

CURRICULUM VITÆ

1. Personal Information.

- Name: Pedro Gilberto Alvarado Leyva.
- Postal address: Calle la mangana 308
Lomas de Santiago, c.p. 78170.
San Luis Potosí, San Luis Potosí, México.
- e-mail: pal@ciencias.uaslp.mx; pal@galia.fc.uaslp.mx
- Birth date: Febrero, 3 de 1960.
- Birth place: Ensenada Baja California, México.

2. Working Information.

- Position: Professor-Researcher (VI).
Institution: Universidad Autónoma de San Luis Potosí.
Dependence: Facultad de Ciencias.
Departament: Departamento de Física.
Postal address: Álvaro Obregón 64, c.p. 78000 San Luis Potosí, San Luis Potosí, México.

3. Academic Information.

- Grade: Ph. D. degree.
Thesis: Magnetic properties of transition metals *3d* nanostructures, free and embedded.
Advisor: Dr. Jesús G. Dorantes Dávila.
Date: Febrero 29, 2000.
Institution: Facultad de Ciencias, Universidad Autónoma de San Luis Potosí.
- Grade: M. Sc. degree.
Thesis: Dispersion effects in cluster-Bethe lattice structures.
Advisor: Dr. Jesús Urías Hermosillo.
Date: Junio 15, 1987.
Institution: Facultad de Ciencias, Universidad Autónoma de San Luis Potosí.

4. Administratives positions.

- Substitute Teacher Counselor, 1993-1995.
- Head of Physics Department, 2004-2006.
- Coordinator of Physics Department, 2007-2009.
- Substitute Teacher Counselor, 2011-2012.
- Substitute Teacher Counselor, 2014-2016.
- Substitute Teacher Counselor, 2016-2018.

5. Academic distinctions.

- Candidate for Researcher, july 1993 - june 1996.
- Member of National System of Researcher (level 1) since 2005.

6. Thesis advisor.

- Magnetic properties of small pure Vanadium clusters.
Humberto Ramos Saavedra.
B. A., degree.
July, 2003.

- Magnetic and electronic properties of binary Si_nV_m clusters.
José Orlando Martínez Cázares.
B. A., degree.
January, 2010.
- Study of structures of minimum energy of FeNi bimetallic clusters with 13 atoms and their magnetic behavior.
Juana Alejandra González Cordova
B. A., degree.
March, 2015.
- Electronic properties of catalytic activity of small binary nanoalloys M_xSn_y ($\text{M} = \text{Fe}, \text{Co}, \text{Ni}, \text{Pt}$) with $x + y \leq 5$ and magnetic properties of FePt_{11} clusters. March, 2015.
Elisa Marina Sosa Hernández
Ph. D., degree
May, 2018.

7. Academic stays.

- Sabbatical stay, from october 2011 to september 2012.
Departament of Atomic, Theoretical Physics and Optics.
Faculty of Sciences.
University of Valladolid, Spain.
- Short stay of research, from may 20, 2016 to june 15, 2016.
Departament of Atomic, Theoretical Physics and Optics.
Faculty of Sciences.
University of Valladolid, Spain.

8. Referee in indexed journals.

- Materials Letters.
- Journal of Nanoparticle Research.
- Surface Review Letters.
- Superficies y Vacío (Jornal of Surfaces and Vacuum).
- Modern Physics Letters.

9. Referee of research projects.

- First principles studies of interplay between structural, electronic, phononic and magnetic properties of manganites.
Convocatoria: COO5-2009-01, CONACyT.
- Synthesis and characterization of S-Ag nanostructures for electronic applications.
Convocatoria: M0030-2009-02, CONACyT.
- Structure of nanoparticles with TEM y DRX and their applications in cancer studies.
Convocatoria: I0010-2009-01, CONACyT.
- Microwave dedicated nanostructured ferrite ceramics: from basic research to integrated devices.
Convocatoria: C004-2010-01, CONACyT.
- Study of the optical properties and electric properties of Si-O nanostructures for their potential application in solar cells.
Convocatoria: CB-2010-01, CONACyT (FOMIX CHIHUAHUA).
- Development of semiconductor nanostructured materials for quantum computers.
Convocatoria: CB-2010-01, CONACyT.
- Study of the electric and magnetic properties of nanocomposites.
Convocatoria: Fondo SEP-CONACyT, 2012.

