

# ***Gloria M. Buendía***

Physics Department  
Universidad Simón Bolívar, Caracas 1080. Apdo 89000. Venezuela  
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## **Personal Data**

- Born in Caracas, Venezuela.
- Venezuelan and Spaniard citizenship
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## **Studies**

- Ph.D in Physics, University of California, San Diego, La Jolla, California, USA (1987)
- M.Sc in Physics, Universidad Simón Bolívar, Caracas (With honors) Venezuela (1982)
- Licentiate in Physics, Universidad Simón Bolívar, Caracas (Cum Laude) Venezuela (1979)

## **Actual Position**

- Professor, Departamento de Física, Universidad Simón Bolívar, Caracas.

## **Previous Positions**

- Visiting Professor, Department of Physics, Universidad de Cordova, Monteria, Colombia, Nov (2016)
- Visiting Professor, Department of Physics, Florida State University, Tallahassee, FL (Sep15-Nov15) (2015)
- Visiting Professor, Department of Physics, Universidad de Cordoba, Monteria, Colombia, March 22- April 6 2015.
- Visiting Professor, Department of Physics, Florida State University, Tallahassee, FL. (Aug-Sept 2009, Aug-Sep 2010, Aug-Sep 2011, Aug-Sep 2013)
- Visiting Scholar, Consortium for Interdisciplinary Physics, University of New Mexico, Albuquerque, NM, USA (September 2007-September 2008) (On sabbatical leave from USB)
- Dean of Research of Development, Universidad Simón Bolívar (January 2004-May 2006)
- Dean of General Studies. Universidad Simón Bolívar. (Sep 2001-Dic 2003)
- Visiting Researcher, School of Computational Science and Information Technology, Tallahassee, Florida, USA (August 2000-August 2001). (On sabbatical leave from USB)
- Associate Professor, Universidad Simón Bolívar (1990-1995)
- Visiting Researcher, Supercomputer Computation Research Institute, Florida State University, Tallahassee, USA (August 1993-August 1994) (On sabbatical leave from USB)
- Assistant Professor, Universidad Simón Bolívar (1987-1990)
- Teaching Assistant, Physics Department, University of California, San Diego, USA (1984-1987)
- Instructor, Universidad Simón Bolívar (1979-1982)

## **Honors and Awards**

- "International Travel Grant Award" given by the American Physical Society (APS, November 2014 (with Per Rikvold)
- "Physics Professor of the year" given by "Federación de Centros de Estudiantes", Universidad Simón Bolívar, July 2010.
- Prize Francisco Torrealba, for life achievements in sciences given by the Professors Association Universidad Simón Bolívar, Dec 2008.
- Researcher, Level IV (the highest), Venezuelan Research Program. Venezuelan council for Science and Technology. Since 2007
- Prize Andrés Bello given by the Professor Association, Universidad Simón Bolívar, to the best publication in sciences. Dec 2006.
- "Women in Physics Travel Grant Program" International Union of Pure and Applied Physics (IUPAP), July 2003.
- Prize Andrés Bello, Honor mention, given by the Professor Association, Universidad Simón Bolívar, to the best publication in sciences. Dec 2000
- Prize Andrés Bello, given by the Professor Association, Universidad Simón Bolívar, to the best publication in sciences. Dec 1994.
- Researcher, Level III Venezuelan Research Program. Venezuelan council for Science and Technology. 2004-2006
- Researcher, Level II Venezuelan Research Program. Venezuelan council for Science and Technology.
- Researcher, Level I Venezuelan Research Program. Venezuelan council for Science and Technology. 1989
- Invited speaker at:
  - Universidad de Cordoba, Colombia
  - University of Arizona
  - University of New Mexico
  - Florida State University
  - Mississippi State University
  - Universidad Autónoma de Madrid
  - Instituto Venezolano de Investigaciones Cientificas
  - Universidad Central de Venezuela
  - Universidad de Los Andes

## **Fields of Research**

- Computational Physics
- Magnetic Materials
- Critical Phenomena
- Out of equilibrium systems

## **Ph.D -Thesis Directed**

- Nicolas De La Espriella "Estudio numérico de las propiedades magnéticas de un modelo de Ising mixto de espines  $3/2-5/2$ ". Universidad Simón Bolívar, February 2011.
- Nuri Hurtado "Estudio del comportamiento de ferrimagnetos mixtos de Ising 3-D en presencia de campos externos". Universidad Simón Bolívar, July 2001.

