Conrad R. A. Cole

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EDUCATION

University of Florida, Gainesville, FL **2014 - 2020**
Ph.D., Mechanical Engineering
Dissertation Title: Electronic Entropy Contributions to Oxygen Vacancy Formation Reaction in Nonstoichiometric Oxides

University of Florida, Gainesville, FL **2012 - 2014**
M.S., Mechanical Engineering

University of Central Florida, Orlando, FL **2005 - 2010**
B.S., Mechanical Engineering

SKILLS

Technical Communication, Organizational Leadership, Adaptability, TGA, XRD, Wolfram Mathematica, Python, C/C++, High-Performance Computing, DFT, Jdftx, Linux, Unix Shell, MobaXterm, Git, Avogadro, PyCharm, Visual Studio, Java

EXPERIENCE

Graduate Research Assistant, University of Florida, Gainesville, FL **August 2014 - Present**

- Developed mathematica scripts that convert raw thermogravimetric data to oxygen nonstoichiometry as a function of temperature and oxygen partial pressure
- Developed mathematica scripts that fit defect reaction models to nonstoichiometry data and extracts partial molar thermodynamic quantities
- Synthesized and characterized perovskite oxides for solar thermochemical fuel synthesis
- Acquired competence in electronic structure theory and condensed matter physics in order to complement experimental work

Graduate Teaching Assistant, University of Florida, Gainesville, FL **Jan 2015 - May 2017**

- Proctored exams, held instructional office hours, and facilitated learning for over 100 students per semester
- Designed and graded exam problems, organized special preparatory sessions prior to exams
- Communicated with students through course website in order to address specific learning needs and share useful supplemental material

Mickey Leland Energy Fellow, NETL, Morgantown, WV **June 2014 - Aug 2014**

- Research Fellowship on the Hybrid Performance Project (HYPER) at the National Energy Technology Laboratory
- Utilized dSPACE and MATLAB & Simulink to perform cyber-physical simulations of a solid oxide fuel cell gas turbine hybrid system
- Analyzed fuel cell electrical load transients and their consequent effects on the operating conditions of solid oxide fuel cell gas turbine hybrid system

Consultant, Booz Allen Hamilton, Orlando, FL **October 2010 - Jun 2011**

- Developed 3D model of urban environment in Google Sketchup software with layers and dimensions in order to specify characteristics of each structure which facilitated meetings with client for generation of system requirements
- Created and maintained corresponding spreadsheet for configuration of live structures and other physical features with detailed dimensions and specifications
- SharePoint site administrator, responsible for multiple tasks including creating working group sites to enhance collaboration between team members and monitoring user site permissions

PUBLICATIONS

Cole, C. R., & Scheffe, J.R. (2016). Thermodynamic Characterization of Yttrium Strontium Manganite Perovskites and Influence of Temperature on Redox Properties. Presentation at the ASME 10th International Conference on Energy Sustainability, Charlotte, NC.