CURRICULUM VITAE

1. Datos Personales

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2. Antecedentes Académicos

2.1 Grados Académicos y Títulos

2016: Doctora por la Universidad de Navarra. Programa de Doctorado en Sistemas Complejos, Universidad de Navarra, España.

Director de Tesis: Prof. Dr. Héctor Mancini.

2003: Título Profesional de Físico, Universidad del Valle, Colombia.

2.2 Posiciones Académicas

Desde 2025: Académica Jornada Completa (Profesora Asociada), Universidad de Tarapacá, Chile.

2022 – 2025: Académica Jornada Completa (Profesora Asistente), Universidad de Tarapacá, Chile.

2018 – 2022: Investigadora, Universidad de Tarapacá, Chile.

2017 – 2018: Académica Jornada Completa, Escuela de Física y Nanotecnología, Yachay Tech, Urcuquí, Ecuador.

2016 – 2017: Investigadora Postdoctoral, Universidad de Tarapacá. Arica, Chile (Beca UTA).

2.3 Estadías largas de investigación

1. **2014 – 2015**: Escuela de Física y Astronomía, Universidad de Glasgow, Glasgow, Reino Unido. *Grupo de la Materia Condensada y Materiales* (Con un contrato Honorario de investigador Asociado).

2. **2011 – 2013**: Instituto Max-Planck de Polímeros, Maguncia, Alemania. Grupo teórico bajo la supervisión del Prof. Dr. Harald Pleiner. (Con un contrato Honorario).

3. Líneas de investigación

- Física Computacional.
- Física de Fluidos.
- Física No Lineal.
- Física Cuántica.
- Física de Materiales.

4. Indicadores cienciométricos

- **Información en Web of Science (WOS)** (Noviembre 2026): Número de citas 1493 / Índice–h 21.
- **Información en Scopus** (Noviembre 2026): Número de citas 1608 / Índice–h 20.
- **Información en Google Scholar** (Noviembre 2026): Número de citas 1907 / Índice–h 23 / Índice–i10 74.

5. Publicaciones

5.1 Publicaciones Internacionales WOS [142]

2026 [20]

1. S. Sachhin, U. Mahabaleshwar, S. Pradeepkumar, **L.M. Pérez**, J. Kim. *Algebraically decaying solutions for magnetohydrodynamic heat and mass transfer in Newtonian flow driven by stretching or shrinking surface: applications to thermal management and cooling technologies*. International Communications in Heat and Mass Transfer **180**, 112537 (2026).
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2. K.M. Nihaal, U.S. Mahabaleshwar, **L.M. Pérez**, F-J Granados-Ortiz, J. Ortega-Casanova. *Computational magnetohydrodynamics of a Fe3O4-water-based nanofluid flow over a nonlinear stretching surface with velocity and thermal wall slip under variations in the shape factor*. International Journal of Numerical Methods for Heat & Fluid Flow **36**, 450-475 (2026).
https://doi.org/10.1108/HFF-02-2025-0123
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3. E. Saavedra, U. J Guevara, C. Saji, T. González-Vega, P. Díaz, **L.M. Pérez**. *Tunable Spin-Wave Resonance and Chirality Control in Concentric Nanotori for Advanced Spintronic Applications*. Chinese Journal of Physics **100**, 95-102 (2026).
https://doi.org/10.1016/j.cjph.2025.12.035
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4. S.M. Sachhin, M.S. Bharath, U.S. Mahabaleshwar, G.V. Bognar, **L.M. Pérez**. *Dual modeling of unsteady radiative non-Newtonian fluid flow with Biot boundary conditions using novel time-dependent solutions.* Mechanics of Time-Dependent Materials **30**, 5 (2026).
https://doi.org/10.1007/s11043-025-09849-x
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5. B. Jezerkić, H.A. Benitez, I.P. Živković, **L.M. Pérez**, A. Matheu, A. Ignjatović Ćupina, M. Kavran, R. Álvarez-Varas, D. Lemić. *Wing Shape Variation in Drosophila suzukii Associated with Host Plants and Geographic Origin*. Agronomy-Basel **16**, 1587 (2026).
https://doi.org/10.3390/agronomy16161587
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6. B.K. Sharma, T. Kumari, **L.M. Pérez**. *Enhanced thermal transport and entropy reduction in bio-convective tri-hybrid MHD nanofluids through porous media under exponential heating*. Journal of Thermal Analysis and Calorimetry **151**, 17519 (2026).
https://doi.org/10.1007/s10973-026-16010-4
[WOS information: Q1, IF: 4.1]

7. **L.M. Pérez**, J. Vélez, J. Cueva, W. Marín, M. Suazo, P. Díaz, T. González-Vega, J. Bragard, D. Laroze. *Multistable chaotic dynamics and basin fragmentation in a minimal model for driven active matter.* Communications in Nonlinear Science and Numerical Simulation **163**, 110603 (2026).
https://doi.org/10.1016/j.cnsns.2026.110603
[WOS information: Q1, IF: 3.8]

8. U.S. Mahabaleshwar, K.M. Nagarathna, K.M. Nihaal, **L.M. Pérez**. *Numerical Analysis of Nanofluid Flow Over Rotating Disk With Heat Source/Sink and Activation Energy.* ZAMM - Journal of Applied Mathematics and Mechanics **106**, e70467 (2026).
https://doi.org/10.1002/zamm.70467
[WOS information: Q1, IF: 3.7]