- Erik Machado "Comportamiento Magnético de un modelo ferrimagnético mixto de Ising bidimensional". Universidad Simón Bolívar, January 2000 (Thesis with honors).

#### ***M.Sc -Thesis Directed***

- Jonás Díaz "Simulaciones de Monte Carlo de dos reacciones catalíticas: oxidación de CO y reducción de NO", Universidad Simón Bolívar, October 2016 (Thesis with honors).
- Javier Villarroel "Sistemas de sistemas magnéticos con interacciones ferro y antiferromagnéticas". July 2005 (Thesis with honors).

#### ***Licentiate in Physics -Thesis Directed***

- Gustavo Elcure "Simulación de procesos catalíticos en superficies" Universidad Simón Bolívar, October 2013. Thesis with honors.
- Jonathan Chico "Investigación teórica de hidratos metálicos confinados dimensionalmente" Universidad Simón Bolívar, November 2010 . Co-directors: Andrea Taroni and Karl Gunnar
- Cesar Ojeda "Estudio de modelos para la oxidación catalítica de CO superficies" Universidad Simón Bolívar, December 2010 (Thesis with honors)
- Reinaldo Cardona. "Simulación Numérica de un modelo ferrimagnético mixto de espines 3/2-1/2" Universidad Simón Bolívar, 1997. (Thesis with honors).
- Jorge Reverón. "Estudio numérico de la dinámica de los ferrimagnetos de Ising en presencia de campos magnéticos" Universidad Simón Bolívar, 1996 (Thesis with honors).

#### ***Presentations at International Conferences***

- G.M.Buendía, "Numerical simulations of catalytic processes". Colloquium of the Physics Department. University of Cordoba, Colombia. November 2016. Invited Speaker
- G.M.Buendía, "A female physicist in Venezuela" Meeting of the Inter-American Network of Academies of Sciences, IANA, Caracas, Venezuela, September 2016. Invited Speaker.
- G.M.Buendía, "Simulaciones Numéricas: un enorme espectro de aplicaciones" XIII Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas. Caracas, Venezuela, July 2016. Invited Speaker
- G.M.Buendía, "Métodos de Monte carlo para la simulación de sistemas fuera del equilibrio: reacciones en superficies" Celebrations 50 years of the University of Cordoba, Colombia. March 2015. Invited Speaker
- G.M.Buendía, P.A.Rikvold, M. Kolesik, K.Park, M.A.Novotny "Nanostructures of field-driven interfaces moving under a phonon-bath dynamics" International Conference on Recent Progress in Many Body theories, Barcelona, Spain (August 2007). Poster
- G.M.Buendía, P.A.Rikvold, M. Kolesik, K.Park, M.A.Novotny "Nanostructures of field-driven interfaces: dependence on the stochastic dynamics" Statphys23, Genova, Italia, July 2007 Oral
- G.M.Buendía, J. Villarroel "Magnetic Properties of Mixed Ferro-Ferrimagnetic Ternary Alloys" International Conference on Magnetism. Kyoto, Japan. 08-2006.
- G.M.Buendía, P.A.Rikvold, M.Kolesik "Field-driven Interfaces: dependence on the stochastic dynamics". XXXI Congreso de Químicos Teóricos de Expresión Latina" QUITEL. Isla de Margarita, Venezuela. 10-2005.

