Oscar Ruiz Cigarrillo

PhD. Candidate in Applied Sciences

July 13th 1993

San Luis Potosí, México

+52 4442384382

https://github.com/RUCO13

https://wakatime.com/@RUCO13

ruizoscar.1393@gmail.com

Skills

Linux, MacOs, Windows

DFT packages

Python

Fortran

LaTeX

C++

Julia

C

Mathematica

MATLAB

Languages

English

Spanish

Education

2017-2021 PhD candidate in Applied Science (Photonics)
Universidad Autónoma de San Luis Potosí, México
"Optical anisotropy study in coupled quantum wells, a novel source of undisturbed systems"

2015-2017 Master degree in Applied Science (Photonics)
Universidad Autónoma de San Luis Potosí, México
"Growth and Characterization of Semiconductor Optical Microcavities"

2011-2015 Bachelor degree in physics engineering
Universidad Autónoma de San Luis Potosí, México
Grade: 9.2/10

Publications

2017 "Optical detection of graphene nanoribbons synthesized on stepped SiC surfaces"
L.F. Lastras-Martínez, J. Almendarez-Rodríguez, G. Flores-Rangel, N.A. Ulloa-Castillo, O. Ruiz-Cigarrillo, C.A. Ibarra-Becerra , R. Castro-García, R.E. Balderas-Navarro, M.H. Oliveira Jr and J.M.J Lopes, *Journal of Applied Physics* 122(3), 035701, (2017)

2017 "Microscopic optical anisotropy of exciton-polaritons in a GaAs-based semiconductor microcavity"
L.F. Lastras-Martínez, E. Cerda-Méndez, N.A. Ulloa-Castillo,R. Herrera-Jasso, L. E. Rodríguez-Tapia, O. Ruiz-Cigarrillo, R. Castro-García, K. Biermann, P. V. Santos. *Physical Review B*, 2017, vol. 96, no 23, p. 235306

2019 "Differential reflectance contrast technique in near field limit: Application to graphene"
L.F. Lastras-Martínez, D. Medina-Escobedo, G. Flores-Rangel, R.E. Balderas-Navarro, O. Ruiz-Cigarrillo, R. Castro-García, M. del P. Morales-Morelos, J. Ortega-Gallegos, M. Losurdo. *AIP Advances*, 2019, vol. 9, no 4, p. 045309

2021 "Optical contrast in the near-field limit for structural characterization of graphene nanoribbons"
G. Flores-Rangel, L.F. Lastras-Martínez, R. Castro-García, O. Ruiz-Cigarrillo, R.E. Balderas-Navarro, L.D.Espinosa-Cuellar A.Lastras-Martínez, J.M.J.Lopes. *AIP Advances*, Volume 536, 15 January 2021, 147710

2021 "Optical anisotropies of asymmetric double GaAs (001) quantum wells"
O. Ruiz-Cigarrillo, L. F. Lastras-Martínez, E. A. Cerda-Méndez, et al. *Physical Review B*, 2021, vol. 103, no 3, p. 035309.

2022 'Photoluminescence of double quantum wells: asymmetry and excitation laser wavelength effects"
C. A. Bravo-Velázquez,L. F. Lastras-MartínezO. Ruiz-Cigarrillo, et al. *physica status solidi (b)*, 2022, vol. 259, issue 4.

Awards

2017 Third place, Research level in the poster competition Teaching and Research 2017 "Fis. Candelario Pérez Rosales", XVII Week

2018 Third place, Research level in the poster competition Teaching and Research 2018 "Fis. Candelario Perez Rosales", XVIII Semana.

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C++

Julia

C

Mathematica

MATLAB

Languages

English

Spanish

Experience

2017 — Complex Variable, Electromagnetism
UASLP
Assistant Professor

2017 — Creating and Editing Scientific Documents in LaTeX: Basic Course
Complex Variable, Electromagnetism — UASLP
Course

2017 — Physics
Secondary level
Professor

2019-present — Calculus (Difference and Integral), Physics I, Physics II, Probability and Statistics, Mathematics I (Algebra), Mathematics III (Analytic Geometry)
High School level
Professor

2019-present — Programming,Numerical Methods, Operating Systems, Calculus (Differential and Integral), Physics I, Physics II, Probability and Statistics, Advanced Algebra
University level
Professor

Participation National Conferences

2016 — National Physics Congress
Growth and Characterization of Optical Microcavities of (Al,Ga)As.
Poster

2017 — X Annual Meeting of the Quantum Information Division
Advances in III-V microcavity growth for solid-state quantum condensates
Poster

2017 — National Physics Congress
In-situ and real-time optical growth and characterization of (Al,Ga)As microcavities.
National Physics Congress
Talk

2018 — Solid State Division Annual Meeting
Detection of Indirect Excitons in Coupled Quantum Wells Using Photoreflectance
Talk

2019 — Solid State Division Annual Meeting
Study of Indirect Excitons and Trions in coupled asymmetric quantum wells
Poster

Interests

My main interest is learning physics. In my PhD project I focused on the development of experimental solid state physics specifically in the field of optical spectroscopy and decided to take it in hand with computational physics, developing my own codes and learning from existing codes. I consider numerical calculations in experimental physics are a powerful tool to understand the complexity in solid state and condensed matter physics. I consider myself an enthusiast of open-source code and software, and I am very committed to teaching my knowledge about it.