9. Y. Añino, J. Hernández-Martelo, F. Moya, A. Piñeiro-González, **L.M. Pérez**, D. Gálvez, Y. Vega-Rovira, J. Trujillo, A. Garrido, D. Arrocha, F. Cruz-Jofré, H.A. Benítez. *Testing the Island Effect in a Highly Mobile Pollinator: Wing Morphological Divergence in Euglossa mixta from Continental and Insular Panama.* Animals **16**, 227 (2026).
https://doi.org/10.3390/ani16020227
[WOS information: Q1, IF: 3.2]

10. F. Cruz-Jofré, M.J. Pérez-Álvarez, A. San Martín, F. Toro, J. Capella, J. Gibbons, C. Olavarría, J. Acevedo, E. Poulin, **L.M. Pérez**, M.J. Suazo, A. Matheu, H.A. Benítez. *Patterns of Dorsal Fin Shape Variation in Commerson's Dolphins Across Isolated Subantarctic Populations*. Animals **16**, 2510 (2026).
https://doi.org/10.3390/ani16162510
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11. F. Moya, T. Segovia-Jara, V. Tapia, C. Aguilar, J. Hernandez-Martelo, **L.M. Pérez**, M.J. Suazo, A. Matheu, Y. Añino, D. Gálvez, E. Romero-Romero, A. Santos, C. Rodríguez-Poveda, H.A. Benítez. *Deforestation Increases Developmental Instability in the Orchid Bee Euglossa imperialis Across Protected Areas of Panama.* Insects **17**, 818 (2026).
https://doi.org/10.3390/insects17080818
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12. A.K. Saini, B.K. Sharma, A. Elfasakhany, **L.M. Pérez**. *Stability and sensitivity analysis of entropy generation of 3D EMHD casson ternary hybrid nanofluid flow over an inclined porous surface: Response surface methodology.* Materials Today Communications **55**, 115812 (2026).
https://doi.org/10.1016/j.mtcomm.2026.115812
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13. K. Lakaal, **L.M. Pérez**, V. Prasad, D. Laroze, V. Chaudhary, W.J. Pasek, A. En Naciri, A. El Fatimy, E.M. Feddi. *Magneto-transport and magnetocaloric properties of highly doped (Ga, Mn) As DMS confined systems*. Journal of Physics D: Applied Physics 59, 105001 (2026).
https://doi.org/10.1088/1361-6463/ae4b4b
[WOS information: Q2, IF: 3.2]

14. E.A. Saavedra-Díaz, U. Guevara, H. Vigo-Cotrina, M. Al Bahri, T. Gonzalez-Vega, **L.M. Pérez**. *Controlling the spin-wave modes in planar nanostructure with wire-ring morphology.* Physica Scripta 101, 145902 (2026)
https://doi.org/10.1088/1402-4896/ae5615
[WOS information: Q2, IF: 2.6]

15. E. Saavedra, H. Vigo-Cotrina, M. Al Bahri, **L.M. Pérez**, F. Tejo. *Angular dependence of stress-induced spin-wave dynamics in antivortices stabilized in square FeGa nanodots.* Journal of Magnetism and Magnetic Materials **648**, 174091 (2026).
https://doi.org/10.1016/j.jmmm.2026.174091
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16. Y. Añino, R. Rodriguez, D. Gálvez, **L.M. Pérez**, M.J. Suazo, H.A. Benítez. *Developmental Stability Across Seasons but Not Months: Wing Asymmetry Responses of an Orchid Bee to Short-Term Climate Variability.* Acta Zoologica, e70029 (2026).
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17. A. Salazar, Q. Potosi, D. Laroze, **L.M. Pérez**, B. De Zayas, C. Rojas. *Study of the Superradiance Phenomenon in the α-attractor Potential using the Log Derivative Method*. International Journal of Modern Physics A **41**, 2650175 (2026).
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18. U.S. Mahabaleshwar, G.M. Sachin, K.N. Sneha, T. Maranna, **L.M. Pérez**, J. Wang. *Thermal performance analysis of magnetohydrodynamics with carbon nanotubes on a stretching/shrinking porous sheet.* International Journal of Nanoscience 24, 2650002 (2026).
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19. L. Pedraja-Rejas, N. Ocaranza, P. Ocaranza Paz, **L.M. Pérez**. *Factors Associated with Dropout Intention in Engineering Education: A Learning Interpretable Modeling Approach.* Behavioral Sciences **16**, 717 (2026).
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20. U.S. Mahabaleshwar, S.M. Sachhin, G.M. Sachin, S.W. Joo, U. Guevara, **L.M. Pérez**. *Heat and mass transfer impact on magnetized chemically reactive sodium alginate flow in porous structures for nanotechnology applications*. Journal of Thermal Stresses, en prensa, publicado en línea el 27-10-2026 (2026).
https://doi.org/10.1080/01495739.2026.2743583
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21. S.M. Sachhin, F.-J. Granados-Ortiz, U.S. Mahabaleshwar, J. Ortega-Casanova, **L.M. Pérez**. *Heat and mass transfer analysis of a Bingham ternary nanofluid exposed to radiation over stretching/shrinking sheets and Stefan blowing effect*. Alexandria Engineering Journal **129**, 515 (2025).
https://doi.org/10.1016/j.aej.2025.06.026
[WOS information: Q1, IF: 6.4]