- Strengthening the infrastructure of the measuring laboratory of physical properties in IPICYT.
Convocatoria: INFR-2013-01, CONACyT.

10. Scientific production.

- P. Alvarado, J. Dorantes-Dávila and H. Dreyssé.
Structural effects on the Magnetism of Small Vanadium Clusters.
Phys. Rev. B **50**, (1039), 1994.
- P. Alvarado, J. Dorantes-Dávila and G.M. Pastor.
Magnetic Properties of 3d Transition Metals Nanostructures: Cr and V Clusters Embedded in bulk Fe.
Phys. Rev. B, **58**, (12216), 1998.
- P.G. Alvarado-Leyva and J. Dorantes-Dávila.
Magnetic moments of a pair of Cr₄ atomic clusters embedded in bulk Fe in terms of the spatial orientation.
Superficies y Vacío, **13**, (117), 2001.
- J.L. Morán-López, P.G. Alvarado-Leyva and J.M. Montejano-Carrizales.
Local magnetic moments of Fe₁/Cr_N nanoinclusions embedded in bulk Fe.
Surf. Rev. Lett., **9**, (1747), 2002.
- P.G. Alvarado-Leyva, J.M. Montejano-Carrizales and J.L. Morán-López.
Magnetic properties of Fe₁/Cr_N nanoinclusions in Fe.
Revista Mexicana de Física, **48**, (519), 2002.
- P.G. Alvarado-Leyva and J. Dorantes-Dávila.
Orientation effects on the magnetic properties of a pair Cr₆ and V₆ atomic clusters embedded in bulk Fe.
Phys. Stat. Sol (b), **238**,(54), 2003.
- E.M. Sosa-Hernández and P.G. Alvarado-Leyva.
Local magnetic moments of Fe₁/V_N nanoinclusions in bulk Fe.
Phys. Lett. A **315**, (237) 2003.
- E.M. Sosa-Hernández, P.G. Alvarado-Leyva, J.M. Montejano-Carrizales and F. Aguilera-Granja.
Size effects on the magnetism of vanadium clusters.
Revista Mexicana de Física, **50**, (30), 2004.
- P.G. Alvarado-Leyva, E.M. Sosa-Hernández, J.M. Montejano-Carrizales.
Magnetic properties of small vanadium clusters.
Journal of Alloys and Compounds. **369**,(52), 2004.
- E.M. Sosa-Hernández and P.G. Alvarado-Leyva.
Magnetic Properties of clusters Fe₁/V_N ($N \leq 144$) embedded in a Fe matrix.
Eur. Phys. J. D **30**, (335), 2004.
- E.M. Sosa-Hernández and P.G. Alvarado-Leyva.
Proximity effects on the local magnetic moments of clusters V₆-V₉ embedded in a Fe matrix.
Journal of Alloys and Compounds. **424**, (67), 2006.
- E.M Sosa-Hernández and P.G. Alvarado-Leyva.
Proximity effects on the magnetic behavior of Cr₆-Cr₉ atomic clusters embedded in Fe bulk.
Superficies y Vacío. **20**(1), (8), 2007.
- E.M. Sosa-Hernández and P.G. Alvarado-Leyva.
Local magnetic moments in V_nSi_m ($n + m \leq 4$) clusters.
Proceedings of XVIII Latin American Symposium of Solid State Physics (SLAFES06).
Revista Mexicana de Física, **53** (7), (167), 2007.
- J.M. Montejano-Carrizales, P.G. Alvarado-Leyva and E.M. Sosa-Hernández.
Magnetic properties of a pair V₄ interacting clusters in a Fe matrix.
Journal of Nanoscience and Nanotechnology, **8**, (6593), 2008.

