

## Curriculum Vitae (CV)

**Maha Hassan. Abd-Elkreem**



### Personal Information:

**Academic Rank:** Professor

**Department:** Chemical Engineering

**Specialization:** Modeling and Simulation in Mass and Heat Transfer Processes

**Position:** Chairman of the Chemical Engineering Department Council

**Google Scholar:**

<https://scholar.google.com/citations?user=2YmO2rQAAAAJ&hl=en&oi=ao>

**Research Gate:**

[https://www.researchgate.net/profile/Maha-Abdelkreem?ev=hdr\\_xprf](https://www.researchgate.net/profile/Maha-Abdelkreem?ev=hdr_xprf)

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## Education

Degree	Discipline	Institution	Year
Ph.D.	Modeling and Simulation in Adsorption Process	Cairo University, Faculty of Engineering	2003
M.Sc.	Modeling and Simulation in Adsorption Waste water Process	Cairo University, Faculty of Engineering	1997
B.Sc.	Chemical Engineering	Cairo University, Faculty of Engineering	1993

## Academic Experience:

### Research interests:

**Modeling and Simulation in Mass and Heat Transfer Processes**

**Modeling and Simulation in Environmental applications**

**Water and waste water treatment**

**Recycling of industrial wastes**

**Sustainability of materials**

### Publications:

1. Hosam A. Nabwey, **Maha Abdelkreem**, Maha A. Tony, and Noha F. Al Hoseny, Smart Win-Win Waste Management: Superhydrophobic filter using Volorized Cellulose Acetate from Discarses Cigarette butts for Cleaning up Marine Oil Spill at Hurghada Red Sea Shore in Egypt, Frntiers in Marine Science, 2024.
2. Heba A. El- Gawada\*, MontaserY.Ghalyb,c, N. F.El Hussienyd, , **M.Abdel kreem**, Y.Redab, Novel Collector Design and Optimized Photo-Fenton Model for Sustainable Industry Textile Wastewater Treatment, Scientific Reports | (2024) 14:8573.
3. R. A. Rezk, Z. Abdel-Salam, N. A. Abdel Ghany, **M. Abdelkreem**, M. Abdel-Harith, LIBS and pXRF validation for the removal of Pb by bio-CaCO<sub>3</sub> nanoparticles from contaminated water, SN Applied Sciences 2022.
4. Yasmin El-Dakrory, Mahmoud Sliem, **Maha Abdelkreem**, Salah Hassab Elnaby & Reham Rezk, Laser induced fluorescence detection of R6G dye adsorbed on Fe<sub>3</sub>O<sub>4</sub> nanomaterial's, Journal of Applied Water Engineering and Research 2022.

5. A. Elhassan, M. Abdelhamid, **M. Abdelkreem**, M. A. Harith, Using LIBS for monitoring and estimation of heavy elements in industrial wastewater during its remediation, “accepted ICPAP 2021 conference proceeding, AIP. Under Publication.
6. Soliman, T. Heakal, **M. Abdelkreem** and H. A.Sibak, Process Optimization of Mono Phosphate Calcium (MCP) Production by Acidulation of Egyptian Phosphate Ore with Phosphoric Acid, paper Submitted to Chemical Engineering Journal.
7. Taher Elshiekh, **M. Abdelkreem**, SalahKhalil, Ahmed Al-Sabagh, Optimization of Petroleum Crude Oil Treatment Using Hydrogen Sulfide Scavenger, Egyptian Journal of Petroleum, April, 2019.
8. R.A. Rezk, A.H. Galmed, **M. Abdelkreem**, N.A. Abdel Ghany, M.A. Harith, Detachment of Cu (II) and Co (II) ions from synthetic wastewater via adsorption on Lates niloticus fish bones using LIBS and XRF, Journal of Advanced Research, S2090-1232(18)30057-2, 2018.
9. M. I. A. A. Belal, M. M. Sadawy, **M. Abdelkreem**, A. A. Omar, Adsorption and Corrosion Inhibition Characteristics of EDTA on Carbon Steel in Acidic Environments, The Six International Conference (34<sup>th</sup> Annual) Corrosion Mitigation and Surface Protection, Hurghada, Egypt, December 2017.
10. Hussein Abdel-Aal, **M. Abdelkreem**, K. M. Zohdy, Seawater Bittern a precursor for Magnesium Chloride Separation: Discussion and Assessment of Case Studies, International journal of Waste Resources, accepted for publication, November 2017.
11. A. TALAAT, **M. Abdelkreem**, E. ASHOUR, and A. ABDELSATTAR, Comparative Study of Congo Red Adsorption Using Different Modifications of Rice Straw, Yanbu Journal of Engineering and Science, vol. 14, June 2017.
12. Hussein Abdel and **M. Abdelkreem**, K.M. Zohdy, Dual-purpose Solvay-Dow (Magnesium) conceptual process, open access library journal, 3, e2998,2016.
13. Hussein Abdel and **M. Abdelkreem**, Challenges and progress in methane conversion, chemical engineering, 1, 1-11, 2016.
14. A. TALAAT, **M. Abdelkreem**, E. ASHOUR, and A. ABDELSATTAR, “Comparative study of methylene blue adsorption using (raw, acid, base, modified, magnetite loaded) rice straw,” *J. Int. Acad. Res. Multidiscip.*, vol. 4, no. 8, pp. 29–47, 2016.
15. R.A. Rezk, A.H. Galmed, **M. Abdelkreem**, N.A. Abdel Ghany, M.A. Harith, Quantitative analysis of Cu and Co adsorbed on fish bones via laser- induced breakdown spectroscopy, Optics & Laser Technology, 83, 131-139, 2016.
16. Hesham M. Mostafa, , **M.Abdelkreem**, Effects of pulsating flow on the evaporation rate from water surface, international journal of advance research in science and engineering, IJARSE, Vol. No.4, Issue 05, May2015.