22. B.K. Sharma, Rekha, S. Yadav, B. Almohsen, **L.M. Pérez**, I.E. Sarris. *Entropy generation and heat transfer in nonlinear Buoyancy–driven Darcy–Forchheimer hybrid nanofluids with activation energy.* Nanotechnology Reviews **14**, 20250158 (2025).
https://doi.org/10.1515/ntrev-2025-0158
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23. S.M. Sachhin, U.S. Mahabaleshwar, N. Swaminathan, **L.M. Pérez**, J. Wang. *Thermal dynamics and magnetohydrodynamics in ferrofluidic wall jet flow: Entropy generation in heat and mass transfer*. Journal of Molecular Liquids **427**, 127449 (2025).
https://doi.org/10.1016/j.molliq.2025.127449
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24. M. Farkous, J.E. Hamdaoui, **L.M. Pérez**, H. Erguig, D. Laroze, A.E. Naciri, A.E. Fatimy, E.M. Feddi. *Engineering Tunable Electronic and Photocatalytic Properties in MoSSe/AlN Heterostructures.* ACS Applied Electronic Materials **7**, 10172 (2025).
https://doi.org/10.1021/acsaelm.5c01588
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25. S.M. Sachhin, U.S. Mahabaleshwar, D. Laroze, **L.M. Pérez**. *Exact multiple solutions for rheological analysis of Darcy–Brinkman model on Bingham sodium alginate suspensions driven by 2D bidirectional moving plate with Navier and Biot conditions*. Journal of Thermal Analysis and Calorimetry **150**, 18327 (2025).
https://doi.org/10.1007/s10973-025-14693-9
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26. A. Kumar, B.K. Sharma, B. Almohsen, **L.M. Pérez**, K. Urbanowicz. *Artificial neural network analysis of Jeffrey hybrid nanofluid with gyrotactic microorganisms for optimizing solar thermal collector efficiency.* Scientific Reports **15**, 4729 (2025).
https://doi.org/10.1038/s41598-025-88877-6
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27. I. Montoya De Los Santos, M. Courel, V.I. Moreno-Oliva, E. Dueñas-Reyes, E.B. Díaz-Cruz, M. Ojeda-Martínez, **L.M. Pérez**, D. Laroze. *The study of inorganic absorber layers in perovskite solar cells: the influence of CdTe and CIGS incorporation*. Scientific Reports **15**, 10353 (2025).
https://doi.org/10.1038/s41598-025-88338-0
[WOS information: Q1, IF: 4.9]

28. Y.A. Romaniuk, I.S. Babichuk, V.V. Korotyeyev, V.O. Yukhymchuk, V.M. Dzhagan, S.V. Virko, M.O. Semenenko, M.O. Stetsenko, A. Tiutiunnyk, **L.M. Pérez**, D. Laroze. *Influence of phonon anharmonicity on Raman spectra of $Cu_2ZnSn(S, Se)_4$ polycrystalline thin films through computational study.* Scientific Reports **15**, 366 (2025).
https://doi.org/10.1038/s41598-024-83117-9
[WOS information: Q1, IF: 4.9]

29. J.A. Vélez, **L.M. Pérez**, A.E. Pizarro, L. Pedraja-Rejas, O.J. Suarez, R. Hernández-García, R.J. Barrientos, J. Bragard, D. Laroze, R.M. Otxoa. *Characterization of quasi-periodic dynamics of a magnetic nanoparticle*. Communications in Nonlinear Science and Numerical Simulation **149**, 108942 (2025).
https://doi.org/10.1016/j.cnsns.2025.108942
[WOS information: Q1, IF: 3.8]

30. U.S. Mahabaleshwar, K.M. Nihaal, **L.M. Pérez**, H.F. Oztop. *An analysis of heat and mass transfer of ternary nanofluid flow over a Riga plate: Newtonian heating*. Numerical Heat Transfer, Part B: Fundamentals **86**, 310 (2025). https://doi.org/10.1080/10407790.2023.2282165
[WOS information: Q2, IF: 3.7]

31. H.A. Benítez, R. Oróstica-Pinochet, M.J. Suazo, **L.M. Pérez**, J. Hernández-Martelo, C. Valdes, M.T. Muñoz-Quezada, M. Correa. *Wing Shape Fluctuating Asymmetry in Flies: Insights into Environmental and Public Health Risk*. Animals **15**, 3124 (2025). https://doi.org/10.3390/ani15213124
[WOS information: Q1, IF: 3.2]

32. X. Calderon, G. Artemov, V.A. Burlak, S. Alexeeva, R. Hernández-P, M.J. Suazo, **L.M. Pérez**, H.A. Benítez, M. Correa. *Unraveling Wing Shape Variation in Malaria Mosquitoes from the Arctic Edge: A Geometric Morphometric Study in Western Siberia.* Animals **15**, 2949 (2025). https://doi.org/10.3390/ani15202949
[WOS information: Q1, IF: 3.2]

33. N. El Ouarie, J. El Hamdaoui, A. El Aouami, M. El-Yadri, G. Shankar-Sahoo, K.G. Rodriguez-Osorio, M. Courel, **L.M. Pérez**, P. Díaz, D. Laroze, V. Karade, A. El Fatimy, E.M. Feddi. *Analytical modeling and performance enhancement of Cu (In, Ga) Se_2 chalcopyrite solar cells through nanostructure integration*. Materials Research Bulletin **184**, 113260 (2025). https://doi.org/10.1016/j.materresbull.2024.113260
[WOS information: Q2, IF: 5.8]

34. K.G. Rodriguez-Osorio, J.A.A. Arvizu, I. Montoya De los Santos, J.P. Moran-Lazaro, M. Ojeda-Martínez, F.J. Sánchez-Rodríguez, L.A.A. Sanchez-Hernandez, **L.M. Pérez**, D. Laroze, P. Chandrasekar, S. Routray, M. Courel. *Experimental and Theoretical Advances in $Cu_2ZnSn(S, Se)_4$ solar cells*. Journal of Physics D: Applied Physics **58**, 133001 (2025). https://doi.org/10.1088/1361-6463/adab7f
[WOS information: Q2, IF: 3.2]

