

## Philip D. Myers, Jr., Ph.D.

Postdoctoral Research Associate • Clean Energy Research Center  
3720 Spectrum Boulevard • Tampa, Florida 33612 • philipmyers@mail.usf.edu • (813) 974-6614

---

### RESEARCH INTERESTS

- Photocatalytic air and water purification
- Energy storage for solar power / renewable energy
- Nano-engineering and materials science
- Energy efficiency and HVAC engineering
- Radiative exchange and heat transfer
- Pollution assessment and environmental remediation

### PROFESSIONAL EXPERIENCE

University of South Florida (USF) Clean Energy Research Center, Tampa, Florida

#### **Postdoctoral Research Associate—Air Purification**

Aug 2015 – Present

Directing research partially funded by U.S. EPA concerning novel nanostructured photocatalysts for air purification applications. Work involves inorganic synthesis / characterization of nanostructures, as well as construction and testing of experimental air purification apparatus.

#### **Research Assistant**

Aug 2010 – Aug 2015

Contributed to a variety of projects / proposals, with emphasis on renewable energy / energy efficiency. Topics included solar power (thermal and PV), building energy efficiency, and energy storage. Doctoral dissertation addressed thermal energy storage for utility-scale solar power.

Black & Veatch, Tampa, Florida

#### **Staff Engineer**

Sep 2007 – Aug 2010

Staff engineer for consulting group whose client was U.S. EPA. Engineering tasks included evaluation of remedial technologies and alternatives, design and implementation of field pilot-testing, treatment system design and optimization, and resident engineering oversight.

Army Research Laboratory (ARL), Aberdeen, Maryland

#### **Post-Bachelor's Research Associate**

Jan 2006 – Nov 2006

Primary focus of research was development of novel fatty-acid monomer / vinyl ester (FAVE) resins with typical commercial vinyl ester and unsaturated polyester resins for production of light-weight, high performance composites with reduced VOCs emissions. Secondary focus of research was the evaluation of the efficacy of hyperbranched polymer-enhanced biocidal and/or chemically resistant coatings.

### TEACHING EXPERIENCE

USF, Tampa, Florida

#### **Co-Instructor, ECH5931 Design for Energy Efficiency & Solar Power**

Spring 2016

Co-teaching this graduate-level course with Prof. Yogi Goswami, with emphasis on energy audits, building efficiency retrofits, and solar power for improved energy efficiency in existing City of Temple Terrace government buildings.

#### **Co-Instructor, EVR2217 Energy, Environment & Sustainability**

Spring 2014

Co-taught this undergraduate course with Prof. Yogi Goswami, delivering lectures and aiding in design of the lesson plan, course material, and grading scheme.

### EDUCATION

University of South Florida (USF), Tampa, Florida

#### **Ph.D. in Chemical Engineering**

August 2015

#### **Master of Chemical Engineering**

May 2012

University of Delaware (UD), Newark, Delaware

#### **Bachelor of Chemical Engineering**

December 2005

Minors: Biochemical Engineering, History

### GRANTS / AWARDS

- 2015 USF One-to-one Matching Grant (\$19,478.50)
- 2014 NASA TEERM Outstanding Student Presentation Award /Grant
- 2014 USF Conference Presentation Grant
- USF 2014 Graduate Research Symposium Outstanding Student Presentation Award / Grant
- Merck Outstanding Freshman Chemical Engineer
- UD Eugene DuPont Memorial Distinguished Scholar

