



# Dr. rer. nat. Carlos A. Reinoso-Jerez

## Curriculum Vitae

29 September 1979

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## Professional profile.

I am a physicist with great interest in both new materials and applied subjects in electronics. I have been focused over the past years on scientific research driven by my PhD studies, which had brought me to interact with key players in the nanotechnology development in Austria. I have developed important interest and skills in the field of nanotechnology and in particular for the functioning of sensors based on carbon materials. Although my career has been mostly linked to academia, I have great interest in entrepreneurship. This has brought me to be involved in projects related type the development of industrial initiatives during my last years as undergraduate student in Physics and later during my master studies in the field of telecommunications developing wireless sensors and proposals related with the efficient use of the energy. I was part of the young entrepreneur leaders of the Junior Chamber International in my home city to taking action and creating good impact in our communities for I continue to follow their activities.

## Education

### 2013-2018 Doctorate (Dr. rer. nat.)

**Universität Wien, Vienna - Austria**

Specialization: Experimental physics and Material science

Thesis title: "Purification, stability and bonding environments on B-doped Singled-walled carbon nanotubes: a study on the electronic and optical properties"

### 2011-2013 Master of Science in Network Communications

**Pontifical Catholic University, Quito - Ecuador**

Specialization: Network Communications, Wireless sensors

Thesis title: Design and construction of a Prototype of a wireless network system for landslides early warning.

### 2002-2007 Physics Laurea

**National Polytechnic School, Quito - Ecuador**

Specialization: Physics

Thesis title: Study and construction of an analytical device for optoacoustic spectroscopy.

## Employment History

### 2016-2017 University of Vienna, Vienna - Austria

Electronic Properties of Materials, Prof. T. Pichler -

Tailored Hybrid Structures, Prof. P. Ayala

Position: Researcher and Doctoral Candidate

### 2011-2013 Army Polytechnic School (ESPE), Quito - Ecuador

Energy and Mechanics Department

Position: Lecturer - 50% time position

Supervisor of Bachelor students.

Participation in international conferences, workshops and seminars.

**2011-2013 Salesian Polytechnic School (UPS), Quito - Ecuador**

Position: Lecturer – 50% time position - Ecuador  
Participation in international conferences, workshops and seminars.

**2009-2011 Army Polytechnic School (ESPE), Latacunga - Ecuador**

Position: Lecturer – Full time position  
Participation in international conferences, workshops and seminars.

**2007-2013 Service Quality Assurance (SQA), Quito - Ecuador**

Position: Consultant on  
Auditor Efficiency Energy use for industries  
Heat transfer improvements designer  
Electricity improvements designer

**2007-2009 Cotopaxi Technical University (UTC), Latacunga - Ecuador**

Lecturer – Full time position - Ecuador  
Supervisor of Bachelor students.  
Tenure track research committee council representative  
Electric Engineering Research group leader.  
Participation in international conferences, workshops and seminars.

## Research experience and stays

**07-08.2015 Visiting Researcher at Tokyo Metropolitan University, Japan**

Training: Gel Chromatography.  
Training: Thermal Gravimetric Analysis  
Training: Nanotubes Film transport to Electrodes.

**01-02.2014 Visiting Researcher at Tokyo Metropolitan University, Japan**

Training: Density Gradient Ultracentrifugation Purification.  
Training: Optical Absorption Spectroscopy.

**01-04.2005 Sumer training at Instituto Nacional de Matemática Pura e Aplicada (IMPA), Brazil**

Theoretical approach: Analyse Real

**05.2005 Statistical Physics School at University of Havana, Cuba**

Statistical Physics projects analysis in Latin America.

**2003-2005 Internship at Oil state company (PETROECUADOR), Ecuador**

Research and Development department, Edward Jimenez PhD.  
Quantum computing, strategic games.  
Stochastic processes

## Teaching Experience

**2016 University of Vienna, Austria**

Lecturer - Seminar: Experimental problems and solutions (2016S) -442605 SE  
Guidance in Master thesis: Mr. Harvey Suarez (2014)  
Guidance in Bachelor thesis: Mr. Thomas Wurm (2015)  
Laboratory practice teacher: Creating nanotubes, Raman spectroscopy, Optical absorption, ultracentrifugation gradient sorting of nanotubes.