35. J. Núñez, G. Liendo-Polanco, J. Lezama, D. Venegas-Yazigi, J. Rengel, U. Guevara, P. Díaz, E. Cisternas, T. González-Vega, **L.M. Pérez**, D. Laroze. *Implementation of a Particle Swarm Optimization Algorithm with a Hooke's Potential, to Obtain Cluster Structures of Carbon Atoms, and of Tungsten and Oxygen in the Ground State.* Inorganics **13**, 293 (2025). https://doi.org/10.3390/inorganics13090293
[WOS information: Q2, IF: 3.4]

36. A.B. Davlatov, A.H. Hameed, K. Feddi, P.J. Baymatov, B.T. Abdulazizov, A.A. Abdukarimov, A.G. Al-Shatravi, A.H. Al-Khursan, **L.M. Pérez**, D. Laroze, E. Feddi. *Strain, pressure and temperature effects on linear and nonlinear optical properties of $InP/InAs_{1-x}P_x/InP$ quantum well heterostructures*. Applied Physics A **131**, 1 (2025). https://doi.org/10.1007/s00339-024-08057-7
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37. M. Kria, M. El-Yadri, **L.M. Pérez**, A. Tiutiunnyk, P. Díaz, L. Pedraja-Rejas, D. Laroze, A.B. Davlatov, S.C. Kenfack, M. Tshipa, E. Feddi. *Thermodynamic and magnetic properties of cylindrical of nanoshell GaAsMn considering Rashba spin–orbit coupling.* Physica Scripta **100**, 085958 (2025). https://doi.org/10.1088/1402-4896/adf57c
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38. M.Pajač-Beus, D. Lemic, H.A. Benítez, **L.M. Pérez**, M. Rot, A. Konjević, S.S. Andreadis, I.P. Živković. *Tracing the invasion: Wing morphometrics reveal population spread and adaptation patterns of Halyomorpha halys (Stål, 1855) across Southern Europe.* PLoS One **20**, e0319197 (2025).
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39. I.E. Alvial, N. Rojas-Hernández, N. Guerra, D. Véliz, C.R. González, **L.M. Pérez**, H.A. Benítez. *Genetic structure of the northern house mosquito (Diptera: Culicidae) in a WNV-susceptible area*. Journal of Heredity **116**, 241 (2025).
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[WOS information: Q3, IF: 2.2]

40. A.H. Smith-Pardo, J. Hernandez-Martelo, M.J. Suazo, **L.M. Pérez**, C. Peña-Aliaga, J.S. Garcia, M. Saravia, T. Acuña-Valenzuela, H.A. Benítez, M. Correa. *When Shape Defines: Geometric Morphometrics Applied to the Taxonomic Identification of Leaf-Footed Bugs of the Genus Acanthocephala (Hemiptera: Coreidae).* Diversity-Basel **17**, 680 (2025).
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[WOS information: Q2, IF: 2.3]

41. J. Hernández-Martelo, M. Jabs, T. Contador, S. Kim, S. young Lee, **L.M. Pérez**, M. Remedios-De-Leon, E. Morelli, P. Convey, H.A. Benítez. *Evolving to invade: Using geometric morphometrics to assess wing shape variation in the Antarctic non-native fly Trichocera maculipennis.* Zoologischer Anzeiger **319**, 70 (2025).
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[WOS information: Q2, IF: 1.3]

42. A. Quintana-Canabal, D. Ahumada-C., L. Guevara-Rincón, C. García-Bayona, L. Nuñez-López, J. Hernández-Martelo, **L.M. Pérez**, H.A. Benítez. *Exploring shape and size variation in Schizodon fasciatus (Characiformes: Anostomidae) across the Catatumbo river basin, Colombia*. Zoomorphology **144**, 59 (2025).
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43. A. Garzón, R. Fernández, V.A. Arévalo, D. Laroze, **L.M. Pérez**, B. De Zayas, C. Rojas. *The DKP Equation in Presence of a Woods-Saxon Potential: Transmission Resonances and Bound States*. International Journal of Modern Physics A **40**, 2550078 (2025).
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44. A. Kumar, B.K. Sharma, T. Muhammad, **L.M. Pérez**. *Optimization of thermal performance in hybrid nanofluids for parabolic trough solar collectors using Adams–Bashforth–Moulton method*. Ain Shams Engineering Journal **15,** 103106 (2024).
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45. P. Díaz, H. Molinares, **L.M. Pérez**, D. Laroze, J. Bragard, B.A. Malomed. *Stable semivortex gap solitons in a spin–orbit-coupled Fermi gas*. Chaos, Solitons & Fractals **179**, 114456 (2024).
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46. L.I. Reyes, **L.M. Pérez**, L. Pedraja-Rejas, P. Díaz, J. Mendoza, J. Bragard, M.G. Clerc, D. Laroze. *Characterization of Faraday patterns and spatiotemporal chaos in parametrically driven dissipative systems*. Chaos, Solitons & Fractals **186**, 115244 (2024).
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47. K. Lakaal, **L.M. Pérez**, M. Kria, J. El Hamdaoui, C.O. Edet, V. Prasad, D. Laroze, E. Feddi. *Effects of electron–phonon coupling and Rashba spin–orbit interaction on thermodynamic and magnetic properties of quantum dots*. Chinese Journal of Physics **89**, 390 (2024).
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[WOS information: Q1, IF: 5.3]

