scanner." Poster at the **ISMRM 2008 conference**. Toronto (Canada) 4-9 May 2008.
21. P. Velasco and N. Rubin, "Perception of the Motion of a Rotating Ellipse." Poster at the **IV Vision Sciences Society Meeting**. Sarasota (FL) 30 April-5 May 2004.
22. P. Velasco, J.A. Alonso, V.G. Tissen, W.G. Marshall, M.T. Casais, M.J. Martínez-Lope, A. de Andrés, C. Prieto and J.L. Martínez, "The effect of pressure on the structure, transport properties and magnetic interactions in the $\text{Tl}_2\text{Mn}_2\text{O}_7$ -related pyrochlores." Poster at the **Second National Meeting of Solid State Physics**. Calella (Spain) 6-8 February 2002.
23. P. Velasco, J.L. Martínez, J.A. Alonso, M.T. Casais and M.J. Martínez-Lope, "CMR in the pyrochlores $\text{Tl}_2\text{Mn}_2\text{O}_7$." Presentation at the **Second Meeting of the Spanish Magnetoresistance Network**. Calella (Spain) 5 February 2002.
24. V. Tissen, P. Velasco, J.L. Martínez, A. de Andrés, C. Prieto, J.A. Alonso, M.T. Casais, M.J. Martínez-Lope, "Pressure dependence of the transport and magnetic properties of colossal magnetoresistance pyrochlore system." Presentation at the **XXXIX European High Pressure Meeting**. Santander (Spain) 16-19 September 2001.
25. P. Velasco, J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez "Manganese pyrochlores with colossal magnetoresistance." Poster at the **XXXIX European High Pressure Meeting**. Santander (Spain) 16-19 September 2001.
26. P. Velasco, J.A. Alonso, M.J. Martínez-Lope, M.T. Casais, J.L. Martínez, M.T. Fernández-Díaz "Magnetotransport properties for $\text{Tl}_{2-x}\text{Pb}_x\text{Mn}_2\text{O}_7$ pyrochlores." Poster at the **Joint European Magnetic Symposia**. Grenoble (France) 28 August-1 September 2001.
27. P. Velasco, J.L. Martínez, J.A. Alonso, M.T. Casais, M.J. Martínez-Lope, M.T. Fernández-Díaz "Direct experimental relation between low density carrier and CMR in $\text{Tl}_2\text{Mn}_2\text{O}_7$ compounds." Presentation at the **18th General Conference of the Condensed Matter Division of the European Physical Society**. Montreux (Switzerland) 13-17 March 2000.
28. M. García-Hernández, A. de Andrés, L. Martín-Carrón, A. Muñoz-Martín, P.J. Velasco-Pérez, C. Prieto, J.L. Martínez, "Magnetic and optical properties of magnetoresistive manganese perovskites thin films with nanometric grains." Presentation at the **Eighth European Conference on Applications of Surface and Interface Analysis (ECASIA'99)**. Seville (Spain) 4-8 October 1999.
29. M. Rodríguez, P. Velasco, E. López, M.C. Sánchez, P. Sánchez, C. Aroca, "Mechanism of induction of large Barkhausen discontinuities in amorphous ribbons." Poster at the **International Conference on Magnetism (ICM'97)**. Cairns (Australia) 27 July-1 August 1997.

INVITED TALKS

- “Visual Motion Integration”, at the **New York State Psychiatric Institute**, December 2004.
- “Powder Magnetoresistance of $Tl_2Mn_2O_7$ related compounds”, at **Columbia University** (Applied Physics Department), 2 December 2004.
- “Visual Motion Integration”, at **Princeton University** (Physics Department), 18 July 2004.

TEACHING EXPERIENCE

- “Functional Brain MRI” - Invited lecture for “Advanced MRI”; graduate course for the Sackler Institute of Graduate Biomedical Sciences. **New York University School of Medicine**. Spring 2010 and 2011.
- “MRI Contrast” - Invited lecture for “fMRI”; graduate course for the Center for Neural Science and Psychology Department. **New York University**. Spring 2009.

PROFESSIONAL AFFILIATIONS

- 2007 to present: Member of the International Society for Magnetic Resonance in Medicine.
- 2010 to present: Member of the Organization for Human Brain Mapping.
- 2005: Member of the American Physics Society.

SCIENTIFIC VISITS

- 2000 & 2001 (7 months total): Trinity College of Dublin, Dublin (Ireland). Supervisor: Prof. J. M. D. Coey.
- October-December 1998: Physics Department of the University of California - San Diego, in La Jolla, CA. Supervisor: Prof. Ivan K. Schuller.
- October 1997: Laboratoire pour l'Utilisation du Rayonnement Electromagnétique (LURE), in Orsay (France).

ATTENDANCE AT CONFERENCES

- *International Society for Magnetic Resonance in Medicine Meeting* (2007-2008, 2010-2011).
- *Organization for Human Brain Mapping* (2010-2011).
- *Vision Sciences Society Meeting* (2003-2004).
- September 2003: *Imaging the Brain: Neurons, Networks and Behavior* - New York, NY.
- February 2002: *New trends on femtosecond laser spectroscopy in Chemistry, Physics and Neurobiology* - International Symposium, Madrid (Spain).
- February 2002: *Second National Meeting of Solid State Physics* - Calella (Spain). *Second Meeting of the Spanish Magnetoresistance Network* - Calella (Spain).
- September 2001: *XXXIX European High Pressure Meeting* - Santander (Spain).
- August 2001: *Joint European Magnetic Symposia* - Grenoble (France).
- July 2000: *Workshop on Electron Spectroscopies* - ASEVA Summer School. Ávila (Spain).
- March 1999: *OXSEN Meeting* - Barcelona (Spain).
- March 1997: *Fourth Workshop of Synchrotron Radiation Users* - Madrid (Spain).

OTHER COURSES

- “Sequence Development” (Siemens) - November 2005 (VA25) and February 2010 (VB17).

- “Brain Voyager for Advanced Users” - May 2007. Center for Neural Science & Psychology Department (New York University).
- “Functional Magnetic Resonance Imaging” (graduate level) - Spring 2004. Center for Neural Science (New York University).
- “Physics Methods for Thin Films and Solids Surfaces Analysis” - June 2000. Institute of Materials Science, Seville (Spain)
- “VII Course of Introduction to the Optics Research” - April 1997. Daza de Valdés Institute of Optics (CSIC, Madrid, Spain).

SOFTWARE

- MRI sequence development: IDEA (Siemens).
- MRI analysis software: FSL, Brain Voyager QX.
- Operating systems: OS X, Windows XP.
- Mathematical programs: Matlab, Maple, Origin.
- Programming in Visual C++ and Visual Basic, with special knowledge in programs of process automatization and image generation (SDL and OpenGL).
- Master of commonly used applications (word processors, spreadsheets, databases, etc.)

LANGUAGES

- English: Very high proficiency in speaking, reading and writing.
- Spanish: Mother tongue.