## PUBLICATIONS

- M. K. Ram, **P. D. Myers, Jr.**, C. Jotshi, et al. (2016) Microencapsulated dimethyl terephthalate phase change material for heat transfer fluid performance enhancement. *Journal of Energy Storage* (in press).
- P. D. Myers, Jr.**, T. E. Alam, R. Kamal, et al. (2015) Nitrate salts doped with CuO nanoparticles for thermal energy storage with improved heat transfer. *Applied Energy*, 165, 225 – 233.
- S. M. Besarati, **P. D. Myers, Jr.**, D. C. Covey, and A. Jamali. (2015) Modeling friction factor in pipeline flow using a GMDH-type neural network. *Cogent Engineering*, 2 (1), 1056929.
- V. Carias, J. Thompson, **P. D. Myers, Jr.**, et al. (2015) Development of injection-moldable composites with ultra-low coefficient of thermal expansion and high glass transition temperature for fan-out wafer level packaging (FOWLP). *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 5 (7), 921 – 929.
- P. D. Myers, Jr.**, D. Y. Goswami, and E. Stefanakos. (2015) Molten salt spectroscopy for quantification of radiative absorption in novel metal chloride-enhanced thermal storage media. *Journal of Solar Energy Engineering*, 137 (4), 041002.
- P. D. Myers, Jr.**, G. Tamm, S. Vijayaraghavan, and P. E. Jenkins. (2015) *Solutions Manual for Principles of Solar Engineering, 3<sup>rd</sup> Ed.* CRC Press: Boca Raton, Florida.
- I. Udom, **P. D. Myers, Jr.**, M. K. Ram, et al. (2014) Optimization of photocatalytic degradation of phenol using simple photocatalytic reactor. *American Journal of Analytical Chemistry*, 5, 743-750.
- J. J. La Scala, et al. (2007) Fatty acid-based vinyl ester composites with low hazardous air pollutant contents. *Journal of Biobased Materials and Bioenergy*, 1.3:409 – 416.
- J. J. La Scala, F. Levine, **P. D. Myers, Jr.**, et al. (2006) Demonstration of military composites with low hazardous air pollutant content (No. ESTCPWP-0617). *Army Research Laboratory*, Aberdeen Proving Ground, Maryland.

## PRESENTATIONS / PROCEEDINGS

- Mehdi Zeyghami, **P. D. Myers, Jr.**, D. Y. Goswami, and E. Stefanakos. (2016) Selective emitters design and optimization for energy harvesting using rectennas. 2016 ASME Power and Energy Conference, Charlotte, North Carolina, June 26 – 30.
- P. D. Myers, Jr.**, A. Bhardwaj, D. Y. Goswami, and E. Stefanakos. (2015) Chloride salt systems for high temperature thermal energy storage: Properties and applications. *Proceedings of the 2015 ASME Power and Energy Conversion Conference*, San Diego, California, June 28 – July 2.
- P. D. Myers, Jr.**, D. Y. Goswami, and E. Stefanakos. (2014) Molten salt spectroscopy for quantification of radiative absorption in novel metal chloride-enhanced thermal storage media. *Proceedings of the 2014 ASME International Mechanical Engineering Congress and Exhibition (IMECE)*, Montreal, Canada, November 14 – 20.
- T. E. Alam, J. Dhau, **P. D. Myers, Jr.**, et al. (2014) Experimental investigation of a packed-bed latent heat thermal storage system with encapsulated phase change material. Oral presentation at *2014 ASME IMECE*, Montreal, Canada, November 14 – 20.
- P. D. Myers, Jr.**, D. Y. Goswami, and E. Stefanakos. (2014) Sodium chloride doped with nanoparticulate metal oxides: Thermal energy storage with enhanced radiative heat transfer. Poster presented at *2014 ASME IMECE*, Montreal, Canada, November 14 – 20.
- P. D. Myers, Jr.** (2014) Heat transfer enhancement strategies for advanced thermal storage systems. Oral presentation and poster presented at the *2014 NASA TEERM Workshop on Environment and Alternative Energy*, Kennedy Space Center, Florida, October 21 – 24.
- P. D. Myers, Jr.** (2014) Heat transfer enhancement in high-temperature thermal energy storage. Seminar presented to the USF Department of Chemical and Biomedical Engineering, Tampa, Florida, September 26.
- P. D. Myers, Jr.**, D. Y. Goswami, and E. Stefanakos. (2014) Development and characterization of novel metal chloride thermal storage media with enhanced heat transfer. Oral presentation and poster presented at the *2014 Florida Energy Systems Consortium Workshop*, May 12 – 13.
- P. D. Myers, Jr.**, A. Bhardwaj, D. Y. Goswami, and E. Stefanakos. (2014) Heat transfer improvement in IR-transparent phase change materials using absorptive nanoparticle additives for thermal energy storage. Poster presented at the *USF Graduate Research Symposium*, March 17.
- P. D. Myers, Jr.**, D. Y. Goswami, and E. Stefanakos. (2013) Development and characterization of novel high high-temperature thermal energy storage media via advanced IR spectroscopic methods. Poster presented at the *USF College of Engineering Research Day*, November 6.