48. U.S. Mahabaleshwar, G.P. Vanitha, **L.M. Pérez**, H.F. Oztop. *Micropolar nanoparticles flow on a stretching/shrinking sheet with multiple slips*. Chinese Journal of Physics **87**, 646 (2024).
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49. U.S. Mahabaleshwar, S.M. Sachhin, **L.M. Pérez**, H.F. Oztop. *An impact of inclined MHD on biviscosity Bingham hybrid nanofluid flow over porous stretching/shrinking sheet with heat transfer*. Journal of Molecular Liquids **398**, 124244 (2024).
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50. U.J. Guevara, J. Núñez, **L.M. Pérez**, A. Tiutiunnyk, N. Urdaneta, E. Cisternas, D. Laroze. *Optoelectronic Response to the Fluor Ion Bond on 4-(4, 4, 5, 5-Tetramethyl-1, 3, 2-dioxoborolan-2-yl) benzaldehyde*. International Journal of Molecular Sciences **25**, 5000 (2024).
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51. A. Carrillo-Osuna, F.J. Sánchez-Rodríguez, K.G. Rodriguez-Osorio, I. Montoya De Los Santos, J.P. Morán-Lázaro, M.O. Martinez, **L.M. Pérez**, D. Laroze, M. Courel. *Towards the CdS/SnSe solar cell optimization: Understanding the transport mechanisms*. Results in Physics **67**, 108035 (2024).
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52. M.C. Correa, J.P. Gutiérrez-Jara, K. Vogt-Geisse, H. Benitez, **L.M. Pérez**, A. Fleisch, T. Malausa, L. Queguiner, S. Rodríguez, N. Ris, P. Kreiter. *Better alone than in bad company? Modeling the intra-guild predation and release timing in the biological control of Pseudococcus viburni*. Journal of Pest Science **97**, 1913 (2024).
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53. R. Horchani, E. Omugbe, I.J. Njoku, **L.M. Pérez**, C.A. Onate, A. Jahanshir, E. Feddi, K.O. Emeje, E.S. Eyube. *Relativistic bound state solutions and quantum information theory in D dimensions under exponential-type plus Yukawa potentials*. Scientific Reports **14**, 28582 (2024).
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115. M. Farkous, M. El-Yadri, H. Erguig, **L.M. Pérez**, D. Laroze, C.V. Nguyen, N.T.T. Binh, N.N. Hieu, H.V. Phuc, M. Sadoqi, G. Long, E. Feddi. *Anisotropy of effective masses induced by strain in Janus MoSSe and WSSe monolayers*. Physica E-Low-Dimensional Systems & Nanostructures **134**, 114826 (2021).
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116. A. Talbi, M. El Haouari, K. Nouneh, **L.M. Pérez**, A. Tiutiunnyk, D. Laroze, M. Courel, M.E. Mora-Ramos, E. Feddi. *LO-Phonons and dielectric polarization effects on the electronic properties of doped GaN/InN spherical core/shell quantum dots in a nonparabolic band model*. Applied Physics A **127**, 30 (2021).
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117. J. Bragard, J.A. Vélez, J.A. Riquelme, **L.M. Pérez**, R. Hernández-García, R.J. Barrientos, D. Laroze. *Study of type-III intermittency in the Landau-Lifshitz-Gilbert equation*, Physica Scripta **96**, 124045 (2021).
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118. A. El. Aouami, K. Feddi, M. Courel, F. Dujardin, D. Laroze, **L.M. Pérez**, M. Zazoui, E.M. Feddi. *Numerical modeling of the size effect in CdSe/ZnS and InP/ZnS-based Intermediate band solar cells*. Physica Scripta **96**, 035502 (2021).
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119. N. Aghoutane, **L.M. Pérez**, A. Tiutiunnyk, D. Laroze, S. Baskoutas, F. Dujardin, A. El Fatimy, M. El-Yadri, E.M. Feddi. *Adjustment of Terahertz Properties Assigned to the First Lowest Transition of (D^+, X) Excitonic Complex in a Single Spherical Quantum Dot Using Temperature and Pressure*. Applied Sciences-Basel **11**, 5969 (2021).
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121. M.G. Barseghyan, H.M. Baghramyan, **L.M. Pérez**, D. Laroze. *Magnetic field effect on the electronic states and the intraband optical absorption spectrum of a laser dressed double quantum dot molecule*. Chinese Journal of Physics **68**, 507 (2020).
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5.2 Publicaciones Scopus, WoS Emerging & Capítulos de Libros Internacionales [17]

2026 [7]

1. T. Anusha, **L.M. Pérez**, U.S. Mahabaleshwar, D. Zeidan. *An MHD nanofluid flow with Marangoni laminar boundary layer over a porous medium with heat and mass transfer.* International Journal of Modelling and Simulation **46**, 366–382 (2026).
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2. K.M. Nihaal, U.S. Mahabaleshwar, A. Chan, M. Arivanandhan, G.M. Sachin, **L.M. Pérez**. *Investigation of thermal radiation and chemical reaction impacts on Carreau-Casson nanofluid flow across a stretching sheet: A solar aircraft application.* Next Nanotechnology **10**, 100600 (2026).
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3. K. Nihaal, K. Nagegowda, U. Mahabaleshwar, U. Guevara, **L.M. Pérez**. *An irreversibility analysis of ternary hybrid nanofluid flow with thermal radiation and porous medium: A sensitivity analysis approach.* Thermal Advances **8**, 100199 (2026).
   https://doi.org/10.1016/j.thradv.2026.100199