17. KhaledZohdy, **MahaAbdelkreem**, and Hussein Abdel- Aal, Separation of magnesium chloride from sea water by preferential salt separation (PSS), International journal of bioassays, 2013.
18. **M. Abdelkreem**, Adsorption of Phenol from Industrial Wastewater Using Olive Mill Waste, Journal of APCBEES Procedia (2013), Elsevier.
19. M.M.Sadawy, K.M. Zohdy, **M. Abdelkreem**, Corrosion Inhibition of Carbon Steel in Hydrochloric Acid Solution by EDTA, International Journal of Nlectrochemical Science, 2013
20. Hussein Abdel-Aal, KhaledZohdy, **MahaAbdelkreem**, S. M.-S Abdel-Hamid and M. Bassyouni, A Novel Application in Green Chemical Processing Using Reject Brines and Carbon Dioxide as Raw Materials, Scientific Research, engineering, 2012.
21. Mohamed Heikal, K. M. Zohdy, **M. Abdelkreem**, Mechanical microstructure and rheological characteristics of high performance self- compacting cement pastes and concrete containing ground clay bricks, constructing Building Materials, 2013.
22. Hussein Abdel-Aal, M. Bassyouni, **MahaAbdelkreem**, Shereen Abdel-Hamid, Feasibility Study for a Solar-Energy Stand-Alone System: (S.E.S.A.S.), smart grid and renewable energy journal, 2012.
23. **M. abdelkreem**, Dalal Z. Husein, Removal of strontium from aqueous solutions by adsorption onto orange peel: isotherms, kinetics, and thermodynamic studies, Egyptian journal of environmental research, 2012.
24. O. M. A.bdo-Elenien, K. Zohdy, **M. Abdelkreem**, Electrochemical studies of adsorption and inhibition effect of new synthesized triazinane-amide derivatives on cold rolled steel in 0.5 M HCl, journal of radiation research and applied Science, 2012.
25. H. H. sokker, **M. Abdelkreem**, K. M. Zohdy , M. M. Younes, preparation of 2-acrylamido-2-methyl prpane-1- sulfonic acid/ bentonite composite hydeo-gel by radiation polymerization for adsorption of basic violet dye from aqueous solution, journal of radiation research and applied Science, 2010.
26. Hussein Abdel - Aal , K. M. Zohdy and **Maha Abdel- Kreem**, Production of Hydrogen from Sea Water Electrolysis, The open fuel cell journal, Vol. , 2010.
27. Hussein Abdel - Aal, M. Bassyouni, Shereen M.-S. Abdel-Hamid and **Maha Abdel- Kreem**, Resources of Fossil and Non-Fossil Hydrogen in the Middle East Can Make Fuel Cells an Attractive Choice for Transportation: A Survey Study. , WHEC 2010, May (16-19), Essen, Germany.
28. Hussein Abdel-Aal, KhaledZohdy, M. Bassyouni , S. M.-S Abdel-Hamid, **MahaAbdelkreem**, Maher Soliman, Discharge waste brine management for desalination plants, 10<sup>th</sup> international conference on clean energy (ICCE 2010), September 15-17, Famagusta, North Cyprus.
29. O. M. A.bdo-Elenien, K. Zohde, **M. Abdel-Kreem**, and O. Elazabawy, Corrosion Inhibition and Adsorption behavior of new 2,3bis-((2-aminoethoxy)Dimethylsilyloxy)-N-(2-(2-aminoethylamino)ethyl)-4,5,6-trihydrox-2-enamide(AEDSHE) on carbon steel surfaces in 0.5 M hydrochloric acid, materials science,5,2009.

