

**PABLO VELASCO, Ph.D.**  
**New York University**  
**Center for Brain Imaging**  
**6 Washington Place, Room 156**  
**New York, NY 10003**  
**(212) 998-8748**  
**pablo.velasco@nyu.edu**

## PROFESSIONAL AND RESEARCH ACTIVITY

- July 2005 to present**      **New York University - Center for Brain Imaging**  
Research Scientist:  
Image reconstruction and processing, pulse programming, QA procedures, equipment and software, documentation, users support, etc.
- 2002 to 2006**      Referee for **Physical Review Letters** and **Physical Review B**.
- January 2003 to December 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: Prof. J. L. Martínez Peña and Dr. J. A. Alonso 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 ~**  
**Material 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

## 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

## PROFESSIONAL AFFILIATIONS

- 2007 to present: Member of the International Society for Magnetic Resonance in Medicine.
- 2005: Member of the American Physics Society.

## SCIENTIFIC STAYS

- 2000 & 2001 (7 months total): Trinity College of Dublin, Dublin (Ireland). Supervisor: Prof. J. M. D. Coey.
- 24 October-20 December 1998: Physics Department of the University of California - San Diego, in La Jolla, CA. Supervisor: Prof. Ivan K. Schuller.
- 18-26 October 1997: Laboratoire pour l’Utilisation du Rayonnement Electromagnétique (LURE), in Orsay (France).

## 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 and N. Rubin “Visual motion integration” (in preparation).
3. P. Velasco, J.A. Alonso, M.T. Casais, M.J. Martínez-Lope and J.L. Martínez “Mechanisms for magnetism and magnetoresistance in  $Tl_2Mn_2O_7$ -related pyrochlores” (in preparation).
4. 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).
5. M. Venkatesan, P. Velasco, J.A. Alonso, J.L. Martínez and J.M.D. Coey “Powder magnetoresistance of  $Tl_2Mn_2O_7$  related compounds.” **J. Phys.: Cond. Matter** 3465 **16** (2004).
6. 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).
7. 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).
8. 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).
9. 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).
10. 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).
11. 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).
12. 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).
13. 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).

14. 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).
15. 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).
16. 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).
17. 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  $Ca_2FeMoO_6$ ." *Chem. Mater.* 161-168 12 (2000).
18. 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  $Tl_2Mn_2O_7$  pyrochlores." *Phys. Rev. B.* R15 024-027 60 (1999).
19. 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

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  $Tl_2Mn_2O_7$ -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  $Tl_2Mn_2O_7$ ." 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  $Tl_{2-x}Pb_xMn_2O_7$  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  $Tl_2Mn_2O_7$  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.

## PARTICIPATION IN RESEARCH PROJECTS

1. Project Title: **Synthesis at high pressure and characterization of transition-metal oxides in rare oxidation states.**  
Supporting Entity: National Fund for Technological Scientific Research Development.  
Program PGC.  
Code: MAT2001-0539  
Main Researcher: Dr. M. J. Martínez-Lope  
July 2001 to June 2004.
2. Project Title: **Colossal magnetoresistance at room temperature in Mn systems: polycrystals, single crystals and thin films.**  
Supporting Entity: Spanish Ministry of Education and Cultura  
Code: MAT1999-1045  
Main Researcher: Prof. J. L. Martínez Peña  
January 2000 to December 2002.

## ATTENDANCE AT CONFERENCES

- May 2008: *International Society for Magnetic Resonance in Medicine Meeting* - Toronto (Canada).
- May 2007: *International Society for Magnetic Resonance in Medicine Meeting* - Berlin (Germany).
- April-May 2004: *Vision Sciences Society Meeting* - Sarasota, FL.
- September 2003: *Imaging the Brain: Neurons, Networks and Behavior* - New York, NY.
- May 2003: *Vision Sciences Society Meeting* - Sarasota, FL.
- 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

- May 2007: “Brain Voyager for Advanced Users” at the Center for Neural Science & Psychology Department (New York University).
- Spring 2004: “Functional Magnetic Resonance Imaging Laboratory” at the Center for Neural Science (New York University).
- June 2000: “Physics Methods for Thin Films and Solids Surfaces Analysis” at the Institute of Materials Science, Seville (CSIC-UNSE)
- April 1997: “VII Course of Introduction to the Optics Research” at the Daza de Valdés Institute of Optics (CSIC, Madrid).
- 1997: “Introduction to the European Union” at the Polytechnic University of Madrid (a course in the European Communities masters program).

## **SOFTWARE**

- MRI analysis software: FSL, Brain Voyager QX.
- Operating systems: OS X, Windows 95/98, Windows NT and Windows 2000.
- Programming in Visual C++ and Visual Basic, with special knowledge in programs of process automatization and image generation (SDL and OpenGL).
- Mathematical programs: MatLab, Statistica, Maple, Origin.
- Master of commonly used applications (word processors, spreadsheets, databases, etc.)

## **LANGUAGES**

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