- E.M. Sosa-Hernández and P.G. Alvarado-Leyva.
Magnetism of stable structures of small binary Co_nSi_m ($n + m \leq 4$) clusters.
Superficies y Vacío, **21(4)**, (22), 2008.
- P.G. Alvarado-Leyva and E.M. Sosa-Hernández.
Magnetic properties of stable structures of small binary Fe_nGe_m ($n + m \leq 4$) clusters.
Physica E: Low dimensional systems and nanostructures, **42**, (17) 2009.
- Pedro G. Alvarado-Leyva and Elisa M. Sosa-Hernández.
A density functional study of small niobium clusters.
Surf. Rev. Lett., **16(6)**, (815) 2009.
- Elisa M. Sosa-Hernández y Pedro G. Alvarado-Leyva.
Estudio del magnetismo de estructuras estables de pequeños cúmulos de titanio a través de la Teoría de la Funcional de la Densidad.
Superficies y Vacío **23(2)**, (27) 2010.
- P.G. Alvarado-Leyva, F. Aguilera-Granja, L.C. Balbás and A. Vega.
Antiferromagnetic-like coupling in the cationic iron cluster of thirteen atoms.
Phys. Chem. Chem. Phys., **15**, (14458) 2013.
- P.G. Alvarado-Leyva, F. Aguilera-Granja, A. García-Fuente and A. Vega.
Spin-orbit effects on the structural, homotop and magnetic configurations of small pure and Fe-doped Pt clusters.
Aceptado para su publicación en *Journal of Nanoparticle Research*.
- Pedro Gilberto Alvarado Leyva, Elisa Marina Sosa Hernández, Juan Martín Montejano Carrizales and Faustino Aguilera Granja.
Stable geometries and magnetic properties of neutral Sn_{x+1} and FeSn_x ($x \leq 8$) clusters.
Eur. Phys. J. D **69**, (59) 2015.
- Elisa Marina Sosa Hernández, Juan Martín Montejano Carrizales and Pedro Gilberto Alvarado Leyva.
Geometrical shapes, stability and electronic behavior of small Fe_xSn_y ($x + y \leq 5$) atomic clusters.
Eur. Phys. J. D **69** (212), 2015.
- Elisa Marina Sosa Hernández, Juan Martín Montejano Carrizales and Pedro Gilberto Alvarado Leyva.
Stability and magnetic behavior of small Co_xSn_y ($x + y \leq 5$) atomic clusters.
Journal of Alloys and Compounds, **632**, 772 (2015).
- Elisa Marina Sosa Hernández, Juan Martín Montejano Carrizales and Pedro Gilberto Alvarado Leyva.
Global minimum structures, stability and electronic properties of small Ni_xSn_y ($x + y \leq 5$) bimetallic structures; a DFT study.
Eur. Phys. J. D **70** (208) 2016.
- Elisa Marina Sosa Hernández, Juan Martín Montejano Carrizales and Pedro Gilberto Alvarado Leyva.
Global minimum structures, stability and electronic properties of small Fe_xCu_y ($x + y \leq 5$) bimetallic clusters: a DFT study.
Eur. Phys. J. D **71**, 284 (2017).
- R.H. Aguilra-del-Toro, P.G. Alvarado-Leyva and A. Vega.
Uncovering the magnetic properties of the Ag_xNi_y ($x + y = 55$) nanoalloys in the whole range of compositions.
J. Mag. Mag. Mater. **474**, 551 (2019).

11. Research projects supported.

- Magnetic properties of $3d$ atomic clusters embedded in a Fe matrix.
Supported by Universidad Autónoma de San Luis Potosí, under contract C00-FAI-11-13.76
- Magnetic properties of binary atomic clusters V_nSi_m .
Supported by Universidad Autónoma de San Luis Potosí, under contract C06-FAI-11-29.66

- Electronic and magnetic properties of X_nSi_m ($X=Co, V$) atomic clusters. Supported by National Council of Science and Technology, under contract 67419.
- Structural, electronic and magnetic properties of FeCu and CoCu nanoalloys. Supported by National Council of Science and Technology, under contract 165078.
- Spin-orbit effect in the magnetic anisotropy of CoCu, CoAu and FePt nanoparticles. Supported by National Council of Science and Technology, under contract 237882.