

Ali F. Elmozughi, Ph.D.

Thermal Engineer

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(484) 633-0598
Cypress, Texas

Dedicated Senior Thermal Engineer with 15+ years of experience, utilizing thermal fluid science to design, test, and analyze instruments and remove obstacles through problem-solving and leadership skills. Expert in heat exchange in relation to thermal fluid science, thermal storage energy using phase change materials, and CFD simulation and analysis. Talented in leading and designing fluid science courses, recognizing objectives and priorities in this field to effectively educate under/grad students.

Qualifications Summary

- Skilled in managing high volumes of work in a fast-paced environment while achieving outstanding results.
- Demonstrated strengths in overseeing and directing Innovation thermal lab and AHRI Test for LLHE Capacity 400.
- Balance competing tasks, adapt to shifting priorities, and proactively address emergent issues.
- Trusted, results-oriented, engineer proven through high performance and resolving issues with creative and efficient solutions.

Career Experience

Thermal – CFD Engineer

Innovation Center, Tranter Inc., Houston, TX

2017 – Current

Adept at analyzing complex challenges and developing lasting solutions to reduce risk and drive operational excellence. Responsible for simulation and thermal analysis using STAR CCM+. Overseeing thermal test LAB (more than 10 M\$) and directing technicians. Strong leader, skilled at problem-solving and committing to action. Test plans, analyze data, and lead certification tests such as AHRI. Generate correlations and constants for sizing software. Troubleshoot for new and existing heat exchangers. Thermal Analysis of new and existing products (heat exchangers). Build consensus with cross-functional teams and maintain open lines of communication to facilitate operations running smoothly.

- Driving Simulation tasks from Meshing, Processing – Modeling, & Post Processing results.
- Oversee a \$7M construction & design thermal lab for testing heat exchanger units.
- Highly self-motivated with a drive to continuously improve performance and scale the business through innovative systems and processes.
- Delivered exceptional results in the innovation center, enhancing business practices, and achieving or going beyond goals.
- Designing the heat plate heat exchanger units.

Assistant Professor / Adjunct Professor

Mechanical Engineering Department, Midwestern State University, Wichita Falls, TX

2019 – Current

Mechanical Engineering Department, Georgia Southern University, GA

2016 – 2017

Mechanical Engineering Department, Manhattan College, New York & Bridgeport University, CT

2016

Empower students to excel in fast-paced, highly demanding environments that require strong problem-solving and leadership skills. At Midwestern State University, taught undergraduate quality management and supply chain. At Georgia Southern University, taught undergraduate thermodynamics, fluid mechanics, energy lab, and capstone design. At New York and Bridgeport University, taught graduate classes on applied thermodynamics and renewable thermal energy (special course). Skilled in people development and growing intelligent, high-performing individuals by providing the tools and knowledge needed to succeed.

- Ability to clearly convey complex information to students as an educator.
- Consistently lead by example, encouraging maximum potential, performance, and dedication in students.
- Expertise in thermodynamics, fluid mechanics, and renewable thermal energy.
- Assist in capstone design projects for senior students.
- Successfully designed Graduate Student course for Thermal Renewable Energy.

Additional Experience

Mechanical Engineering (Contract)

LEAS Engineering Company, Montville, NJ

Mechanical Engineer (Full & P-T)

Africa Motor Company - Mercedes Benz dealership,
Tripoli, Libya

Lecturer

Mechanical Engineering Dept., Tripoli University, Tripoli,
Libya

Teaching Assistant

Mechanical Engineering Dept. Tripoli University, Tripoli,
Libya

Education

Ph.D. Mechanical Engineering – Thermal Fluid Science

Lehigh University, Bethlehem, Pennsylvania

Master of Science: Mechanical Engineering – Thermal Fluid Science

Tripoli University, Tripoli, Libya

Bachelor of Science: Mechanical Engineering

Tripoli University, Tripoli, Libya

Publications

- Ali Elmozughi, Mahmoud Elsharafi, Pranaya Pokharel, Clayton Holmes, Madison Krahl, Musaad Aldawsari, Theo Rolle, SIMULATED MODEL FOR A NEW DESIGN OF THERMAL ENERGY STORAGE SYSTEM, ASME 2021 International Mechanical Engineering Congress & Exposition IMECE2021- 68202. (accepted and presented November 2021).
- Mahmoud Elsharafi, Ali Elmozughi, Pranaya Pokharel, Clayton Holmes, Madison Krahl, Musaad Aldawsari, Theo Rolle, Analysis of Thermal Energy Storage in GPHE Unit Using PCM Technology Experimentally, ASME 2021 International Mechanical Engineering Congress & Exposition IMECE2021- 67656. (accepted and presented November 2021)
- Mahmoud Elsharafi, Ali Elmozughi, Kelton Vidal, Rumelia Thomas, Saleh Almutairi, Thilanka Senevirathne, Joshua Lambricht, Energy Recovery Unit Using Phase Change Materials, ASME 2020 International Mechanical Engineering Congress & Exposition IMECE2020, Published Online: February 16, 2021.
- Ali F. Elmozughi, Laura Solomon, Alparslan Oztekin, Sudhakar Neti, Encapsulated phase change material for high temperature thermal energy storage – Heat transfer analysis, International Journal of Heat and Mass Transfer, Volume 78, November 2014, Pages 1135–1144
- Laura Solomon , Ali F. Elmozughi, Alparslan Oztekin, Sudhakar Neti, ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014 Nov 14- 20, 2014, Montreal, Canada
- Weihuan Zhao, Ali F. Elmozughi, Sudhakar Neti, Alparslan Oztekin, Heat transfer analysis of encapsulated phase change material for thermal energy storage, International Journal of Heat and Mass Transfer Volume 63, August 2013, Pages 323–335
- Ali F. Elmozughi, Weihuan Zhao, Sudhakar Neti, Alparslan Oztekin, Thermal Modeling of High Temperature Energy Storage Using Encapsulated Phase Change Materials, ASME 2012 International Mechanical Engineering Congress & Exposition IMECE2012 November 9-15, 2012, Houston, Texas, USA.
- Weihuan Zhao, Ali F. Elmozughi, Alparslan Oztekin, Sudhakar Neti, Transient 2-D Heat Transfer Analysis of Encapsulated Phase Change Materials for Thermal Energy Storage, ASME 2012 International Mechanical Engineering Congress & Exposition IMECE2012 November 9-15, 2012, Houston, Texas, USA.
- Ali F. Elmozughi, Weihuan Zhao, Sudhakar Neti, , Alparslan Oztekin, Thermal Modeling of High Temperature Energy Storage Using Encapsulated Phase Change Materials, 6th International Conference on Advanced Computational Engineering and Experimenting International conference in Istanbul, Turkey, JULY 1-4, 2012.
- Ali Elmozughi, Mohamed Muntasser, Bo Nordell, Simulation of Vertical U-Tube Heat Exchanger, Effstock Conference, 2009, Stockholm, Sweden.