4. S. Sachhin, U. Mahabaleshwar, D. Laroze, **L.M. Pérez**. *An effect of Joule heating and viscosity ratio on magnetic ferrohybrid nanofluid flow with entropy generation analysis.* International Journal of Ambient Energy **47**, 2663966 (2026).
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5. S.M. Sachhin, K. Nagegowda, U.S. Mahabaleshwar, **L.M. Pérez**, G. Lorenzini. *Joule Heating and Viscosity-Ratio Effects on Dissipative Ternary Nanofluid Flow over a Permeable Surface.* International Journal of Computational Methods and Experimental Measurements **14**, 57–80 (2026).
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6. S.M. Sachhin, U.S. Mahabaleshwar, **L.M. Pérez**, L. Miller, R. Rodríguez-Ramos, R. Penta. *Influence of Magnetohydrodynamics and Viscosity Ratio on Modified Tetra-Hybrid Nanofluid Flow under a Threshold Non-Fourier Heat Flux Framework*. La Matematica **5**, 70 (2026). https://doi.org/10.1007/s44007-026-00249-2

7. K.M. Nihaal, S.R. Pradeepkumar, U.S. Mahabaleshwar, **L.M. Pérez**. *A study on combined impact of Cattaneo-Christov heat and mass flux of Casson fluid flow over a curved stretching sheet*. Next Mechanical Engineering, 100004 (2026). https://doi.org/10.1016/j.nxmech.2026.100004

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8. K.M. Nihaal, U.S. Mahabaleshwar, N. Swaminathan, D. Laroze, **L.M. Pérez**. *Thermal transfer enhancement in a Casson-based hybrid nanofluid flow in a permeable wall jet with suction and injection*. Multiscale and Multidisciplinary Modeling, Experiments and Design **8**, 163 (2025). https://doi.org/10.1007/s41939-025-00749-8

9. A.H. Smith-Pardo, **L.M. Pérez**, H.A. Benítez. *Unlocking species identity: geometric morphometrics of head and thorax shapes in invasive and non-invasive quarantine-significant thrips (Thysanoptera: Terebrantia).* Frontiers in Insect Science **5**, 1558242 (2025). https://doi.org/10.3389/finsc.2025.1558242

10. M.D. Corrêa, M. Rivas, E. Rojas, S. Madronich, D. Laroze, L.M. Pérez, J.C. Fuentes, G. Torres. Comparing the ultraviolet index at sea level and altitude in six Chilean locations. Revista Brasileira de Geografia Física 18, 1714-1723 (2025). https://doi.org/10.26848/rbgf.v18.3.p1714-1723

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11. T. Maranna, G.M. Sachin, U.S. Mahabaleshwar, **L.M. Pérez**, I.V. Shevchuk. *Impact of Navier's Slip and MHD on a Hybrid Nanofluid Flow over a Porous Stretching/Shrinking Sheet with Heat Transfer*. Fluids **9**, 180 (2024). https://doi.org/10.3390/fluids9080180

12. K.M. Nihaal, U.S. Mahabaleshwar, **L.M. Pérez**, P. Cattani. *An Impact of Induced Magnetic and Cattaneo-Christov Heat Flux Model on Nanofluid Flow across a Stretching Sheet*. Journal of Applied and Computational Mechanics **10**, 455 (2024). https://doi.org/10.22055/jacm.2024.45421.4365

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13. H. Akram, M. Abdullah, E. Feddi, A. Al-Khursan, **L.M. Pérez**, M. Kria, *Applications of Hybrid Metal Nanoparticle-Quantum Dot in Biomedical Applications.* University of Thi-Qar Journal of Science **10**, 61 (2023). https://doi.org/10.32792/utq/utjsci/v10i1.929

14. U.S. Mahabaleshwar, T. Maranna, **L.M. Pérez**, G.V. Bognár, H.F. Oztop. *An impact of radiation on laminar flow of dusty ternary nanofluid over porous stretching/shrinking sheet with mass transpiration*. Results in Engineering **18**, 101227 (2023). https://doi.org/10.1016/j.rineng.2023.101227

15. M.I. Kopp, U.S. Mahabaleshwar, **L.M. Pérez**. *Exact solutions of the MHD three-dimensional Casson flow of a ternary hybrid nanofluid over a porous stretching/shrinking surface with mass transpiration*. Journal of Physical Studies **27**, 2402 (2023). https://doi.org/10.30970/jps.27.2402

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16. V. Mughnetsyan, A. Manaselyan, M. Barseghyan, A. Kirakosyan, **L.M. Pérez,** D. Laroze. *Electronic and Magnetic Properties of Laser Dressed Quantum Dot and Ring with Rashba Spin-Orbit Coupling. In: D. Blaschke, D. Firsov, A. Papoyan, H.A. Sarkisyan (Eds). Optics and Its Applications.* Springer Proceedings in Physics **281**, 145 (2022). https://doi.org/10.1007/978-3-031-11287-4_12

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17. D. Urzagasti, D. Becerra-Alonso, **L.M. Pérez**, H.L. Mancini, D. Laroze. *Hyper-Chaotic and chaotic synchronisation of two interacting dipoles*. Springer Proceedings in Physics **173**, 261 (2016). http://dx.doi.org/10.1007/978-3-319-24871-4_20

5.3 Otras publicaciones internacionales [10]

1. **L.M. Pérez**, M.E. Fernandez, J.E. Diosa, R.A. Vargas. *Effect of Dispersed Al2O3 on the Phase Transitions and Ionic Conductivity of KH_2PO_4*. Revista Colombiana de Física **37**, 1 (2005).

2. **L.M. Pérez**, D. Laroze, P. Vargas, D. Altbir, M. Vázquez. *Magnetic properties of Ni nanowires*. 6º Congreso Binacional de Metalurgia y Materiales CONAMET/SAM 2006, Actas, Santiago, Chile (2006).

