

Mohamed Shaaban Eissa

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1. Professional Highlights

- PhD student at University of Illinois Urbana Champaign.
- Teaching Assistant at Mechanical Department, Faculty of Engineering, Alexandria University, Egypt.
- Outstanding record in designing an innovative CFD model using COMSOL Multiphysics for numerical mass and heat transfer simulations including Multiphysics systems.

2. Academic Achievements

- During my master thesis, developed for the first time a fully coupled transient numerical model for computational study on copper foamed adsorbent bed coated with SAPO-34 and CPO-27(Ni) using COMSOL Multiphysics and I have a paper published in the journal of " **Applied Thermal Engineering** ".
- I was involved in an ice production project using adsorption system applying active carbon and ethanol pair in two proposed forms: a) consolidated form. b) in grains form with aluminium foam. I have three papers accepted in the **international conference at Saudi Arabia, Energies and Applied Sciences**.
- As an undergraduate alongside a research team, designed a complete numerical model using MATLAB programme for integrating a solar system with adsorption system for hybrid purposes; cooling and desalination and published a research paper in the journal of " **Applied Thermal Engineering** ".
- Obtained my master's degree in Mechanical Engineering from Faculty of Engineering, Alexandria University, Egypt in May 2022 with a GPA 4/4.
- Obtained my bachelor's degree in Mechanical Engineering from Faculty of Engineering, Alexandria University, Egypt with general grade Excellent with degree of Honor and a percentage of 93.47 as the 1st the batch in 2018.

3. Experience

University of Illinois Urbana Champaign

Aug. 2022 to present.

PhD Student

- Currently, I am enrolled in the PhD mechanical program at University of Illinois Urbana Champaign.

Alexandria University

2019 to Aug. 2022

Teaching Assistant

- Teaching the following undergraduate courses: Thermodynamics I and II, Thermal Equipment Design, and Heat and Mass Transfer at Mechanical Engineering Department.

4. Software Applications

- COMSOL Multiphysics: Professional Command with COMSOL Multiphysics.
- Computer Programming (MATLAB and Python).
- EES Engineering Equation Solver.
- SolidWorks.
- HTRI

5. Languages

- **Arabic** Native Speaker
- **English** very good (Scored 7 in IELTS)

6. Publication

1. Elsheniti, M. B., A. Rezk, **M. Shaaban**, M. Roshdy, Y. M. Nagib, O. A. Elsamni and B. B. Saha (2021). "Performance of a solar adsorption cooling and desalination system using aluminum fumarate and silica gel." **Applied Thermal Engineering** **194**: 117116.

<https://doi.org/10.1016/j.applthermaleng.2021.117116>

<https://www.sciencedirect.com/science/article/pii/S1359431121005561>

2. **Shaaban, M.**, M. B. Elsheniti, A. Rezk, M. Elhelw and O. A. Elsamni (2022). "Performance investigation of adsorption cooling and desalination systems employing thermally enhanced copper foamed bed coated with SAPO-34 and CPO-27(Ni)." **Applied Thermal Engineering** **205**: 118056.

<https://doi.org/10.1016/j.applthermaleng.2022.118056>

<https://www.sciencedirect.com/science/article/pii/S1359431122000230>

3. Elsheniti, M.B., H. Al-Ansary, J. Orfi, A. El-Leathy, **M.S. Eissa**, and O. Elsamni, *Enhancing Adsorption Ice Maker Productivity using Beds of Aluminium Foam Packed with Activated Carbon*. **IOP Conference Series: Earth and Environmental Science**, 2022. **1026**(1): p. 012005.

<https://iopscience.iop.org/article/10.1088/1755-1315/1026/1/012005/meta>

4. Elsheniti, M.B., **M.S. Eissa**, H. Al-Ansary, J. Orfi, O. Elsamni, and A. El-Leathy, *Examination of Using Aluminum-Foam/Finned-Tube Beds Packed with Maxsorb III for Adsorption Ice Production System*. **Energies**, 2022. **15**(8): p. 2757..

<https://doi.org/10.3390/en15082757>

<https://www.mdpi.com/1996-1073/15/8/2757>

5. Elsheniti, M.B., **M.S. Eissa**, H. Al-Ansary, J. Orfi, A. El-Leathy, and O. Elsamni, *Using a Combination of Activated Carbon and Graphene Nanoparticles in a Consolidated Form for Adsorption Ice Maker: A System-Level Modeling*. **Applied Sciences**, 2022. **12**(15): p. 7602.

<https://doi.org/10.3390/app12157602>

<https://www.mdpi.com/2076-3417/12/15/7602>