- G.M.Buendía, E. Machado, P.A.Rikvold, R.Ziff "Catalytic oxidation: increased CO<sub>2</sub> production and dynamic phase transition" XXXI Congreso de Químicos Teóricos de Expresión Latina" QUITEL. Isla de Margarita, Venezuela. 10-2005.
- G.M. Buendía, E. Machado, P.Rikvold "Decay of metastable phases in a model for the catalytic oxidation of CO on a surface". American Conference on Theoretical Chemistry. Los Angeles, USA. 07-2005.
- G.M.Buendía "Phase diagram of a mixed Ising ferrimagnet". International Conference on Magnetism. Rome, Italy. 08-2003.
- G.M.Buendía, S.Mitchell, P.Rikvold "Spring-network model of crosslinked polymer surfaces".Computational Physics 2002. San Diego, USA, 08-002.
- G.M.Buendía, "Surface scalyn analysis of polymer gels: from self-affine to multiaffine scaling" XVI SLAFES, Simposio Latinoamericano de Física del Estado Sólido", Merida, Venezuela, Dec 2003. Invited talk.G.M.Buendía, S.Mitchell, P.Rikvold " Frustrated Spring-Network Model for Crosslinked Polymer Surfaces", Recent Developments in Computer Simulation Studies in Condensed Matter Physics, 14<sup>th</sup> Annual Workshop. Athens, Georgia, USA, 02-2001.
- G.M.Buendía, E. Machado " Monte Carlo study of the Relaxation of Metastable phases of a Mixed Ising Ferrimagnet", Modeling Complex Systems: 6<sup>th</sup> Granada Seminar on Computational Physics, Granada, España, 09-2000.
- G.M.Buendía and E. Machado "Magnetic behavior of a mixed Ising ferrimagnetic model in an oscillating magnetic field", International Workshop on Monte Carlo and Structure Optimization methods for Biology, Chemistry and Physics. Florida State University, Tallahassee, 04-1999.
- G. M. Buendía, "Compensation Temperature of a mixed Ising ferrimagnetic model in the presence of external magnetic fields", Spring Meeting of the Materials Research Society, San Francisco, USA, 04-1998.
- G. Buendía and M. Novotny " Critical behavior of a mixed Ising ferrimagnet", 7<sup>th</sup> International Conference on Ferrites, Bordeaux, Francia, 09-1996.
- G. Buendía, M. Novotny "Numerical Simulation of a spin1-spin1/2 Ising Ferrimagnet", STATPHYS 19, Xiamen, China. 08-1995. Poster.
- G. Buendía and M.A.Novotny, "Numerical Simulation of a Mixed Ising ferrimagnetic system", XIX International Workshop on Condensed Matter
- G. Buendía "Numerical Simulation of a fermionic system: a comparative study", March Meeting, American Physical Society. Pittsburgh, USA. 03-1994. .
- G. Buendía, M. Novotny, J. Zhang, "Numerical Study of a d=2 mixed Ising ferrimagnet", Recent Developments in Computer Simulation Studies in Condensed Matter Physics. Center of Computational Physics, University of Georgia, Athens, USA. 03-1994. P
- G. Buendía, "Comparative Study of Techniques for the simulation of a fermionic system", Computing in High Energy Physics, Annecy-CERN, Francia. 09-1992.
- G. Buendía, "Metropolis, Langevin and Hybrid simulations of a 1-D spinless fermion model", II Granada Seminar on Computational Physics, Almuñecar, España. 09-1992.
- G. Buendía, J. F. Fernandez, "Weakly diluted Ising antiferromagnets and ferromagnets, cross-over effects", Escola Latinoamericana de Física, Caxambu, Brasil, 08-1991.
- G. Buendía, "Documento de Síntesis en el area de Física", Reunión de Síntesis y Mejoramiento Curricular: Enseñanza de la Ingeniería y Cooperación Regional, UNESCO. Montevideo, Uruguay, 10-1991. UNESCO memories.
- G. Buendía, "Comparison between the Langevin and the Hybrid Simulation Techniques for a Free Field Theory", International Conference on Particles and Nuclei, Massachusetts Institute of Technology, Cambridge, USA , 06-1990.

