DAVID GONZÁLEZ NIÑO

Urb. Fair View, Calle 10 N-5; San Juan, PR 00926
Cellphone: **(939) 969-2032**
E-mail: **david.gonzalez8@upr.edu**

Education

University of Puerto Rico, Mayagüez Campus

- **Ph.D. Mechanical Engineering** **August 2017 – May 2021**
  Advisor: Dr. Pedro O. Quintero
- **M.S. Mechanical Engineering (GPA: 3.50** on a 4.00 scale) **August 2014 – May 2017**
- **B.S. Mechanical Engineering** – *Cum Laude* **August 2008 – December 2013**

Capstone – Air Products - Pasadena, TX.

Developed a nitrogen gas generator, capable of producing nitrogen of 96% of purity, with a limited budged**.**

Experience

Research Scientist

Army Research Laboratory (Power Conditioning Branch) **–** Adelphi, MD

Metallic Phase Changing Materials (PCMs) for thermal management in power electronics.

Mentors: Dimeji Ibitayo, Nicholas R. Jankowski and Lauren M. Boteler, Ph.D **June 2017 – December 2017**

- Designed a heater/temperature sensor chip, where the heater acts as the temperature sensor. This design address the challenges that the previous design had. This chip will be used to test the performance of metallic PCM under wide range of power levels and pulse conditions.

Mentors: Dimeji Ibitayo, Nicholas R. Jankowski and Lauren M. Boteler, Ph.D **June 2015 – November 2016**

- Developed a 1-D transient heat model for PCM's, which includes the melting and solidification process. The model was made to study the viability of using metal PCM, due their properties - especially for its thermal conductivity- in pulsed power applications.
- Designed a Resistance Temperature Detector (RTD) embedded in a resistor that was used to study, the performance of different PCMs.

Teaching Assistant

University of Puerto Rico, Mayagüez Campus - Mayagüez, PR **August 2014 – May 2015**

Special Projects' Mechanic Shop

Supervisors: Dr. David Serrano, Dr. Ricky Valentin and Sr. Evaristo Figueroa

- Worked as a projects and shop supervisor, assuring the students' safety and security.

Material Science and Engineering Laboratory

Supervisors: Dr. Paul Sundaram, Dr. Pablo Caceres and Lab. Technician Jessamine Hernandez

- Worked as laboratory instructor, imparting the Material Science and Engineering laboratory course.

Mechanical Engineer Intern

Edwards Lifesciences **–** Añasco, PR **June 2014 – September 2014**

Supervisor: Ing. Carlos Velazquez

- Developed a heat transfer analysis in order to design an R&D fixture to be able to characterize catheters' heat filaments.

Publications

First author

- "Experimental Evaluation of Metallic Phase Change Materials for Thermal Transient Mitigation" *International Journal of Heat and Mass Transfer.* https://doi.org/10.1016/j.ijheatmasstransfer.2017.09.039.
- "Voiding Effects on the Thermal Response of Metallic Phase Change Materials under Pulsed Power Loading". ASME InterPACK17
- "Numerical Evaluation of Multiple Phase Change Materials for Pulsed Electronics Applications." *ASME 2016 Heat Transfer Summer Conference. doi:10.1115/HT2016-7223.*

Co-author

- "High voltage stacked diode package with integrated thermal management" *Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm), 2017 16th IEEE Intersociety Conference. 10.1109/ITHERM.2017.7992583*

Skills

Fluent in reading, speaking, and writing **Spanish** and **English** and basic knowledge in American Sign Language **(ASL).**
Computer Skills: **MATLAB**, **DraftSight, Solid Works, Minitab** and basic knowledge in **ANSYS** and **Python.**