**2011-2013 Salesian Polytechnic School, Ecuador**

Lecturer: Modern Physics,  
Lecturer: Dynamics I  
Lecturer: Dynamics II  
Lecturer: Mathematical physics I

**2009-2013 Army Polytechnic School, Ecuador**

Lecturer: Calculus  
Lecturer: Vectorial Calculus  
Lecturer: Modern physics  
Lecturer: Thermodynamics I  
Lecturer: Thermodynamics II  
Lecturer: Electronic Instrumentation  
Lecturer: Introduction to Mechatronics  
Laboratory practice teacher: Mechatronics instrumentation, Kuka robotics, Festo.

**2007-2009 Cotopaxi Technical University, Ecuador**

Lecturer: Algebra,  
Lecturer: Calculus,  
Lecturer: Electronic Instrumentation,  
Lecturer: Physics I,  
Lecturer: Physics II.

## Grants and awards

**2013 PhD Grant**

International Scholarship for doctoral research programs, second call 2012  
Secretaría Nacional de Educación Superior, ciencia y tecnología SENESCYT. (**Ecuador**)

**2011 Trainee grant**

CTP-ITU/BDT School on Sustainable Wireless ICT Solutions for Environmental Monitoring, International Centre for Theoretical Physics Abdus Salam, International Telecommunications Union. (**Italy**)

**2010 Trainee grant**

Climate Change Planning for Developing Countries.  
Ministry of Finance of the People's Republic of China. (**China**)

**2009 Trainee grant**

2nd Awareness Workshop on Relevance of Low Cost Wireless ICT Solutions for Development. International Centre for Theoretical Physics Abdus Salam. (**Italy**)

**2018 Best poster award**

2 Nanotechnology conference, (ESPE) Quito - (**Ecuador**)

## Presence at international conferences.

2018	IWEPNM, Tirol - Austria	2015	NT, Nagoya - Japan
2016	ÖPG, Vienna - Austria	2014	IWEPNM, Tirol - Austria
2016	NT, Vienna - Austria	2012	ICTP, Trieste - Italia
2017	IWEPNM, Tirol - Austria	2011	ICTP, Trieste - Italia
2015	MRS, San Francisco - USA	2010	Climate change, Beijing - China

**Lab Skills**

Automatization and monitoring devices,  
Raman spectroscopy, Optical Absorption Spectroscopy, Photoluminescence spectroscopy  
Techniques density gradient ultracentrifugation, gel chromatography sorting,  
High vacuum systems,  
Synthesis of 1D and 2D materials, Purification methods for nanomaterials.  
Samples preparation for TEM, SEM, AFM, XPS.

**Computing skills and specialized software**

OS Linux, Windows, Mac.  
Microsoft Office, Adobe Illustrator, Photoshop

Latex editor, Origin Labs, OPUS and Peakfit.  
Basic Knowledge in C++, Labview, Matlab, Android Apps, Blender.

## Languages

Spanish (mother tongue)  
English (full professional proficiency)  
German (spoken B1, written A2)  
Portuguese (spoken A1, written A1)

## Publications

- Very high boron-doping on single-walled carbon nanotubes from a solid precursor. (*accepted Carbon, 2018*)
- *Stability of substitutional B in single-walled carbon nanotubes. (submitted to ACS Omega 2018)*
- One step fabrication of BCN single-walled nanotubes from a solid precursor. (*to be submitted, 2018*)
- BOOK-Prototipo de sensores inalámbricos para alerta temprana de deslaves. Editorial Académica Española, ISBN-10: 6202239158, 25.10.2017.
- Prototype of Wireless Sensor System for Early Landslide Alert. SATHIRI No 11, CITT - UPEC, LATINDEX 21955, 12.11.2016.
- Study and construction of an analytical device for optoacoustic spectroscopy, Revista Politécnica N 11., 01.12.2007.