- G.M.Buendía, Numerical Simulation of a fermion Model, String, Membranes and QED. 1<sup>st</sup> Latin-American School on Strings and Fundamentals, Caracas, Venezuela. 06-1995.
- G. Buendía, "Comparative study of numerical techniques for the simulation of a fermionic system". International Europhysics Conference on High Energy Physics. Madrid, Spain, 08-1989.
- G. Buendía, "Numerical simulation techniques based on molecular dynamics". Latinoamerican school of physics, Cuernavaca, México. 08- 1989.
- Workshop in simulations methods in science, Santiago, Chile. Enero 1988. Participante
- Nonperturbative Methods in Quantum Field Theory, University of California, Irvine . 01-1987. Participant
- Third Theoretical Advance Study Institute in Elementary Particle Physics. Santa Cruz, California. 06-1986/07-1986 Summer School. Participant

### ***Presentations at local conferences***

- G.M.Buendía "A model for the catalytic oxidation of CO that includes CO desorption and diffusion, O repulsion, and impurities in the gas phase. V Congreso de Físico-Química Teórica y Computacional. IVIC, Diciembre 2014. Invited Talk
- G.M.Buendía "Non-equilibrium systems: a model for the catalytic oxidation of CO on a surface" VIII Congreso Nacional de Física. Tucacas. Diciembre 2014
- G.M.Buendía, "Dynamical model for the catalytic oxidation of CO on a surface in the presence of CO desorption and impurities in the gas phase. Jornada Nacional de Física de la Materia Condensada. Caracas-IVIC. November 2013. Invited talk.
- G.M.Buendía, "Simulación dinámica de sistemas fuera del equilibrio: oxidación catalítica de CO sobre superficies. 2da Jornada de Modelaje Computacional Multiescala. Universidad Simón Bolívar. November 2013. Invited talk.
- G.M.Buendía, P.A.Rikvold, "Modelling catalytic reaction on surfaces in the presence of impurities in the gas phase". IV Congreso de Físicoquímica Teórica y Computacional. Caracas-IVIC (2012) Poster
- G.M.Buendía, Simulaciones de sistemas complejos fuera del equilibrio. Jornadas Galileanas, Universidad Simón Bolívar (2012) Invited talk.
- C.A.Ojeda; G. Buendía "Effect of the hot-atom mechanism for the dissociation of O<sub>2</sub>, and the coadsorption of CO, on the phase diagram of a model for the catalytic oxidation of CO". VII Congreso Venezolano de Física. Caracas, Venezuela. December 2009
- N. De la Espriella; Buendía, G. "Numerical study of the magnetic behavior of a mixed 3/2-5/2 Ising model". VII Congreso de la Sociedad Venezolana de Física. Caracas, Venezuela. December 2009
- G. Buendía "Modelos Estadísticos de Tráfico". Jornadas de Física Estadística. Departamento de Física. Universidad Simón Bolívar. Caracas, Venezuela. March 2009
- G.M.Buendía, M. Kolesik, P.A.Rikvold "Microstructure and velocity of field driven solid-on-solid interfaces: dependence on the dynamics". V Congreso Venezolano de Física. Punto Fijo, Venezuela. 11- 2005.

