Alexandra Eve Salinas

Personal Information

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Education

PhD in Mechanical Engineering — **Expected Graduation**: May 2025
Texas A&M University, College Station, TX — Current GPA: 3.5
Bachelor of Science in Mechanical Engineering — May 2021
University of Texas Rio Grande Valley, Edinburg, TX — GPA: 3.94

Employment History

Graduate Assistant for Research, Texas A&M University, College Station, TX **08/2021 – Present**

- Laboratory for Nonequilibrium Phenomena (NEPLab). Development of project proposal through literature reviews and oral presentations during weekly meetings regarding proposal updates.

Graduate Assistant for Teaching, Texas A&M University, College Station, TX **08/2021 – Present**

- Department of Mechanical Engineering. Assisting in teaching undergraduate students about stress/strain relationships within deformable bodies of different materials under multiple loading conditions (i.e. Mechanics of Materials).

Research in Nanotechnology, University of Texas Rio Grande Valley, Edinburg, TX **01/2019 – 08/2021**

- Assisted in the fabrication, characterization, and testing of nanofibers used for multiple applications. Gained experience in working with chemicals and polymers while upholding laboratory safety. For more details, refer to Academic Projects 1, 3, and 4.

Teaching Assistant for Materials Lab, University of Texas Rio Grande Valley, Edinburg, TX **07/2018 - 06/2020**

- Instructed undergraduates of the importance of preparing and testing material samples in accordance with ASTM standards. Familiarized the students in testing procedures and data interpretation.

Academic Projects

1. **Preparation, Characterization, and Application of Internally-Structured Nanofibers** – Adapted through the MRSEC Research Experience for Undergraduates (REU) with the University of Minnesota, this project involved an intensive literature review that could further the study of preparing and characterizing internally-structured nanofibers, as well as tuning those internal structures for various applications. This project obtained results through nanofiber fabrication and characterization. (06/2020 – 08/2021).
2. **Harvest and Collection of Mesquite** – Design and develop a means of harvesting and collecting the bean pods of Honey Mesquite (*Prosopis glandulosa*) Trees. This project required an in-depth knowledge of Mechanical Vibrations, Engineering Materials, Manufacturing Processes, and the biology of the tree itself. This project should expedite the manufacturing process of Mesquite bean products and support the lucrative agrobusiness within Linn, Texas. (01/2020 – 12/2020)
3. **Development and Characterization of Nanofiber-Based Thermoelectric Composites** – Assisted in creating and testing nanofibers in cohesion with conducting polymers. This PREM-approved project obtained meaningful results, such that the nanofibers allowed for output voltage measurements on impact. (08/2019 - 05/2020). Publication Issued: J Appl Polym Sci. 2021; 138:e50665
4. **Portable Handheld Force-Spinning Machine** – Aided in the assembly and testing of a portable handheld machine used for creating nanofibers. This *PREM*-approved project resulted in optimizable data used for nanotechnological and/or biomedical purposes. (01/2019 - 08/2019). Publication Issued 09/2020. Instruments 2020, 4(3), 27; https://doi.org/10.3390/instruments4030027

Skills

- Experience within a laboratory setting and proficiency with literature review.
- Experience with project proposal formulation and technical writing.
- Experience and familiarity with MATLAB, Arduino, SolidWorks, Working Model, and Microsoft Office.
- Experience and familiarity with material testing machines (MTS, DSC, impact testers, hardness testers, etc.).
- Effective communication and presentation with creative problem-solving skills.
- Excellent organizational skills and team management.

Honors, Awards, & Activities

Dr. Dionel Aviles ’53 and Dr. James Johnson ’67 Fellow (2021-2022), Texas A&M University — August 2021
Participation in the *Partnerships for Research in Education in Materials (PREM)* Program — January 2019 – August 2021
HSI Battle of the Brains 2020 Champion Team — October 2020
Benjamin A. Gilman International Scholarship - Scholar — June 2019
UTRGV Scholars Award — August 2017