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Objective

Enthusiastic Researcher eager to contribute to team success through hard work, attention to detail and excellent organizational skills. Goal-oriented to advance department, improve teaching and modernize courses. Extensive background in research. Seeking and continuing education courses and certification programs for classroom, online, and corporate education. Detail-oriented, focused professional with extensive experience in chemical engineering and material science.

Work Experience

Professor of chemical engineering

chemical engineering department at Higher Institute of Engineering and Technology in Tanta- 15/02/2025 till now

Vice Dean for Education and Student Affairs

Higher Institute of Engineering and Technology in Tanta- 25/9/2024 till now

Head of chemical engineering department

chemical engineering department at Higher Institute of Engineering and Technology in Tanta- 10/3/2024 till now

Associate Professor

chemical engineering department at Higher Institute of Engineering and Technology in Tanta- 17/02/2024 till 15/2/2025

Post Doc Res Assoc

The Department of Civil & Architectural Engineering & Construction Management at the University of Wyoming, USA.

- conduct detailed thermodynamic process modeling and techno-economic analysis for post-combustion CCS systems using liquid solvents for deep carbon capture (up to 99% CO₂ removal) at biomass-coal co-firing power plants.

Associate Professor

- Online Supervision of postgraduate master for University of Rojava in Syria Sep 2022- July 2025
- Online Teaching Advanced postgraduate courses (Thermodynamics for Petroleum Hydrocarbons - design of catalytic reactor) Sep 2021-jun 2022

Associate Professor

Petrochemical engineering department at Pharos University in Alexandria - June 2018 - Sep 2022

- Develop online courses in Blackboard.
- Responsible for advising 20+ students each semester in regard to course and graduation requirements, graduation applications, online course preparation, etc.
- Supervision of graduation and community projects
- Encouraged class discussions by building discussions into lessons, actively soliciting input, asking open-ended questions and using techniques to track student participation.
- Updated curricula and lesson plans for primary instructors, researching developments in relevant fields and updating materials to reflect most recent data and statistics.
- Graded quizzes, tests, homework and projects to provide students with timely academic progress information and feedback.
- Graded tests and assignments and uploaded to school database.
- Teaching undergraduate courses (Optimization of chemical processes -inorganic chemistry- chemical processes principles-Industrial corrosion- gas treatment & Liquefaction- industrial equipment's and material handling- introduction to petrochemical industries- thermodynamics II - Plant design II - physical chemistry- introduction to environmental engineering courses) .

Lecturer

Petrochemical engineering department at Pharos University in Alexandria - April 2013 - May 2018

Teaching undergraduate courses (pollution control -water treatment-gas treatment & Liquefaction - gas storage- introduction to petrochemical industries-heat transfer - chemical process principles-industrial equipment's and material handling, thermodynamics II ,Plant design II and introduction to environmental engineering courses.

Assistant lecturer

Petrochemical engineering department at Pharos University in Alexandria - Sep 2010 - March 2013

Teaching undergraduate courses (inorganic chemistry -material science -pollution control -chemical reaction engineering - thermodynamics- heat transfer - mass transfer I & II - general chemistry - physical chemistry -instrumental analysis -plant design II - industrial equipment's courses.

Lab engineer

Petrochemical engineering department at Pharos University in Alexandria - Sep 2008 - Sep 2010

Responsible for (analytical chemistry lab, heat & thermodynamic lab & waste water treatment lab)

Chemical engineer

- Sep 2004 - Sep 2008

Production department (electrolytic cell unit) Misr for Chemical Industries Co. Alexandria.

Education

- **PhD in chemical engineering** 2010- 2013(36 months)
Faculty of Engineering, Alexandria University, Alexandria.
- **Master of Science in chemical engineering** 2006-2009 (40months)
Faculty of Engineering, Alexandria University, Alexandria.
- **A diploma degree in chemical engineering** 2004- 2006 (24months)
Faculty of Engineering, Alexandria University, Alexandria.
- **Bachelor of Science degree in chemical engineering** 1999-2003 (60months)
Faculty of Engineering, Alexandria University, Alexandria.