- J.E.Villarroel, G.M.Buendía "Temperaturas de compensación en modelos mixtos de compuestos ternarios". V Congreso Venezolano de Física. Punto Fijo, Venezuela. 11- 2005.
- E.Machado and G.M.Buendía, " Respuesta de un modelo para la oxidación catalítica de CO a variaciones periódicas de la presión de los reactantes" IV Congreso Venezolano de Física. Margarita , Venezuela. 11-2003.
- J.Villarroel y G.M.Buendía, "Simulación de sistemas con interacciones ferromagnéticas y antiferromagnéticas" IV Congreso Venezolano de Física. Margarita, Venezuela. 12- 2003
- G.Buendía, S.J. Mitchell y P.A. Rikvold "Escalamiento de superficies de polímeros entrecruzados", III Congreso de la Sociedad Venezolana de Física, Caracas, USB, 12-2001.
- N. Hurtado y G. Buendía "Anisotropía en un ferrimagneto Mixto de Ising", III Congreso de la Sociedad Venezolana de Física, Caracas, USB, 12-2001.
- N.Hurtado, F. Marín y G. Buendía "Límite Percolativo de un ferrimagneto mixto de Ising", AsoVAC, San Cristóbal, 11-2001.
- G. Buendía, S. Mitchell y P. Rikvold. "Modelo para el estudio numérico de la superficie de polímeros entrecruzados" AsoVAC, San Cristóbal, 11-2001.
- G.Buendía. "Solución exacta del modelo de Ising en 2-d con condiciones de borde periodicas" . II Congreso Venezolano de Física, Cumaná. 12-1999.
- G.M.Buendía. "Modelo de Ising en 2-d con condiciones de borde periodicas" AsoVAC, Aragua, 11-1999.
- G.M. Buendía "Dependencia con la temperatura de la coercitividad de un ferrimagneto mixto de Ising en presencia de un campo oscilante", AsoVAC, Maracaibo 11-1998.
- E. Machado y G. Buendía, " Estudio de Monte Carlo del fenómeno de histéresis en un ferrimagneto mixto de Ising", I Congreso Venezolano de Física, Mérida. 12-1997.
- G. Buendía y E. Machado, "Comportamiento de la temperatura crítica y de compensación de un ferrimagneto de Ising en presencia de un campo externo" AsoVAC, Valencia, 11-1997.
- E. Machado y G. M. Buendía, "Estudio de Monte Carlo del fenómeno histéresis en un ferrimagneto mixto de Ising", AsoVAC, Valencia, 11-1997.
- G. Buendía , "Materiales Ferrimagnéticos: Modelos Teóricos y su Simulación Numerica" Charla invitada. Simposio de la Sociedad Venezolana de Física, AsoVAC, Barquisimeto, 11-1996.
- J. Reverón y G. Buendía, "Estudio numérico de la respuesta magnética del modelo cinemático de un ferrimagneto de Ising en presencia de campos desfavorables", AsoVAC, Barquisimeto, 11-1996.
- R. Cardona y G. Buendía, " Metodo de Monte Carlo aplicado a la simulación de sistemas de Ising mixtos,  $3/2-1/2$ "., AsoVAC, Barquisimeto, 11- 1996.
- E. Machado y G. Buendía, " Cinetica de un sistema ferrimagnético de Ising" AsoVAC, Barquisimeto 11-1996.
- G. Buendía, J.F. Fernandez, "Disorder effects in Ising antiferromagnets and ferromagnets", AsoVAC, Maracaibo, 11-1991.
- G. Buendía, "Estudio de estados básicos en la formulación de la electrodinámica cuántica en el espacio de ciclos". AsoVAC. Cumaná, Nov1990.
- G. Buendía , D. Toussaint, "Termodinámica de gluones con una acción extendida", AsoVAC. Caracas, 11-1989.
- G. Buendía, "Comparación de técnicas dinámicas de simulación en una teoría de campos libres", AsoVAC. Caracas, 11- 1989.

- G. Buendía, "Técnicas de Simulación de Sistemas con Grados de Libertad Fermionicos". AsoVAC. Maracaibo. 11- 1987.
- G. Buendía, "Técnicas Dependientes de Camino para el Electromagnetismo con Cargas Magnéticas", AsoVAC. Mérida, 11-1981

