

Safwat Mahmoud, PhD, PMP®

Associate Professor of Sanitary & Environmental Engineering,
Cairo University, Egypt

Al-Haram, Giza, Egypt

Phone: (+2) 01092525159

E-mail: safwat@eng.cu.edu.eg

PROFESSIONAL SUMMARY

PhD in environmental engineering seeking to continue my training as a researcher and an engineer, and gain skills and experience that will enhance my academic and professional career. My research interest calls for the discovery of sustainable solutions in treating water and wastewater. My main goal is to optimize treatment systems through maximization of the efficiency of pollutants' removal and resource recovery, as well as the minimization of the total cost.

EDUCATION

* **PhD - Cairo University, Egypt** (2013- 2016)

Sanitary and Environmental Engineering Division, Civil Engineering Department (Public Works), Faculty of Engineering, Cairo University, Egypt.

- Graduate courses: 15 credit hours of environmental engineering courses with **GPA of 4.0**.
- Thesis title: Simultaneous Electricity Generation and Wastewater Treatment Using Microbial Fuel Cells.

* **Graduate Student - University of Alberta, Canada** (2012 - 2013)

Environmental Engineering Department, Faculty of Engineering, University of Alberta, Canada.

- Graduate courses: 19.5 credit hours of environmental engineering courses with **GPA of 4.0**.

* **M.Sc. - Cairo University, Egypt** (2009 – 2012)

Sanitary and Environmental Engineering Division, Civil Engineering Department (Public Works), Faculty of Engineering, Cairo University, Egypt.

- Graduate courses: 18 credit hours of environmental engineering courses with **GPA of 4.0**.
- Thesis title: Effect of Using Effective Microorganisms in Anaerobic Sequencing Batch Reactor for Municipal Wastewater Treatment.

* **B.Sc. - Cairo University, Egypt** (2004 – 2009)

- Civil Engineering (**Distinction with Honours**).

CERTIFICATIONS

* **(2021)** Professional Certificate in **Solid and Hazardous Waste Management** – The American University in Cairo (AUC), Egypt

* **(2021)** Professional Certificate in **Environmental Systems and Processes** – The American University in Cairo (AUC), Egypt

* **(2020)** Professional Certificate in **Environmental Impact Assessment and Environmental Auditing** – The American University in Cairo (AUC), Egypt

* **(2020)** **Project Management Professional (PMP®) certification**, Project Management Institute (PMI), PA, USA.

* **(2019)** Professional Certificate of **Project Management (PRMG)**, the American University in Cairo (AUC), Egypt.

ACADEMIC EXPERIENCE

* **Associate Professor of Sanitary & Environmental Engineering** (2021 – Present)

Sanitary & Environmental Engineering Division, Civil Engineering Department (Public Works), Faculty of Engineering, Cairo University, Egypt. Job duties include teaching undergraduate and graduate courses of environmental engineering, and supervising graduate students (MSc and PhD students).

Courses for undergraduate students:

- Sanitary & Environmental Engineering I
- Sanitary & Environmental Engineering Graduation Project
- Advanced Topics in Networks Design
- Sanitary & Environmental Engineering II
- Water and Wastewater Engineering

Courses for graduate students:

- Environmental Chemistry
- Wastewater Treatment
- Water and Soil Pollution
- Environmental Measurements
- Low Cost Sanitation Systems
- Water Supply and Wastewater Collection

* **Assistant Professor of Sanitary & Environmental Engineering** (2016 – 2021)

Sanitary & Environmental Engineering Division, Civil Engineering Department (Public Works), Faculty of Engineering, Cairo University, Egypt. Job duties include teaching undergraduate and graduate courses of environmental engineering, and supervising graduate students (MSc and PhD students).

* **Graduate Researcher and Assistant lecturer** (2012 – 2016)

Civil Engineering Department (Public Works), Faculty of Engineering, Cairo University, Egypt. Job duties included assistance in teaching undergraduate courses.

* **Graduate Researcher and Teaching Assistant** (2009 – 2012)

Civil Engineering Department (Public Works), Faculty of Engineering, Cairo University, Egypt. Job duties included assistance in teaching undergraduate courses.

RESEARCH PROJECTS

- 2021 – Present: “*A US-Egypt Evaluation of Anaerobic Membrane Bioreactors to Enhance Agricultural Water Reclamation while Mitigating Antibiotic Resistance*” Funded by Cycle 20 Collaborative Research Grants: U.S. – Egypt S&T Joint Fund. [Role: Researcher]
- 2021 – Present: “*Evaluation and development of anaerobic membrane bioreactor (AnMBR) technology to promote unrestricted wastewater reuse and mitigate compromised surface water quality in the Mediterranean region*” Funded by Partnership for Research and Innovation in the Mediterranean Area [PRIMA] - EU. [Role: Co-PI for the Egyptian Team]
- 2021 – Present: “*Application of Microbial Fuel Cells as Biosensors for Water Quality Monitoring*” Funded by Cairo University - Egypt. [Role: PI]
- 2019 – 2022: “*Microbial Desalination Cells: An Emerging Technology for Wastewater Treatment, Desalination and Energy Recovery*” Funded by Science and Technology Development Fund STDF - Egypt. [Role: PI]