Publications

1. Dorgham, A. M., & Farouq, R. (2025). Ultrasound-assisted photocatalytic oxidation of isopropanol using Fe_2O_3 nanoparticles. *Nano-Structures & Nano-Objects*, 44, 101561
2. Farouq, R., Hamdy, E., Abbassy, M. M., & Farag, H. A. (2025). Utilizing nanomaterials to functionalize the Tikoua extract as a powerful green anti-corrosion inhibitor for carbon steel. *Journal of Petroleum Exploration and Production Technology*, 15(9), 143.
3. Farouq, R., Remadan, A., Barakat, N. A., Nabiabad, H. S., & Dorgham, A. M. (2025). Photocatalysis Decomposition of Hydrogen Sulfide (H_2S) in Ethanolamine Solution Using $\text{CuO/ZnO/ZnFe}_2\text{O}_4$. *Catalysis Letters*, 155(6), 1-11.
4. Farouq, R., & Selim, Y. (2023). Functionalized Polyethylene Glycol as a Catalyst for Esterification of Salicylic Acid. *Journal of Polymers and the Environment*, 1-9.
5. Farouq, R. (2022). Functionalized graphene/polystyrene composite, green synthesis and characterization. *Scientific Reports*, 12(1), 21757.
6. Tayeb, Aghareed M., Mostafa, N. A., Olfat, M. A., Farouq, R., & Monazie, A. M. "Investigation of Biosurfactants Production from Petroleum Oil Wastes Using Response Surface Methodology." *Petroleum Chemistry* (2022): 1-8.
7. Rania Farouq "Coupling Adsorption-Photocatalytic Degradation of Methylene Blue and Maxilon Red *Journal of Fluorescence*, (2022): 1-8.
8. Farouq, R., Ismaeel, E. K., & Monazie, A. M. (2022). Optimized Degradation of Eosin Dye Through UV-ZnO NPs Catalyzed Reaction, *Journal of Fluorescence*.
9. Tayeb, A., & Farouq, R. (2022). Treatment by agricultural by-products of Industrial effluents polluted with heavy metals. *Indian Journal of Chemical Technology (IJCT)*, 29(3), 270-278.
10. Aghareed Tayeb, Wael Abdelmoez, Rania Farouq and Hend Gedawy "Recycling of Conditioned Alum Sludge Use as an Adsorbent For decolorization of effluents from Textile Industry" *International Journal of Social Ecology and Sustainable Development (IJSESD)*. doi:10.4018/IJSESD.
11. Ibrahim, A. Y., Ashour, F. H., Gadalla, M. A., & Farouq, R. (2021). Exergy study of amine regeneration unit for diethanolamine used in refining gas sweetening: A real start-up plant. *Alexandria Engineering Journal*.
12. El-Husseiny, A., Farouq, R., Farag, H., & El Taweel, Y. (2021). Exergy Analysis of a Turbo Expander: Modeling and Simulation. *Acta Chimica Slovenica*.
13. Tayeb, A. M., Farouq, R., Shehata, A. Z., & Othman, R. H. (2020). Enhanced solar desalination units. *Proceedings of the Institution of Civil Engineers-Energy*, 1-10.
14. Tayeb, A. M., Hussein, D. S., & Farouq, R. (2020). Optimization of photocatalytic degradation

- of methylene blue dye using titanate nanotube. *Journal of Nanophotonics*, 14(2), 026008.
15. Abutaleb, A., Tayeb, A. M., Mahmoud, M. A., Daher, A. M., Desouky, O. A., Bakather, O. Y., & Farouq, R. (2019). Removal and recovery of U (VI) from aqueous effluents by flax fiber: Adsorption, desorption and batch adsorber proposal. *Journal of Advanced Research*.
 16. Tayeb, A. M., Farouq, R., Mohamed, O. A., & Tony, M. A. (2019). Oil spill clean-up using combined sorbents: a comparative investigation and design aspects. *International Journal of Environmental Analytical Chemistry*, 1-13.
 17. Ehssan Nassef, N.S. Yousef and Rania Farouq Adsorption of Dye by Nano-zinc oxide *Journal of American Science* 2020;16(3)
 18. N. A. Mostafa, Aghareed M. Tayeb, O. A. Mohamed, Rania Farouq Biodegradation of Petroleum Oily Effluents and Production of Biosurfactant: Effect of Initial Oil Concentration" for publication in the *Journal of Surfactants and Detergents*, *Journal of Surfactants and Detergents*, 2019
 19. Ahmed Mohsen, Rania Farouq, Hassan A. Farag, Mostapha Salem, A Study On The Effect Of Operating Parameters On The Efficiency Of A Mercury Removal Unit From Natural Gas, *Civil And Environmental Engineering Reports*, 29 (2): 117-155
 20. Rania Farouq, Investigation of the kinetics and optimization of photocatalytic degradation of methylene blue, *Journal of the Chinese Chemical Society*, 2018
 21. Rania Farouq, M. Abd-Elfatah and M. E. Ossman, Response surface methodology for optimization of photocatalytic degradation of aqueous ammonia, *Journal of Water Supply: Research and Technology - AQUA*, DOI: 10.2166/aqua.2018.121, Volume 66, issue 8
 22. Rania Farouq, Yehia Selim, Solvent extraction of iron ions from hydrochloric acid solutions, *Journal of Chilean Chemical Society. J. Chil. Chem. Soc.*, 62, N° 2 (2017)
 23. M.E. Ossman, Rania Farouq M. Abd-Elfatah, Photocatalytic degradation of red dye: optimization using RSM, *Journal of Environmental Engineering and Science*, 2016.
 24. Noha Yousef, Rania Farouq, Riham Hazzaa, " Adsorption kinetics and isotherms for the removal of nickel ions from aqueous solutions by an ion- exchange resin: Application of two and three parameter isotherm models ", *Desalination and Water Treatment*, Issue 46, Vol. 57/50 October 2016.
 25. Hassan A. Farag, N. S. Yousef, and Rania Farouq "modeling and simulation of a hydrocracking unit" *Journal of Engineering Science & Technology (JESTEC)*. Volume 11, Issue 8, August 2016.
 26. Rania Farouq, N.S. Yousef, Equilibrium and Kinetics Studies of adsorption of Copper (II) ions on Natural Biosorbent, *International Journal of Chemical Engineering and Applications (IJCEA)* Vol. 6, No. 5, 2015
 27. R. Abu-Elella, M.E. Ossman, R. Farouq M. Abd-Elfatah, Used Motor Oil Treatment: Turning Waste Oil Into Valuable Products, *International Journal of Chemical and Biochemical Sciences*, 7, 2015:57-67.
 28. Abdelrhman A. Yacoub, Rania Farouq, Hassan A. Farag "Modeling, simulation and optimization Of Dehydrogenation and Dehydrocyclization Reactions" *International Journal of Chemical Engineering Research (SSRG-IJCER)* volume 2 Issue 2 July to Aug 2015.
 29. N.S. Yousef, Riham Hazzaa, Rania Farouq, Adsorptive Removal of Chromium (III) from aqueous solution using Cation-Exchange Resin: Development of an Empirical Model, *International Proceedings of Chemical, Biological and Environmental Engineering*, Vol. 88, 2015.