## ***Publications***

- N.de La Espriella, C.A.Mercado, G.M.Buendía "Critical and compensation temperatures of a mixed spin2-spin5/2 Ising ferrimagnet with crystal field and next-nearest neighbors interactions" Journal of Magnetism and Magnetic Materials. **417**, 30-36 (2016)
- J.Diaz, G.M.Buendía "A model for the catalytic oxidation of CO with gas-phase impurities that can damage lattice sites". Acta Científica Venezolana. **67**, pp 79-91 (2016).
- G.M.Buendía, "A model for the catalytic oxidation of CO that includes a finite reaction rate between the CO and the O adsorbed on the lattice" Journal of Computational Methods in Science and Engineering, In press (2016)
- J.A.Reyes, N.De La Espriella, G.M.Buendía "Effects of an external magnetic field on a mixed spin-3/2 and spin 5/2 Ising ferrimagnet:a Monte Carlo study". PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS. **252**, pp. 2268 - 2274 (2015)
- G.M.Buendía, P.A.Rikvold "A model for the catalytic oxidation of CO that includes CO desorption and diffusion, O repulsion, and impurities in the gas phase". Physica A. **424**, 217-224 (2015)
- M.Pineda, G.M.Buendía "Mass media and heterogeneous bounds of confidence in continuous opinion dynamics" Physica A. **420**, 73-84 (2015)
- G.M.Buendía, G.Elcuré "Comparison between different models for the catalytic oxidation of CO in the presence of non-desorbing impurities in the gas-phase" Journal of Computational Methods in Science and Engineering . **14**, **73-80** (2014).
- G.M.Buendía, P.A.Rikvold "Model for the catalytic oxidation of CO, including gas-phase impurities and CO desorption" Physical Review E. **88**, 012131-012138 (2013).
- G.M.Buendía, P.A.Rikvold "Effects of inert species in the gas phase in a model for the catalytic oxidation of CO on a surface" Physical Review E. **85**, 31143-31148 (2012).
- C.Ojeda, G.M.Buendía "Comparison between different adsorption mechanisms for the catalytic oxidation of CO" Journal of Computational Methods in Science and Engineering **12**, 261-267 (2012)
- N.De La Espriella, G.M. Buendía "Magnetic behavior of a mixed Ising 3/2 and 5/2 spin model" Journal of Physics: Condensed Matter **23**, 17603-17611 (2011)
- N.De La Espriella, G.M. Buendía "Ground State Phase Diagrams for the mixed spin 3/2-5/2 Ising model" Physica A: Statistical Mechanics and its Applications **389**, 2725-2732 (2010)
- G.M.Buendía, E.Machado, P.A.Rikvold "Effect of CO desorption and coadsorption with O on the phase diagram of a Ziff-Gulari-Barshad model for the catalytic oxidation of CO" Journal of Chemical Physics **131**, pp 184704-184710 (2009)
- G.M. Buendía, G.M.Wiswanathan, V.M.Kenkre, "Multifractality of random walks in the theory of vehicular traffic" Physical Review E. **78**, pp 056110-056120 (2008)
- G.M.Buendía, P.A.Rikvold "Dynamic Phase transition in the 2-D Ising model in an oscillating field: Universality with respect to the stochastic dynamics" Physical Review E. **78**, pp 051108-051115 (2008).

- G.M.Buendía, P.A.Rikvold, M.Kolesik, K.Park, M.A.Novotny "Nanostructure and velocity of field driven solid-on-solid interfaces moving under a phonon assisted dynamics". Physical Review B. 76, 045422 - 045432 (2007).
- G.M.Buendía, J.E. Villarroel, "Compensation temperatures of mixed ferro-ferrimagnetic ternary alloys". Journal of Magnetism and Magnetic Materials. 310 pp e495-e497 (2007)
- G.M.Buendía, P. A. Rikvold, M. Kolesik, "Movilidad de Interfaces sometidas a campos externos". Ciencia-Revista de la Facultad de Ciencias-LUZ. 14, pp 207-210 (2006).
- J.E.Villarroel, G.M.Buendía, "Simulación de Monte Carlo de Compuestos Ternarios". Ciencia-Revista de la Facultad de Ciencias-LUZ. 14, (2006)
- G.M.Buendía, P.A.Rikvold, M.Kolesik, "Microestructure and velocity of field driven solid-on-solid interfaces moving under sthochastic dynamics with local energy barriers ". Physical Review B. 73, 045437-1 - 04537-13 (2006).
- G.M.Buendía, E.Machado, P.A.Rikvold "Response of a model of CO oxidation with CO desorption and diffusion to a periodic external CO pressure". Journal of Molecular Structure-THEOCHEM. 769, 207 - 210 (2006)
- G.M.Buendía, P.A.Rikvold, M. Kolesik "Field-driven solid-on-solid interfaces moving under a stochastic Arrhenius dynamics: effects of the barrier height". Journal of Molecular Structure-THEOCHEM. 769, 189 - 192 (2006).
- G.M.Buendía, P.A.Rikvold,K.Park,M.A.Novotny. "Metastable lifetime of a kinetic Ising model with a dynamic transition algorithm". Revista Mexicana de Física. S 52, 35-37 (2006).
- E. Machado, G.M. Buendía "Respuesta de un modelo para la oxidación catalítica de CO a variaciones periódicas de la presión de los reactantes". Revista Mexicana de Física, S 52, 42-44 (2006).
- E. Machado, G.M.Buendía, P.A.Rikvold "Decay of metastable phases in a model for the catalytic oxidation of CO". Physical Review E. 71, 0311603-031621 (2005).
- E.Machado, G.M.Buendía, P.A.Rikvold, R. Ziff, "Decay of Metastable non-equilibrium phases, enhanced reaction rate, and Dynamic Phase Transition in a Model of CO Oxidation with CO Desorption Proceedings of 207th Meeting of The Electrochemical Society Symposium on Electrocatalysis,PV 2005-11, edited by G. Brissard, R. Adzic, V. Birss and A. Wieckiowski, Electrochem. Soc. pag 19-25, (2005) Invited talk.
- E. Machado, G.M.Buendia, P.A. Rikvold and R.M. Ziff " Response of a catalytic reaction to a periodic variation of the CO pressure: Increased CO<sub>2</sub> production and dynamic phase transition". Phys. Rev E **71**, 016120-1 016120-7 (2005).
- G.M.Buendía, P.A.Rikvold, K.Park and M.A.Novotny "Low-temperature nucleation in a kinetic Ising model under different stochastic dynamics with local energy barriers" J. Chem. Phys 121, 4193-4202(2004)
- K.Park, P.A.Rikvold, G.M.Buendía and M.A.Novotny, "Low Temperature Nucleation in a kinetic Ising model with stochastic behavior". Phys. Rev. Lett 92 (1) 015701 (2004)
- E.Machado and G.M.Buendía. Mixed Ising Models with two compensation temperatures. J.Magn.Mag.Mat 272-76 , 249-250 (2004)
- N.Hurtado, G.M.Buendía. Ferrimagnetos de Ising con dilución. Ciencia, 12, 155-158 (2004)
- E.Machado and G.M.Buendía, "Metastability and Compensation Temperatures for a mixed Ising ferrimagnetic system". Phys. Rev. B 68 (22) 224411 (2003)
- N.Hurtado,G.M.Buendía, "Efecto del campo cristalino en un ferrimagnéto mixto de Ising tridimensional" Rev. Mex. Fis 183-185 Suppl 3 (2003).



