

JONATHAN TORRES

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EDUCATION:

- Ph.D. Mechanical Engineering, Expected 2016, GPA: 3.74
University of Central Florida, Orlando, FL
- M.S. Mechanical Engineering with focus on Mechanical Systems, 2013, GPA: 3.50
University of Central Florida, Orlando, FL
Master's thesis work on "Manufacturing of Single Solid Oxide Fuel Cells."
- B.S. Mechanical Engineering, University Honors, Minor International Engineering, 2011, GPA: 3.44
University of Central Florida, Orlando, FL; Semesters abroad in Spain and Germany.
Senior design project tasked with planning, design, and construction of solar panel array and considerations for expansion to multi-MW field with individual panel monitoring capabilities.

EXPERIENCE:

Intern, SLM

June 2015 – current

Power Systems Manufacturing, Jupiter, FL

Experimental mechanical assessment of proprietary superalloy PSM109 for use with selective laser melting in high temperature turbine applications. Included design and execution of comprehensive test matrix to determine mechanical properties along with analysis of results.

Graduate Research Assistant

Aug 2013 – current

Department of Mechanical and Aerospace Engineering, University of Central Florida, Orlando, FL

Optimization of settings to promote select mechanical properties for components produced using advanced manufacturing techniques such as rapid prototyping (3D printing) via fused deposition modeling using polylactic acid and selective laser melting using Inconel 718 powdered metal.

Graduate Teaching Associate (Instructor of Record)/Assistant

Aug 2013 – current

Department of Mechanical and Aerospace Engineering, University of Central Florida, Orlando, FL

Teaching associate/assistant for solid mechanics and mechanical systems labs. Responsible for grading, developing labs and exams, instructing and interacting with students. Development of course curriculum for mechanical systems lab, combining solid mechanics, vibrations, and feedback into a single cohesive course.

Graduate Research Assistant

June 2011 – July 2013

Department of Mechanical and Aerospace Engineering, University of Central Florida, Orlando, FL

Optimization of multiple manufacturing processes for the production of complete single solid oxide fuel cells based on a layered composite electrolyte followed by electrochemical testing and microscopy.

Research Intern/Contractor

June 2012 – Aug 2012

National Energy Technology Laboratory, U.S. Department of Energy, Morgantown, WV

Development and manufacturing of single solid oxide fuel cells followed by performance testing in a custom single cell test stand to gauge performance and resistance characteristics. Study of microstructure to improve manufacturing processes and performance. Additional testing conducted using liquid metal anode fuel cells.

Mechanical Engineering/Production Planning Intern

May 2010 – July 2010

SIEMENS Fossil Power Generation, Mülheim an der Ruhr, Germany

Worked in manufacturing sector of steam turbines for fossil fuel power generation. Experiences included production planning of work on several turbines with engineers along with hands-on experience assisting technicians throughout every stage of the manufacturing process including machining, assembly, and testing.

SKILLS:

Fluency in English and Spanish.

Computer: Design experience using SolidWorks and Pro/ENGINEER, data analysis with JMP and Quantum XL, MS Office Suite including Word, Excel, Power Point, and Publisher, limited experience with Matlab and MathCAD. Limited video editing.

Technical: Experience with lab equipment including: 3D printing (fused deposition modeling), solid laser melting, tape caster, 3-roll mill, manual and automatic hydraulic press, screen printer, spin coater, high-temperature furnace, hardness testers, and various MTS and Instron load frames. Some experience with the use of mill, lathe, and CNC machine.

PUBLICATIONS AND PRESENTATIONS:

- Jonathan Torres, José Coteló, Justin Karl, and Ali P. Gordon, "Mechanical Property Optimization of FDM PLA in Shear with Multiple Objectives," *JOM*, vol. 67 (5), pp. 1183-1193, 2015.
- Jonathan Torres, Allen Owji, Zachary DeMastry, and Ali P. Gordon. "Oral Presentation: Multi-objective Optimization of the Mechanical Properties of FDM PLA Components." *TMS Annual Meeting & Exhibition*, 2015, Orlando, FL.
- Jonathan Torres, Matthew Cole, Allen Owji, Zachary DeMastry, and Ali P. Gordon. "An Approach for Mechanical Property Optimization of Fused Deposition Modeling with Polylactic Acid via Design of Experiments." *Rapid Prototyping Journal* In press (Submitted July 2014). Print.
- Jonathan Torres. Oral Presentation: "Optimization of Mechanical Properties of Fused Deposition Modeling with Polylactic Acid via Design of Experiments." *University of Central Department of Mechanical and Aerospace Engineering Research Day*, 2014, Orlando, FL.
- Jonathan Torres. "Master's Thesis: Manufacturing of Single Solid Oxide Fuel Cells." *University of Central Florida*, 2013, Orlando, FL.
- Jonathan Torres Oral presentation and Poster: "Electrode Manufacturing for Solid Oxide Fuel Cells." *University of Central Florida Department of Mechanical and Aerospace Engineering Research Day* (2013).
- Jonathan Torres. Poster: "Electrode Manufacturing for Solid Oxide Fuel Cells," *37th International Conference and Expo on Advanced Ceramics and Composites*, Jan. 2013, Daytona Beach, FL.
- Yan Chen, Jonathan Torres, and Nina Orlovskaya. Poster: "Mechanical Properties of Ni/(Sc₂O₃)_{0.1}(CeO₂)_{0.01}(ZrO₂)_{0.89} Cermet Anode for SOFC," *Gordon Research Conference: Solid State Studies in Ceramics*, Aug. 2012, Mt. Holyoke, MA.

AWARDS:

- Gerald R. Langston Endowed Scholarship (2015-2016)
- National Science Foundation Graduate Research Diversity Fellowship (2011-2012)
- U.S. Department of Energy Mickey Leland Energy Fellowship (2012)
- Gordon Research Conference Carl Storm Fellowship (2012)
- Graduation with University Honors (2011)
- Study Abroad Scholarships (Spain 2009, Germany 2010)
- DEI Honors Society (2010)
- Pegasus Gold Scholars (2006-2010)
- Bright Futures 100% Scholarship (2006-2010)
- Community Foundation of South Lake County Scholarship (2006)
- Dean's List (multiple semesters)

ACTIVITIES:

- Design, advising, and manufacture of rapid prototyped parts for multiple projects (2013- present)
- Organize the UCF Mechanical and Aerospace Engineering Inaugural Research Day (2013)
- National Science Foundation I-Corps Lead: Research Commercialization Project Leader (2012)
- Research experience at Oak Ridge National Lab Spallation Neutron Source (2012)

- Guidance and mentoring of undergraduates in research from organized university programs (2011- present)
- Routinely assist senior design groups with design advice and component testing (2011- present)
- Long-term restoration of 1970 Chevrolet El Camino (2003-present), avid cyclist, weight lifter, triathlete and team sports participant