RESEARCH EXPERIENCE

- Integration between green chemistry and Nano science: preparing corrosion inhibitor from plant extracts and enhances its efficiency with various nanoparticles
- Preparing catalysts and adsorbents from waste materials.

Conferences & presentations

Attendee

Engineering Conference of the Higher Institute of Engineering and Technology in Tanta, 17 February 2025, Tanta, Egypt

2nd International Conference on New Trends for Sustainable Energy ICNTSE, 5th to 7th November 2018, Alexandria, Smouha, Egypt

1st international conference on new trends for sustainable energy (ICNTSE), October 1-3, 2016, Alexandria, Egypt.

Poster presentations

2nd edition of International Conference on Green Chemistry and Renewable Energy, Online Conference, May 16-17, 2022

8th International Conference on Environmental and Computer Science (ICECS 2015), September 14-15, 2015, Milan, Italy.

Paper presentations

International Conference on Civil and Environmental Engineering (ICCEE 2018), Hurghada, Egypt, 24-26 November 2018

Supervising post graduate thesis

Supervising 5 master thesis's titled:

1. A study on the effect of operating parameters on the efficiency of a mercury removal unit from natural gas (faculty of engineering - Alexandria University)
2. A study on the efficiency of some environmentally friendly botanical sources as metals anti-corrosion. (Institute of graduate studies and research- Alexandria University)
3. A study on the use of natural dyes as solar cells sensitizers (institute of graduate studies and research- Alexandria University)
4. Photocatalytic Valorization of Plastic Waste (poly (ethylene terephthalate) (PET) to Chemicals and Fuels (September 2022 until now) (Rojava University - Institute of Science and Modern Technology)
5. Photocatalytic transformation of Hydrogen sulfide (H₂S) pollutant into hydrogen green fuel and elemental sulfur (September 2022 until August 2024) (Rojava University- Institute of Science and Modern Technology)

Graduation Project Supervision - Award Achievement (2026)

- Supervised a student team whose graduation project (Integrating machine learning with the development of environmentally friendly photocatalysts: Graphene oxide with silver carbonate for wastewater treatment) received an award from the Academy of Scientific Research and Technology (ASRT), Egypt.
- Guided project design, experimentation, and final presentation.

Experimental skills

Hands on experience

UV absorption spectrophotometer COD and BOD analysis

research skills

Time management, research skill, reading comprehension, self-discipline, writing articles, and multitasking.

Computer skill

ICDL, Matlab ,and Hysis

UNIVERSITY AND FACULTY SERVICE

- Quality assurance coordinator of petrochemical engineering program 2020-2022
- Member of the executive commit of Quality assurance unit of faculty of engineering 2020-2022
- Academic advisor 2012-2022
- Quality assurance unit member 2016- 2018
- Scientific research commit 2016-2017
- Laboratories development commit 2017-2022
- Crisis and disaster management commit 2018- 2020

Training courses attended

Faculty and leadership development center (FLDC)

International publishing research Preparing a competitive research project

Funded research implementation and research team management

Workshops Attended

- Electronic exams
- Teaching and learning strategies
- Managing lectures
- Syllabus design and construction

- Stress & anger management
- Learning styles and strategies
- Writing a Research Project Proposal
- Leadership Skills
- Students' assessment
- Motivation and feedback
- Academic integrity
- Decision making and problem solving
- Emotional intelligence