3. D. Laroze, J. Martinez-Mardones, **L.M. Pérez**, H. Pleiner *Stationary thermal convection in viscoelastic ferrofluiud*, Proceedings of the IX International Thermo-diffusion Meeting.

4. H. Pleiner, J. Martinez-Mardones, **L.M. Pérez**, D. Laroze. *Convective instabilities in a ferrofluid with a viscoelastic carrier fluid*. Bulletin of the American Physical Society 55. (2010)

5. D. Laroze, **L.M. Pérez**, J. Bragard, J. Martinez-Mardones, E.G. Cordaro, H. Pleiner, *Thermal convection thresholds in a viscoelastic ferrofluid*. International Conference on Fluid Dynamics and its Application Proceeding Book. (2011).

6. D. Laroze, J. Bragard, **L.M. Pérez**, J. Martinez-Mardones, H. Pleiner. *Thermal Convection in Viscoelastic Magnetic Fluids*. Euromech Colloquium 526 "Patterns in Soft Magnetic Matter", Book of Abstracts, p. 27, Dresden, Germany (2011).

7. **L.M. Pérez**, J. Bragard, D. Laroze, J. Martinez-Mardones, H. Pleiner. *Thermal Convective Instabilities in a Magnetic Viscoelastic Fluid*. BIFD 2011 – 4th International Symposium on Bifurcations and Instabilities in Fluid Dynamics, Barcelona, Spain (2011).

8. K. Lakaal, E. Feddi, **L.M. Pérez**. *Influence of Hole-Phonon Coupling on Thermodynamic and Magnetic Properties of Diluted Semiconductor: Ga1-xMnxAs in Quantum Dots*. Proceedings of the 4th International Online Conference on Nanomaterials, (2023).

9. J. El Hamdaoui, **L.M. Pérez**, E.M. Feddi. *Tuning the Electronic Properties of Janus GeSnS2 Monolayers through Strain and Electric Field*. Materials Proceedings 14, 59 (2023). https://doi.org/10.3390/iocn2023-14483

10. I.E. Alvial, H.A. Benítez, C.R. González, D. Véliz, **L.M. Pérez**. *Wing Size Reduction in Rapa Nui Insects: A Biogeographic Pattern?* Preprint, SSRN 5137303 (2025). https://doi.org/10.2139/ssrn.5137303

5.4 Corrigendum [3]

1. E. Saavedra, H. Vigo-Cotrina, M. Al Bahri, **L.M. Pérez**, F. Tejo. *Corrigendum to "Angular dependence of stress-induced spin-wave dynamics in antivortices stabilized in square FeGa nanodots".* Journal of Magnetism and Magnetic Materials **655**, 174280 (2026).
   https://doi.org/10.1016/j.jmmm.2026.174280
   [WOS information: Q3, IF: 3.0]

2. U.S. Mahabaleshwar, G.P. Vanitha, **L.M. Pérez**, E.H. Aly, I. Pop. *Corrigendum to "Exact solutions for magnetohydrodynamic nanofluids flow and heat transfer over a permeable axisymmetric radially stretching/shrinking sheet"*. Chinese Physics B **35**, 089902 (2026).
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3. U.S. Mahabaleshwar, K.N. Sneha, **L.M. Pérez**, O. Manca. *Corrigendum to "An unsteady flow through porous media leads to a Newtonian fluid presence of CNTS and suction/injection"*. International Communications in Heat and Mass Transfer **146**, 106926 (2023).
   https://doi.org/10.1016/j.icheatmasstransfer.2023.106926
   [WOS information: Q1, IF: 6.2]

5.5 Tesis [3]

1. **L.M. Pérez**, "*Estudio de las propiedades térmicas y eléctricas de KH_2PO_4*" Tesis de pregrado, Universidad del Valle, Colombia. 2003.

2. **L.M. Pérez**, "*Dinámica de un dímero magnético*". "Tesina", Universidad de Navarra, España. 2014.
   http://dadun.unav.edu/handle/10171/36978

3. **L.M. Pérez**, "*Caracterización del caos e hipercaos en sistemas magnéticos clásicos*". Tesis de Doctorado, Universidad de Navarra, España. 2016.
   http://hdl.handle.net/10171/42923

6. Proyectos de Investigación y Centros de Investigación

1. 2026–2030: Coinvestigadora, Proyecto Fondecyt 11260401. Revealing complexity in viscoelastic ferrofluid convection. Chile.
2. 2025–2030: Investigadora Principal, Proyecto Basal ANID CIA250002. Centro de Nanociencia y Nanotecnología (**CEDENNA**). Chile.
3. 2025: Investigadora Principal. Proyecto UTA Libros 2025.
4. 2024–2028: Investigadora Principal, Proyecto FONDECYT 1240985. *Study on the incorporation of nanostructures on kesterite, Sn(S, Se), and $Sb_2(S, Se)_3$ solar cells to promote current efficiency values*. Chile.
5. 2023- 2027: Coinvestigadora. Proyecto FONDECYT 1231020, "*Localized structures and extended waves in ultracold binary fermionic gas systems with Zeeman splitting and spin-orbit coupling*"
6. 2022-2024: Investigadora Principal. Proyecto UTA MAYOR 2022, "*Estudio sobre la complejidad en la convección de fluidos viscoelásticos*"
7. 2021-2023: Investigadora Principal. Proyecto Instalación en la Academia SA77210040 ANID, "*Fortalecimiento de la física computacional en la Universidad de Tarapacá*"
8. 2018-2022: Coinvestigadora. Proyecto FONDECYT 1180905, "*Characterization of chaotic states in parametrically driven dissipative systems*".
9. 2006-2008: Investigadora Asistente Joven. Proyecto ANILLO-CONICYT ACT 24, "*Laboratorio de simulación computacional de nano materiales y sistemas biológicos de interés experimental*".