1. **Safwat M. Safwat**, Nouran Y. Mohamed, Mohamed N. A. Meshref, Abdelsalam Elawwad, "Adsorption of Phenol onto Aluminum Oxide Nanoparticles: Performance Evaluation, Mechanism Exploration, and Principal Component Analysis (PCA) of Thermodynamics", *Adsorption Science & Technology*, vol. 2022, Article ID 1924117, 14 pages, 2022. <https://doi.org/10.1155/2022/1924117>
2. **Safwat M. Safwat**, and Minerva E. Matta., Environmental applications of Effective Microorganisms: a review of current knowledge and recommendations for future directions. *Journal of Engineering and Applied Science*, 68.48 (2021):1-12. <https://doi.org/10.1186/s44147-021-00049-1>
3. Omar Shaker, Minerva E. Matta., and **Safwat M. Safwat** "Nickel and Chromium Removal by Electrocoagulation using Copper Electrodes." *Desalination and Water Treatment*, 213 (2021):371-380. <https://doi.org/10.5004/dwt.2021.26722>
4. Mostafa Mamdouh, **Safwat M. Safwat**, Ehab Rozaik, and Hisham Abdelhalim. "Urea Removal Using Electrocoagulation Process with Copper and Iron Electrodes. " *Desalination and Water Treatment*, 213 (2021):259-268. <https://doi.org/10.5004/dwt.2021.26690>
5. **Safwat M. Safwat**, Ahmed Ali, and Minerva E. Matta " Adsorption of Copper using Fuller's Earth: Kinetics, Equilibrium and Thermodynamics." *Journal of Engineering and Applied Science*, 67.7 (2020):1729-1746.
6. **Safwat M. Safwat**, Mostafa Mamdouh, Ehab Rozaik, and Hisham Abdelhalim. "Performance Evaluation of Electrocoagulation Process Using Aluminum and Titanium Electrodes for Removal of Urea. " *Desalination and Water Treatment*, 191 (2020): 239-249. <https://doi.org/10.5004/dwt.2020.25616>
7. **Safwat M. Safwat** "Treatment of Real Printing Wastewater using Electrocoagulation Process with Titanium and Zinc Electrodes." *Journal of Water Process Engineering*, 34 (2020): 101137. <https://doi.org/10.1016/j.jwpe.2020.101137>
8. **Safwat M. Safwat**, and Minerva E. Matta. "Performance Evaluation of Electrocoagulation Process Using Zinc Electrodes for Removal of Urea." *Separation Science and Technology*, 55.14 (2020): 2500-2509. <https://doi.org/10.1080/01496395.2019.1636067>
9. **Safwat M. Safwat** "Performance Evaluation of Paroxetine Adsorption Using Various Types of Activated Carbon." *International Journal of Civil engineering*, 17 (2019): 1619–1629. <https://doi.org/10.1007/s40999-019-00431-4>
10. **Safwat M. Safwat**, Mohamed Medhat, and Hisham Abdelhalim. "Adsorption of Phenol onto Kaolin and Fuller's Earth: A Comparative Study with Bentonite. " *Desalination and Water Treatment*, 155 (2019):197-206. <https://doi.org/10.5004/dwt.2019.24051>
11. Radwa Hanafy, **Safwat M. Safwat**, Ehab Rozaik, Khaled Zaher. "Upgrading Conventional Activated Sludge System Using Bio-media: A Case Study of Zenin Wastewater Treatment Plant, Egypt." *Civil and Environmental Research*, 11.1 (2019): 29-38. <https://doi.org/10.7176/CER/11-1-05>
12. **Safwat M. Safwat** "Coupling Microbial Fuel Cells with Electrocoagulation Cells to Form an Integrated System for Wastewater Treatment." *Polish Journal of Environmental Studies*, 28.3 (2019): 1909-1915. <https://doi.org/10.15244/pjoes/89543>
13. **Safwat M. Safwat**, Ahmed Hamed, and Ehab Rozaik. " Electrocoagulation/ Electroflotation of Real Printing Wastewater Using Copper Electrodes: A Comparative Study with Aluminum Electrodes." *Separation Science and Technology* 54.1 (2019): 183-194. <https://doi.org/10.1080/01496395.2018.1494744>
14. **Safwat M. Safwat**, Mohamed Medhat, and Hisham Abdelhalim. "Adsorption of Phenol onto Aluminum Oxide and Zinc Oxide: A Comparative Study with Titanium Dioxide. " *Separation Science and Technology*, 54.17 (2019): 2840-2852. <https://doi.org/10.1080/01496395.2018.1549572>
15. **Safwat M. Safwat**, Ehab Rozaik, and Hisham Abdelhalim. "A comparative study on treatment of wastewaters with various biodegradability and various pH values using single-chamber microbial fuel cells. " *Water and Environment Journal*, 33.3 (2019): 409-417. <https://doi.org/10.1111/wej.12413>
16. **Safwat M. Safwat**, and Minerva E. Matta. "Adsorption of Urea Onto Granular Activated Alumina: A Comparative Study with Granular Activated Carbon." *Journal of dispersion science and technology* 30.12 (2018): 1699-1709. <https://doi.org/10.1080/01932691.2018.1461644>
17. **Safwat M. Safwat** "Performance of Moving Bed Biofilm Reactor Using Effective Microorganisms." *Journal of Cleaner Production*, 185 (2018): 723-731. <https://doi.org/10.1016/j.jclepro.2018.03.041>
18. **Safwat M. Safwat**, and Ehab Rozaik. "Growth Inhibition of Various Pathogenic Microorganisms Using Effective Microorganisms (EM)." *International Journal of Research and Engineering* 4, no. 12 (2018): 283-286.

