Asmaa Aly Harraz, BSC.(Hons.), MSc, PhD, DIC

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EDUCATION BACKGROUND

Imperial College London **London, UK**
PhD, Heat and Power division
Clean Energy Processes (CEP) Laboratory
Department of Chemical Engineering
Diploma of Imperial College London
September 2017-November 2022
Thesis title: Computer-Aided Molecular and System Design of Diffusion Absorption Solar-Cooling Systems

Alexandria University **Alexandria, Egypt**
MSc., Chemical Engineering *September 2011-October 2014*

Alexandria University **Alexandria, Egypt**
BSc., Gas and Petrochemical Engineering *September 2006-June 2011*
GPA: 3.97/4.00, Top(1/98)

PROFESSIONAL EXPERIENCE

Faculty of Engineering, Alexandria University ***Assistant Professor in Clean Energy Systems - Department of Chemical Engineering*** **Alexandria, Egypt**
April 2023-present

- Co-lecturing Fundamentals of Heat Transfer and Sustainable Energy Resources courses.
- Quality Assurance coordinator for the Gas and Petrochemical Engineering Programme.

Assistant Lecturer in Chemical Engineering *November 2022-March 2023*

Clean Energy Processes (CEP)Laboratory
Department of Chemical Engineering **London, UK**
Imperial College London
PhD Researcher *September 2017-November 2022*

- Dynamic modelling of thermal-powered refrigeration systems like diffusion absorption refrigeration systems.
- Developing a framework for working-fluid selection in refrigeration systems.

Faculty of Engineering, Alexandria University **Alexandria, Egypt**
Assistant Lecturer and Teaching Assistant in Chemical Engineering *September 2011-July 2017*

- Participated in different course activities, including course design, general teaching activities and student evaluation.
- Joined the conference steering committee for the Biennial conference "Role of Engineering towards Better Environment, Alexandria, Egypt".

EU-partner project, TriNex "Food-Water-Energy Nexus" **Alexandria, Egypt**
Project Administrator *December 2013-July 2017*

- Used to be a part of a team at Alexandria University who developed a high-technology desalination laboratory.
- As a team member, was responsible for project activities management and documentation.

PUBLICATIONS

- **A. A. Harraz**, A. J. Haslam, N. M. Dowell, and C. N. Markides. Computer-aided molecular and system design for domestic diffusion-absorption refrigeration systems using mixed-integer non-linear programming: Can organic working fluids replace ammonia-water? 2023. *unpublished*

- **A. A. Harraz**, A. Najjaran, K. Wang, A. M. Pantaleo, and C. N. Markides. Optimal integration of solar refrigeration in food processing: Techno-economic comparison of PV, PV-T and hybrid solar cooling in a dairy farm. In *The 15th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES)*, Cologne, Germany, September 2020

- A. Najjaran, **A. A. Harraz**, P. Sapin, K. Wang, and C. Markides. Experimental investigation on the start-up time of a small-scale diffusion absorption refrigeration (DAR) unit. In *14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics*, Wicklow, Ireland, July 2019

- A. Najjaran, **A. A. Harraz** ., J. Freeman, R. Sacks, and C. N. Markides. Experimental study of a diffusion absorption refrigeration unit at different charge-pressures. In *ACEC 2019 Annual Clean Energy Conference*. Shiraz University, 2019

- **A. A. Harraz**, J. Freeman, K. Wang, N. M. Dowell, and C. N. Markides. Diffusion-absorption refrigeration cycle simulations in gPROMS using SAFT-γ Mie. *Energy Procedia*, 158:2360 – 2365, 2019

- **A. A. Harraz**, A. Najjaran, R. Sacks, J. Freeman, A. V. Olympios, N. Mac Dowell, and C. N. Markides. Experimentally validated simulations of a diffusion absorption refrigeration system. In *ECOS 2019: Proceedings of the* 32nd *International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems*, Wroclaw, Poland, June 2019

- A. Najjaran, **A. A. Harraz**, J. Freeman, N. Mac Dowell, and C. N. Markides. Numerical and experimental investigation of diffusion absorption refrigeration systems for Use with low-temperature heat sources. In J. C. Teixeira, editor, *ECOS 2018: Proceedings of the* 31st *International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems*, page 323, Guimarães, Portugal, June 2018

- L. M. Van Kleef, O. A. Oyewunmi, **A. A. Harraz**, A. J. Haslam, and C. N. Markides. Case studies in computer-aided molecular design (CAMD) of low-and medium-grade waste-heat recovery orc systems. In J. C. Teixeira, editor, *ECOS 2018: Proceedings of the* 31st *International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems*, Guimarães, Portugal, June 2018

- **A. A. Harraz**, I. A. E. Gheriany, M. H. Abdel-Aziz, T. M. Zewail, A. H. Konsowa, and G. H. Sedahmed. Liquid–solid mass transfer behaviour of a fixed bed airlift reactor. *Biochemical Engineering Journal*, 103:1 – 11, 2015