7. Dirección de Estudios de Postgrado

1. MSc. Claudelle Madjuogang. Master of Science in Mathematics. AIMS-Cameroon. Thesis: *Computational Issues and Preliminary Insights on the Use of Quantum Dots as Biosensors*. [Co-Advisor, 2022]

2. MSc. Sr. Wilson Marín. Magíster en Ciencias con Mención en Física. Universidad de Tarapacá. Tesis titulada: Caracterización *de estados caóticos y periódicos en el modelo de convección para materia activa*. [Directora, 2025]

8. Docencia

8.1 Profesora de Cátedra

1. Introducción a la Física (Nivel pregrado S1 2022, S2 2022, S1 2023) [Universidad de Tarapacá]
2. Introducción a la Mecánica (Nivel pregrado S1 2019) [Universidad de Tarapacá]
3. Mecánica Newtoniana (Nivel pregrado S2 2019) [Universidad de Tarapacá]
4. Electricidad, Magnetismo y Ondas (Plan común de las carreras de ingeniería, S2 2018) [Universidad Yachay Tech, Ecuador]
5. Introducción a la Ingeniería (Plan común de las carreras de ingeniería, S2 2018) [Universidad Yachay Tech, Ecuador]
6. Seminario de Investigación (Nivel pregrado S1 2018) [Universidad Yachay Tech, Ecuador]
7. Seminario de Investigación (Nivel pregrado S1 2025, S2 2025) [Universidad de Tarapacá].
8. Investigación Operativa (Nivel pregrado, S2 2025) [Universidad de Tarapacá]
9. Investigación Operativa (Nivel pregrado, S1 2026) [Universidad de Tarapacá]
10. Investigación Operativa (Nivel pregrado, S2 2026) [Universidad de Tarapacá]
11. Modelos estocásticos (Nivel pregrado, S2 2026) [Universidad de Tarapacá]

8.2 Profesora Asistente (2000-2002)

1. Física General: Mecánica. (Nivel de pregrado, Universidad del Valle, Colombia)

8.3 Profesora de Colegio (en Colombia)

1. Décimo Grado: Física
2. Décimo Grado: Matemáticas.
3. Undécimo Grado: Física.
4. Undécimo Grado: Matemáticas.

9. Presentaciones en Conferencias y Congresos

- Múltiples presentaciones tanto orales como posters, así como participaciones por otros coautores, en Conferencias, Congresos y en Instituciones Académicas en: Chile, Colombia, España, Finlandia, Rusia, Alemania, Francia, Marruecos, USA, Turquía, Uruguay, e Italia.
- Charlista invitada en la conferencia "*Instabilities and Nonequilibrium Structures*" (2025 & 2023) y en el Simposio Chileno de Física XXIII [SOCHIFI] (2022).

10. Actividades Profesionales

10.1 Comisiones Nacionales

1. Coordinación del Convenio Marco de Colaboración para la Creación del Laboratorio Nacional de Supercómputo.
2. Proyecto Ciencia 2030, Objetivo 3: Liderazgo Femenino (2023)
3. Grupo de Evaluación "Física Teórica y Experimental" ANID FONDECYT (2024, 2025)

10.2 Comisiones y Profesora de Claustro en Postgrados en Universidad de Tarapacá

1. Comisión de Articulación entre el Magíster en Ciencias con Mención en Física y la Pedagogía en Física y Matemática.
2. Coordinación de Investigación de la Facultad de Ciencias.

3. Comisión rediseño curricular de la carrera de pedagogía en Física y Matemática.
4. Comisión rediseño curricular de la carrera de Ingeniería Civil Industrial.
5. Profesora de Claustro del Magíster en Física.
6. Profesora de Claustro del Doctorado en Física.
7. Profesora de Claustro del Doctorado en Química (Empieza 2026).
8. Profesora de Claustro del Doctorado en Ingeniería (Empieza 2026).

10.3 Organización de Congresos

1. Mini Workshop on Computational Physics, 26 November 2022. Universidad de Tarapacá, Arica.
2. Second Mini Workshop on Computational Physics, 3 August 2024. Universidad de Tarapacá, Arica.

11. Vinculación con el Medio

2017: Programa "Experimentos de ciencias en la escuela básica" Para escuelas en el primer grado en Arica, Chile.

Descripción: Cada semestre académico realizamos experimentos sencillos relacionados a las ciencias naturales en el primer grado de las escuelas. La idea principal es que los niños interactúen con la ciencia, en efecto muchas de las demostraciones son realizadas por ellos mismos. La frecuencia es un experimento por semana en el primer grado de la escuela "Escuela básica Jorge Alessandri" (Educación pública). Además se desarrolló un método para enseñar a programar al mismo grado. En este aspecto se enfocó el segundo semestre de 2017.

12. Premios

- Mejor Graduada, Generación 2003, Universidad del Valle.
- Becas en Chile: USACH Beca de Posgrado (2005 –2008).

13. Cursos formales y certificados de idiomas

1. Inglés: Curso en la Universidad de Santiago de Chile, Chile. Tres Semestres. Nivel Básico e Intermedio Básico (A1 – B2).
2. Alemán: Curso en VHS-Wiesbaden, Alemania. Cursos Intensivos, Nivel Básico e Intermedio (A1 – B1).
3. Alemán: Curso en VHS-Mainz, Alemania. Nivel Intermedio (B1 – B2).
4. Certificado Alemán ZD telc Deutsch B1.