ANDRES GAMA

SUMMARY

Experienced Research and Development (R&D) Engineer with a demonstrated history of data analysis, data collection, data management, and laboratory testing. Skilled in Process Failure Mode and Effect Analysis (PFMEA), Statistical Process Control and Control Process (SPC&CP), Quality Collaboration by Design (QCBD), Microsoft Excel, Structured Query Language (SQL), Python.

WORK EXPERIENCE

APRIL 2023 – PRESENT

RESEARCH AND DEVELOPMENT ENGINEER

- Desiccant absorption and desorption modeling by executing experimental testing documentation and reporting.
- Research methodology into optical verification of meter reflectors placement while collaborating with Advanced Manufacturing Engineering (AME).
- Support water moisture ingress/egress plastic research by executing experimental testing documentation and reporting.
- Data analysis with respect to metrics and reports.

MAY 2022 – APRIL 2023

QUALITY ENGINEER

- Worked closely with the quality team to successfully guide advanced quality planning for processes/products, procedure development, and developing/systemizing actionable management information.
- Assisted in defining test plans and production implementations.
- Contributed elements of advanced quality planning (PFMEA, control plans,etc.)
- Data analysis with respect to metrics and reports.

EDUCATION

SEPTEMBER 2020 - DECEMBER 2021

M.S. MATERIALS SCIENCE AND ENGINEERING: NANOMATERIALS & NANOENGINEERING UNIVERSITY OF WISCONSIN – MADISON

- Designed and developed Chemical Vapor Deposition (CVD) chamber.
- Graphene growth on Copper (Cu); Method: (CVD).
- Graphene growth on Strontium Titanate ($SrTiO_3$) (Attempted); Method: (CVD).
- Atomic Surface Analysis; Scanning Electron Microscope (SEM) Zeiss/LEO 1530-1.
- Teacher's Assistant for undergraduate course (MSE 350: Intro to Materials Science).

SEPTEMBER 2014 – DECEMBER 2019

B.S. PHYSICS AND APPLIED MATHEMATICS UNIVERSITY OF WISCONSIN - PARKSIDE

- Data collection and analysis of Exchange-Correlation Functional Comparison of Atomic Total Energies.
- Vice President of Physics Club (Fall 2019).
- President of Stargazers at UW-Parkside (2017-2018).
- Member of Student Council Advisory of College of Natural and Health Sciences (2016-2019).

SKILLS

- MS Excel
- MS Word
- MS PowerPoint
- Python Programming
- Schematics design
- Data collection
- Data analysis
- Minitab
- Process Failure Mode and Effect Analysis (PFMEA)
- Solvent Welding
- Chemical Vapor Deposition (CVD)
- Scanning Electron Microscopy (SEM)
- Graphene growth
- Pipe Fitting/Cutting
- Corrosive materials handling
- Quality Collaboration by Design (QCBD)
- Statistical Process Control and Control Process (SPC&CP)

LANGUAGES

- English: Native Language
- Spanish: Native Language

Curriculum Vitae

Andres Gama

EDUCATION

SEPTEMBER 2020 - DECEMBER 2021

M.S. MATERIALS SCIENCE AND ENGINEERING: NANOMATERIALS & NANOENGINEERING UNIVERSITY OF WISCONSIN – MADISON

- Designed and developed Chemical Vapor Deposition (CVD) chamber.
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RESEARCH EXPERIENCE

Undergraduate, September 2019 - December 2019

UNIVERSITY OF WISCONSIN - PARKSIDE

Exchange-Correlation Functional Comparison of Atomic Total Energies

- Investigated the electronic structure and total atomic energies in condensed phases of matter.
- Utilized programming language Python for data collection and analysis of computational quantum mechanical modeling.
- Field of Focus: Condensed-Matter Physics.
- Methods: Density functional theory (DFT) and Hartree-Fock Theory (HF).

(Principal Investigator: Dr. William Parker)

Graduate, September 2020 - December 2021

UNIVERSITY OF WISCONSIN – MADISON

Chemical Vapor Deposition Chamber, Graphene Growth, and Atomic Analysis

- Drafted schematics of Chemical Vapor Deposition (CVD) chamber.
- Assembled CVD Chamber.
- Furnace: Lindberg/MPH Mini-Mite Tube Furnace
- Fabricated graphene growth on Copper (Cu) surface.
- Manufactured graphene growth on Strontium Titanate ($SrTiO_3$) surface (Attempted).
- Gases employed: Argon (Ar), Argon (90% conc.) Methane (10% conc.) ($ArCH_4$), and Hydrogen (H_2).
- Analyzed atomic surfaces of graphene samples.
- Method: Scanning Electron Microscopy (SEM)
- Instrument Name and Model: SEM Zeiss/LEO 1530-1

