Benito Rincon Ramirez

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EDUCATION

Arizona State University **Tempe, AZ**
Mechanical Engineering BSE *Graduation: May 2024*
• Cumulative GPA: 3.61/4.0 • Ira A. Fulton Schools of Engineering Dean's List
Relevant Graduate Coursework: • Battery Materials Science and Engineering • Applied Computational Fluid Dynamics • Analysis and Modeling of Fluid Flows • Partial Differential Equations for Engineers (PDEs) • Semiconductor Packaging

WORK EXPERIENCE & INTERNSHIPS

Arizona State University Graduate Research Assistant **Tempe, AZ**
Graduate Research Assistant (Dr. Candace K. Chan Research Group) *1/2022 - Present*
- Investigating barrier properties of packaging materials for flexible batteries
- Process consists of sealing, bending, electrolyte addition, & testing the seal strength using a tensile tester
- Pouch cells prepared that include cathode/anode & electrical tab to test for electrochemical reaction
- Battery testing analysis including capacity, efficiency, & inputting testing battery procedures

Sandia National Laboratories Internship **Albuquerque, NM**
Technical Undergraduate Intern *5/2023 - 7/2023*
- Photolithography nanofabrication process in clean room & performed research using probe-pump nanoscale methods
- Semiconductor thermal transport analysis & electrical measurement

Rice University NEWT REU **Tempe, AZ**
Research Assistant *6/2021 - 8/2021*
- Researched on water-treatment using an electrochemical process for the removal of nitrite, nitrate, & PFOA
- Experiment on a new reactor & conducted my procedures/ set-up

Phoenix College NASA ASCEND Internship **Phoenix, AZ**
Mechanical Team Member *8/2020 - 05/2021*
- Mechanical aspect of the team where I designed & assembled the internal & external of the project
- Utilized carbon fiber to make payload housing & epoxy to harden the material
- Designed the interior in SolidWorks & 3-D printed the model

TECHNICAL SKILLS

Software: • ANSYS Mechanical • ANSYS Fluent • SolidWorks • MATLAB • Java • Arduino IDE • Autodesk Fusion 360 • Simulink • Word • PowerPoint • Excel
Lab Instruments: • Tensile Tester • Maskless Aligner • Spectrometer • Electrocatalytic Reactors • Bending Machine • Band Sealer • Ion Mill • Temescal Electron Beam Evaporator (Metal Deposition) • Glove Box • Wet Bench • Spin Coat • Frequency-domain Thermoreflectance set- up • Scanning Electron Microscope

RELEVANT EXPERIENCE S & PROJECTS

- **Senior Capstone Project** - Stress simulations in ANSYS. CAD drawings of the product including assembly view & individual part drawings. Utilized electrical components using Arduino kits which included coding & having a controller make the desired movements. Choosing & ordering parts with a given budget. Manufacturing & fabrication was done on mechanical components
- **NASA ASCEND Payload Design Workshop** - Circuit design, control systems programming, sensor integration, & CAD for ballooning applications
- **Gearbox Design Project** - Designed shafts, gears, bearings, keys, & modeled on SolidWorks.
- **Final ANSYS Project** - Stress/strain analysis on a beam & truss using ANSYS Mechanical that included meshing, deflections, & buckling analysis.
- **Computational Fluid Dynamics Projects** - Fluid analysis using Fluent ANSYS of a helix spring heater, pressurized chamber, water tower, fluid mixture, & different complex shape models
- **Mechanical Systems Projects** - Physical experiments on a cooling tower, water pump, air conditioning, & instrumentation systems. Controlled different parameters for point data output. Analyzed data points, used instrumentation to read values, & calculated uncertainty & relevant values. Simulated cooling tower in Simulink.

ACTIVITIES & LEADERSHIP

Society of Hispanic Professional Engineers (SHPE) *Member* *1/2022 - Present*