

RODRIGO ORTA

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PhD candidate in materials engineering researching on ceramic materials for high temperature aerospace applications. Experienced (+5 yrs.) mechanical design engineer for product development and cost-savings strategies. Implemented new materials, manufacturing technologies and redesigned of high-volume components to reduce production cost. Strong coaching skills to for students, professionals, and general audiences.

EDUCATION

SEPTEMBER 2019 – MAY 2023

PhD Researcher, Materials Engineering, Purdue University (USA)

OCTOBER 2012 - OCTOBER 2013

MSc Gas Turbine Engineering, Cranfield University (UK)

AUGUST 2006 - DECEMBER 2010

BSc in Mechanical Engineering, ITESO University (MX)

EXPERIENCE

2019 – MAY 2023

PHD RESEARCHER – MATERIALS ENGINEERING, PURDUE UNIVERSITY

- Conduct research on high temperature ceramics, processing techniques, mechanical and physical properties characterization
- Developed a high temperature silicon carbide ceramic heat exchanger for gas turbines applications
- Synthesize ceramic/polymer blends to manufacture components at low temperatures.

2017 - 2020

MECHANICAL ENGINEERING PROGRAM MANAGER, TEC DE MONTERREY

- Established a new strategy to attract mechanical engineering students which increased the enrollment by 50%
- Provided academic and personal mentorship for the success of 250 mechanical engineering students
- Managed the academic programming of courses for students that reduced the number of repeating courses in the academic year saving the department ≈ \$50K/year

2014 – 2017

MECHANICAL DESIGN ENGINEER, GENERAL ELECTRIC - WAUKESHA ENGINES

- Implemented engineering cost savings based on design engineering and new manufacturing technologies to reduce cost on high volume components (estimated savings ≈ \$500K/year)
- Managed and executed engineering change order on core products to be updated for manufacturing
- Developed 3D mechanical engineering models and drawings for new products and improved mechanical components
- Collaborated with global teams to negotiate with customers and suppliers to meet engine and manufacturing requirements.

TECHNICAL SKILLS

Characterization	Tensile testing, SEM, XRD, EDS-X, Optical Microscopy, 4-Point Bending, High-Temperature Testing, Charpy-Test, Rheology.
Processing	Injection/Compression Molding, Extrusion, Mold and Tooling Design & Fabrication, Lamination, Plastic Products Design, Slip Casting and Ceramic Suspensions, Ceramic Joining and Sintering
CAD and Software	Inventor, Solidwoks, PRO-E/CREO, CATIA, ANSYS Workbench, Origin and Image J
Languages	Native Spanish, Full professional proficiency English

LEADERSHIP ACTIVITIES

NEW TECHNOLOGIES INTRODUCTION LEADER, GENERAL ELECTRIC

- Coordinated the introduction of new manufacturing technologies for cost-savings initiatives

CERAMIC POWDER PROCESSING EQUIPMENT MANAGER, PURDUE UNIVERSITY

- Created a training program for new users in ceramic processing equipment such as banbury mixer, high-speed shear mixer, surface grinder and warm press.

GRADUATE RESEARCH MENTOR, PURDUE UNIVERSITY

- Supervised multiple undergraduate students on ceramic research projects and trained them in laboratory techniques.

TECHNICAL ADVISOR FOR BAJA-SAE STUDENT COMPETITION, TEC DE MONTERREY

- Created the first BAJA-Team to participate on an internationally SAE student competition
- Trained and developed a program for students to develop technical and soft skills on engineering

ENGINEERING LECTURER - PURDUE UNIVERSITY/ TEC DE MONTERREY

Lectured students on engineering courses such as: Materials Engineering Fundamentals, Computer Aided-Design, Statics, Mechanics of Materials, Materials Engineering Fundamentals and Design of Machines (since 2015).

PRESENTATIONS AND PUBLICATIONS

MATERIALS SCIENCE & TECHNOLOGY (MS&T) 2021 – COLUMBUS, OH

- (2021) Rodrigo Orta Guerra, Olivia Brandt, Prof. Jeffrey Youngblood, Prof. Rodney Trice. “Pressureless Sintered SiC Formed via Thermoplastic Fugitive Binders for High-temperature Applications”. Oral presentation at the international Materials Science & Technology Technical Meeting and Exhibition.

INTERNATIONAL CONFERENCE & EXPOSITION ON ADVANCED CERAMICS & COMPOSITES (ICACC) 2022 – DAYTONA,FL

- (2022) Rodrigo Orta Guerra, Olivia Brandt, Prof. Jeffrey Youngblood, Prof. Rodney Trice. “Green State Processability and Final Mechanical Properties of SiC Prepared by Co-Extrusion”. Oral presentation at the international Materials Science & Technology Technical Meeting and Exhibition.

INFORMA CONNECT AUSTRALIA

- Contributed with technical advice for the development of article: “Technological developments for the gas turbine industry Which are the most promising? [Link](#).”