19. **Safwat Ahmed**, Ehab Rozaik, and Hisham Abdelhalim. "Performance of Single-Chamber Microbial Fuel Cell Using Different Carbohydrate-Rich Wastewaters and Different Inocula." *Polish Journal of Environmental Studies*, 25.2 (2016): 503-510. <https://doi.org/10.15244/pjoes/61115>
20. **Safwat Ahmed**, Ehab Rozaik, and Hisham Abdelhalim. "Effect of Configurations, Bacterial Adhesion, and Anode Surface Area on Performance of Microbial Fuel Cells Used for Treatment of Synthetic Wastewater." *Water, Air, & Soil Pollution* 226.9 (2015): 1-13. <https://doi.org/10.1007/s11270-015-2567-3>
21. **Safwat Ahmed**, Hisham Abdelhalim, and Ehab Rozaik. "Treatment of Primary Settled Wastewater Using Anaerobic Sequencing Batch Reactor Seeded with Activated EM." *Civil and Environmental Research* 3.11 (2013): 130-136.

CONFERENCES AND WORKSHOPS

- **Safwat M. Safwat**, and Nouran Yousri. "Adsorption of Phenol from Aqueous Solutions Using Aluminum Oxide Nanoparticles: Kinetics, Equilibrium, and Thermodynamics." The 12th Eastern European Young Water Professionals Conference (April 2021): *Oral Presentation*.
- Omar Shaker, **Safwat M. Safwat**, Minerva E. Matta. "Performance Evaluation of Electrocoagulation for the Removal of Nickel and Chromium from Wastewater Using Zinc Electrodes." The 12th Eastern European Young Water Professionals Conference (April 2021): *Oral Presentation*.
- Laboratory training on Water quality analysis, High Performance Liquid Chromatography, & Gas Chromatography (Mar. 2022).
- Workshop addressing Gas Chromatography – Mass Spectrometry (Jun. 2021).
- Workshop addressing Nanoparticles: Formulation and Characterization (Feb. 2021).
- Workshop addressing PRIMA 2021 work program (Feb. 2021).
- Workshop addressing High Performance Liquid Chromatography – Advanced Level (Nov. 2020).
- Workshop addressing High Performance Liquid Chromatography – Basic Level (Nov. 2020).

AWARDS

- Cairo University Annual Award for international scientific publishing, Egypt, (2015, 2016, 2018 till 2021).
- Faculty of Engineering Award for the best assistant lecturers, Cairo University, Egypt, (2016).
- Public Works Department Award for the best assistant lecturers, Cairo University, Egypt, (2015 & 2016).
- A scholarship by Cairo University to complete my PhD Degree, Egypt, (2013-2016)
- A scholarship by Cairo University to complete my M.Sc Degree, Egypt, (2009-2012)
- Faculty of Engineering Annual Undergraduate Award for my high grades (Distinction) in Civil Engineering Department, Cairo University, Egypt, (2005-2009) - (Dean list).

TRAINING COURSES

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|---------------------------------|---|
| • Effective Presentation Skills | • Legal & Financial Aspects in University Environment |
| • E-Learning | • Use of Technology in Teaching |
| • Quality Standards in Teaching | • Examination Techniques & Students Evaluation |
| • University Management | • Strategic Planning |
| • University Code of Ethics | • International Publishing of Scientific Research |
| • Conference Organization | • Meetings & Managing Time |
| • Crisis Management | • Arabic & English Editing In Scientific Research |
| • Team Work | • Competing for Research Funds |
| • Positive Thinking | • Statistical Analysis of Bio-Experiments |
| • Negotiation Skills & Tactics | • Stress Management |
| • Critical Thinking | |

PROFESSIONAL MEMBERSHIPS

- * Member of Federation of Arab Engineers (2010 – Present)
- * Member of Engineers Syndicate of Egypt (2010 – Present)
- * Member of Project Management Institute (PMI), USA. [Member ID: 6538002](#) (2020)
- * Member of International Water Association (IWA), UK. [Membership Number: 1625016](#) (2021 – 2022)

COMPUTER SKILLS

- Microsoft Office (Word, Excel, and PowerPoint)
- WaterGEMS
- AutoCAD Civil 3D
- Bentley HAMMER
- AutoCAD
- SewerCAD
- Primavera
- BioWin for WWTP Modeling

LANGUAGES

- Arabic : Fluent (Native)
- English : Excellent

REFERENCES

To be furnished upon request.