(Lab partner: PhD student, Zach LaDuca)
(Principal Investigator: Dr. Jason Ken Kawasaki)

Research and Development Department, April 2023 – Present

MILWAUKEE, WISCONSIN 53223

Desiccant Absorption & Desorption Modeling and Water Moisture Ingress/Egress Plastic Research

- Orion Cellular Pit Tube Product Line
    - Created three batches of testing samples through solvent welding.
    - Two moisture ingress test sample sets.
    - One submergence moisture ingress test sample set.
    - All samples contained a humidity/temperature sensor and a specified amount of silica gel-based desiccant.
    - All testing measurements were documented on an MS Excel spreadsheet.
    - Spreadsheet contained data columns modeling absorption and desorption test results.
    - A theoretical simulation model was created prior to the testing under parameters created by engineering team.
- Battery Cup Production Line
    - Created two batches of testing samples through solvent welding.
    - One moisture ingress testing sample set.
    - One submergence moisture ingress testing sample set.
    - All samples contained a specified amount of silica gel-based desiccant.
    - All testing measurements are being documented on an MS Excel spreadsheet.
    - Spreadsheet contained data columns modeling absorption and desorption test results along with their respective humidity/temperature readings.
    - A theoretical simulation model was created prior to the testing under

parameters created by engineering team.

- ¾” Meter Product Line
    - Created two batches of testing samples through company standard assembly specifications.
    - One moisture ingress testing sample set.
    - One submergence moisture ingress testing sample set.
    - All samples contained a humidity/temperature sensor and a specified amount of silica gel-based desiccant.
    - All testing measurements were documented on an MS Excel spreadsheet.
    - Spreadsheet contained data columns modeling absorption and desorption test results along with their respective humidity/temperature readings.
    - A theoretical simulation model was created prior to the testing under parameters created by engineering team.

- Purpose of Desiccant Absorption & Desorption Modeling and Water Moisture Ingress/Egress Plastic Research:
    - To assist on future product designs with consideration of moisture ingress/egress into our plastic products.

PAPERS

- Exchange-Correlation Functional Comparison of Electronic Energies in Atoms Using a Grid Basis 2022: *Exchange-Correlation Functional Comparison*
- Properties of Solid Surfaces Graduate Course 2021: *Corrosion Prevention on Metals used forHigh Altitude Venus Operational Concept (HAVOC)*
- Nanomaterials & Nanotechnology Graduate Course 2021: *Perovskite Solar Cells*
- Electrodynamics Undergraduate Course 2018: *Electromagnetic Wave Equation*

PRESENTATIONS

- Senior Seminar Undergraduate Presentation 2018: *Many Worlds Interpretation of QuantumMechanics*
- Electrodynamics Undergraduate Course 2018: *Electromagnetic Wave Equation*
- Quantum Mechanics Undergraduate Course 2018: *Many Worlds Interpretation of QuantumMechanics*
- Thermodynamics of Solids Graduate Course 2020: *Climate Change and Thermodynamics:“Does Global Warming Affect Hurricanes?”*
- Properties of Solid Surfaces Graduate Course 2021: *Corrosion Prevention on Metals used forHigh Altitude Venus Operational Concept (HAVOC)*
- Nanomaterials & Nanotechnology Graduate Course 2021: *Perovskite Solar Cells*

PROJECTS

- Visual Inspection Take Along Sheets, Quality Assurance Project, Plastic Injection Molding. May 2022 – March 2023

- Non-Comforting Material Reporting (NCMR), Quality Assurance Project, Small MeterAssembly, May 2022 – April 2023

- Classical Mechanics Undergraduate Course, Python Project 2018: *Central Force Orbits(Non-Inverse-Square-Integer-Powers)*

EDUCATIONAL COURSES

- *SQL*
- *Microsoft Excel for Analytics*

TEACHING EXPERIENCE

Teacher's Assistant (January 2021 – December 2021) *Materials Science & Engineering Course 350: Introduction to Materials Science*

- Recorded grades for coursework and tests in online reporting system.
- Supported instructor with test administration, curriculum development and assignment grading.
- Assessed student assignments to check quality and completeness before submission for grading.
- Reviewed lesson material with students individually or in small groups.

(Instructor: Professor Ahmed Saatchi)

Private tutor (Academic Year 2018)
Guided and mentored a high school student in the following mathematical subjects:

- *Algebra*
- *Geometry*
- *Trigonometry*

Tutored and coached a middle school student in the following mathematical subjects:

- *Arithmetic*
- *Pre-Algebra*

HONOR SOCIETY

American Institute of Physics, *Sigma Pi Sigma*,
Membership since November 2019