



Postdoctoral Grant Application

Candidate: The Institute of Physics at Pontificia Universidad Católica de Chile (1st in QS Latin American and 132 in QS World University Rankings) seeks for highly motivated and talented theoretical and experimental physicists interested in applying for the Postdoctoral Research Associate Grant (FONDECYT Postdoctoral 2019, <http://www.conicyt.cl/fondecyt/category/concursos/postdoctorado/>), opening in July 2018. **The competition is addressed to researchers who have earned their doctoral degree as of January 1, 2015 or later.**

Interested applicants should have the ability to work in a multicultural setting and be part of an interdisciplinary team. Intermediate or advanced knowledge of Spanish language is desirable but not essential. Candidates are expected to write peer-reviewed journal articles, present at meetings, and participate in proposal writing.

Grant: The grant will cover salary for approximately USD 30,400 per year (amount for 2018 call), travel and/or operational expenses for USD 6,700, and health insurance for USD 670 per year. It also considers funding of around USD 4,400 to settle in Chile for scientists residing abroad at the time the call results are communicated.

Proposal sponsor: a local faculty at our University must sponsor the proposal. The following Research Lines are looking for a PostDoc:

Area	Topic	Faculty
High Energy Physics, Classical and Quantum Gravity	Dark matter and Cherenkov Telescope Array (CTA)	Benjamin Koch (bkoch@fis.puc.cl)
	Asymptotic safety and scale dependent gravity	
	Prospects for electron-positron measurements associated to CLIC Experiment.	Marco Aurelio Díaz (mad@susy.fis.puc.cl)
	Physics beyond the Standard Model, Cosmology, Astroparticle Physics, Lorentz invariance violation and Cherenkov Telescope Array	Jorge Alfaro (jalvaro@fis.puc.cl)
	Quantum Field Theory, Quantum Chromodynamics at extreme conditions	Marcelo Loewe (mloewe@fis.puc.cl)
	Quantum Field Theory applications to graphene and related materials, Effective Lagrangians, Phase Transitions	
Materials Sciences, Nanotechnology	Fabrication and Characterization of Paper-Based Solar Cells	Loik Gence (loik.gence@fis.puc.cl)
	Organic Memristors for low-cost and Environment Friendly Memory Devices	
Medical Physics	Dosimetry for small and non-standard RT beams	Paola Caprile (pcaprile@fis.puc.cl)
	Clinical outcome evaluation based on feature analysis	
	Peripheral dose modelling	Beatriz Sanchez (bsanchez@fis.puc.cl)
	Mechanistic models for radiation induced cancer	
Experimental Plasma Physics	High energy density physics using wire array Z-pinch plasmas	Felipe Veloso (fveloso@fis.puc.cl)
	Characterization of laser produced plasmas	Mario Favre (mfavre@fis.puc.cl)
	Pulsed laser deposition	
	Dual radio frequency and hybrid dual radio frequency-LASER plasma and its applications in material science and biomedicine	Heman Bhuyan (hbhuyan@fis.puc.cl)

Condensed Matter Physics - Theory	Ultra cold atoms in AC driven optical lattices	Luis Molina (lmolina@fis.puc.cl)
	Non-equilibrium thermodynamics of mixtures of Bose-Einstein condensates.	
	Study of quantum correlations in mixtures of condensates	
	Ab-initio calculations of magnetic nanostructures (clusters, nanowires and nanotubes)	Jose Mejia (jmejia@fis.puc.cl)
	Monte Carlo simulations of magnetic properties in nanostructured systems.	
	Molecular dynamics for defects in nanomaterials	
	Linear and non-linear phenomena in complex systems	Edward Arevalo (earevalo@fis.puc.cl)
	Novel phenomena in discrete systems with non-trivial band structure topology	
	Magnetization dynamics Exchange Bias and Interface Magnetism Spintronics	Roberto Rodriguez (rrodriguez@fis.uc.cl)
	Topological effects in condensed matter	Giuseppe De Nittis (gidenittis@mat.uc.cl)
	Spectral and dynamical properties of disordered and quasi-periodic systems	
	Electronic and thermal transport in strongly correlated electron systems	Enrique Muñoz (munozt@fis.puc.cl)
	Quantum field theory in condensed matter and topological materials	
Condensed Matter Physics - Experiment	Correlations between microstructure and thermal stresses in nanocrystalline coatings grown by vapor deposition techniques	Esteban Ramos (evramos@uc.cl)
	Effects of surface texturing of metallic substrates on biofilm formation and microbial induced corrosion	
	Functionalization of carbon-based electrodes for sodium-ion batteries	
	Artificial membranes deposited from the vapor phase for nanosensor applications.	Ulrich Volkmann (Volkmann@fis.puc.cl)
	Porous materials for hydration of molecules at the nanobio interface	
	Wettability of surfaces suited for photon induced hydrogen generation	
	Experimental studies of Solid Surfaces using Electron Spectroscopy	Alejandro Cabrera (acabrera@fis.puc.cl)
	Materials for Lithium-Ion Battery	Samuel Hevia (Samuel.hevia@fis.puc.cl)
	Solar Hydrogen Production by Photoelectrochemical Water Splitting	
	Development of Sensors by using Nanomaterials	
Quantum Optics	Generation and characterization of ultrafast optical vortices	Birger Seifert (bseifert@fis.puc.cl)
	Development of novel ultrafast pulse measurement techniques	
	Quantum metrology, magnetism and spintronics with nitrogen-vacancy centers in diamond	Jeronimo Maze (jmaze@fis.puc.cl)

Interested applicants should send to **the corresponding Faculty**:

- a) Copy of the Doctoral Degree
- b) CV
- c) Cover letter

If your research interest does not fit any of the above research areas, please contact us to look for opportunities with other faculty members.

Questions on immigration issues should be directed to Karina Charris (lecharris@uc.cl) by July 20th, 2018