

MANUEL ALEJANDRO JUSTO GUERRERO

EDUCATION

PhD candidate (January 2019 – January 2023)

“Development of applications in the terahertz frequencies range”

Advisor: Elodie Strupiechonski, Ph.D

Cinvestav, Unidad Querétaro, Querétaro. México.

Masters Degree in materials science (2016-2018)

“Modelization of sub-wavelength antennas for application in terahertz photodetectors”

Advisor: Elodie Strupiechonski, Ph.D

Cinvestav. Unidad Querétaro, Querétaro, México.

Bachelor’s Degree in Mechanical Engineering (2009-2014)

División de Ingenierías del Campus Irapuato-Salamanca.

Universidad de Guanajuato, Salamanca, México.

RESEARCH EXPERIENCE

- Design and modeling of metallic sub-wavelength resonators for terahertz applications.
- Microfabrication and characterization, of metallic resonators and electronic devices on GaN-AlGaN heterostructures.
- Detection and study of the spectral response of hazardous herbicides through FTIR-ATR spectroscopy in the terahertz range.
- Room temperature hyperspectral imaging at terahertz frequencies.
- Study of spectral signatures of high absorbant liquids into the terahertz regime.

Publications

M. Ortiz-Martinez, A. I. Hernandez-Serrano, M. A. Justo Guerrero, E. Strupiechonski, and E. Castro-Camus, "Logic gates for terahertz frequencies fabricated by three-dimensional printing," J. Opt. Soc. Am. B 37, 3660-3664 (2020)

TEACHING EXPERIENCE

Teacher, Universidad del Valle de México (January 2019 –)

Professor of basic science topics (physics, mathematics, chemistry) and specialized topics in mechanical engineering.

Soft skills

- Problem solving
- Creativity
- Initiative
- Adaptability
- Teamwork
- Reliability

Contacts for recommendation

PhD candidate in materials science:

- Experience in modeling, design and microfabrication of metallic resonators in clean room.
- Experience in finite element method computational simulations.
- Experience in spectroscopy analysis and hyperspectral imaging in the terahertz range.

Software skills

Office	90%
Matlab	70%
Comsol	70%
Solidworks	80%
TEAMS	90%
Zoom	90%
Minitab	50%

CONTACT

Hobbies



TRAININGS

Recommendations for a safe return to work (Covid-19) (2020)

IMSS (on-line)

Microsoft TEAMS (2020)

UVM (on-line)

Prevention of sexual harassment and proper behavior as a teacher (2019)

LAUREATE (on-line)

EC0325 “Installation of Solar Thermosyphonic Water Heating System in sustainable housing” (2015)

RENOMEX, Center for Evaluation and Training in Renewable Energies
Guanajuato, Gto. México.

Design and installation of piston flow type Biodigesters(2014)

Salamanca, Gto. México

Simulation and design course for solar installations (2014)

Guanajuato Misión Hotel, Gto. México.

Modeling Course at SOLID WORKS (2011)

DiCIS

University of Guanajuato, Salamanca, Gto. México.

Lathe driving (2011)

Programming and machining in CNC, CAD/CAM(2010)

SPEAKER AT SEMINARS, CONGRESSES OR ACADEMIC MEETINGS

XV International Conference on Surfaces, Materials and Vacuum (09/2022)

Analytical model for the spectral interpretation of attenuated total reflection data from lossy samples: application to bulk and thin-film water at terahertz frequencies.

Pto Vallarta, México.

IONS-OPUMA 2020 (06/2020)

Strategical Design of Sub-wavelength Metallic Resonators for Room Temperature Terahertz Applications.

Online congress.

International Quantum workshop 2019 (07/2019)

Sub-wavelength Metallic Resonators for Terahertz Applications. A simple model for rapid performance optimization.
Querétaro, Qro. México.

20th Summer of Scientific Research (06/2014)

Project: “Study of heat transfer in cryogenic systems to store hydrogen”.

University of Guanajuato Campus Celaya
Celaya, Gto. México.

Attendance at the XX SOMIM Annual International Congress (10/2014)

UNAM Juriquilla

Queretaro, Qro. México

19th Summer of Scientific Research (06/2013)

Project: “Mechanical characterization of specimens of materials reinforced with carbon fiber”.

University of Guanajuato Campus Guanajuato,
Guanajuato, México.