- G.M.Buendía, S.J.Mitchell, P. A. Rikvold. Surface scaling analysis of a frustrated spring-network model for surfactant-templated hydrogels. *Phys. Rev. E* 66, 046119-046229, (2002)
- Gloria M. Buendía, Steven Mitchell, Per Arne Rikvold. Frustrated Spring-network Model for Crosslinked Polymer Surfaces. *Computer Simulation Studies in Condensed Matter Physics XIX*, Eds. D.P.Landau, S.P.Lewis, H.B.Scuttler, Springer, Berlin, 265-268 (2002).
- G.M.Buendía, E. Machado. Magnetic Response of mixed Ising ferrimagnets in the presence of external magnetic fields. *Ciencia* 9, 239-243 (2001).
- E.Machado, G.M.Buendía. Monte Carlo study of the relaxation of metastable phases of a mixed Ising ferrimagnet. *Modeling Complex Systems: Sixth Granada Lectures on Computational Physics*. Granada, Spain 2000. Edited by P.L.Garrido and J. Marro. American Institute of Physics Proceedings, Melville, New York, 2001.
- G. M. Buendía and E. Machado, "Magnetic behavior of an Ising ferrimagnetic model in an oscillating field". *Phys. Rev. B* 61, 14686-14690 (2000)
- G. M. Buendía and N. Hurtado, "Numerical study of a 3-dimensional mixed Ising ferrimagnet in the presence of magnetic field". *Phys Status Solidi* 220, 959-967 (2000)
- G. M. Buendía and R. Cardona, "Monte Carlo study of a mixed spin-3/2 and spin-1/2 ferrimagnetic model. *Phys. Rev. B* 59, 6784-6789 (1999).
- G. M. Buendía and E. Machado, "Kinetic of a mixed Ising ferrimagnetic system", *Phys. Rev. E* 58, 1260-1265 (1998).
- G. M. Buendía, E. Machado and M. A. Novotny, "Compensation Temperature of a mixed Ising ferrimagnetic model in the presence of external magnetic fields" *Mat. Res. Soc. Symp.Proc* 517, 361-366 (1998).
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#### **Referee**

- American Physical Society (Physical Review, Physical Review Letters, etc)
- European Physical Society, Elsevier
- National Science Foundation USA
- Ciencia. Venezuela