30. **Maha Abdel-Kreem**, M. Bassyouni, Shereen M.-S. Abdel-Hamid and Hussein Abdel-Aal, The Role of GTL Technology as an Option to Exploit Natural Gas Resources, The open fuel cell journal, Vol. 2, 5-10, 2009.
31. Mahdi. A. N., A. Soliman, **M. Abd El-kreem** and T. Heakal, Determination of Optimum Operating Conditions for Egyptian Phosphate Rock Extraction by Phosphoric Acid, TESCE, Vol. 34, No. 41, Nov. 2008.

### Certifications or Professional Registrations:

- 12<sup>th</sup> International Conference (40<sup>th</sup> Annual Conference) on Corrosion Mitigation and Surface Protection Technologies, 16-19 December 2024, Island view Resort- Sharm Elshikh- Egypt.
- 11<sup>th</sup> International Conference on Green Chemical Engineering, (Effect of Energy Conversion on Environmental Protection with sustainable development, 1-3 July, 2024, Cairo- Egypt.
- 11<sup>th</sup> International Conference (39<sup>th</sup> Annual Conference) on Corrosion Mitigation and Surface Protection Technologies, 11-14 December 2023, Hawaii Paradise Hotel, Hurghada- Egypt.
- The international conference on Pure and applied physics, December 2021 academy of scientific research & Technology Egypt.
- 9<sup>th</sup> International Conference (37<sup>th</sup> Annual) on Corrosion Mitigation and Surface Protection Technologies, 13-16 December 2021, Steigenberger Hotel- Luxor-Egypt.
- International Webinar on Science, Sustainable Development and Ecosystems in Saudi Arabia 2021, April 2021, IAU, Al Khobar, KSA.
- 8<sup>th</sup> International Conference (36<sup>th</sup> Annual) on Corrosion Mitigation and Surface Protection Technologies, December 2020, -Egypt.
- The First international conference on energy, Egypt. A Promising Energy Hub –Opportunities and Challenges, Cairo, December, 18-19/2017, Egypt.
- The Six International Conference (34<sup>th</sup> Annual) Corrosion Mitigation and Surface Protection, December 2017, Hurghada, Egypt.
- The National Erasmus+ Day, December 2017, Cairo, Egypt. of The first international conference, Egypt Nano photonics; Nano photonics and material, September 10-13 August 2016; Hurghada, Egypt.
- The first Arabian Conference for climate changes about green economics is the way for development, Cairo, June 2014.
- The 4<sup>th</sup> International Conference for Environmental Science and Development, Dubai, Jan. 2013.

- The Arabian Conference of Industrial Applications of Nano Technology, Japan University of Science and Technology, December 2011, Egypt.
- Workshop in Nanotechnology-based Economy and its Applications, Nano Tech., Hilton Dream Land, June 2011, 6<sup>th</sup> of October, Egypt.
- Conference of Scientific Research and Industry, August 2011, Higher Technological Institute (HTI), 10<sup>th</sup> of Ramadan, Egypt.
- Research Industry Day: From Lab to Reality Seminar, July 2011, Bibliotheca Alexandria.
- The first Council of Engineering Sciences conference, June 2011, Cairo, Egypt.
- The 8<sup>th</sup> International Conference of laser Applications, May 2011, Cairo, Egypt.
- The 5<sup>th</sup> International Conference of Chemical Engineering, Military Technical College, May 2010, Cairo, Egypt
- The 8<sup>th</sup> International Conference of Chemical Engineering, Nov. 2008, Cairo, Egypt.
- The 4<sup>th</sup> International Conference of Chemical Engineering, Military Technical College May 2008, Cairo, Egypt.
- International Conference on Parametric Optimization and Related Topics, HTI - Cairo, 2005.
- The 7<sup>th</sup> International Conference of Chemical Engineering, Dec. 2004, Cairo.

## COURCES

- Sustainable development, July 2024, Faculty and Leadership Development Center, Cairo University.
- University administration, June 2024, Faculty and Leadership Development Center, Cairo University.
- Digital Transformation, April 2024, Faculty and Leadership Development Center, Cairo University.
- External audit of quality systems, Mars 2024, Faculty and Leadership Development Center, Cairo University.
- First aid, January 2024, Faculty and Leadership Development Center, Cairo University.
- Reviewing laboratory systems, December 2023. Higher Technological Institute, November 2023.
- Safety in chemistry laboratories, Higher Technological Institute, November 2023.
- 1<sup>st</sup> of December 2021 "Constructive Assessment for Learning", DAAD Kairo Akademia.
- 21<sup>st</sup> of November 2021 "Fundraising skills and best practices ", DAAD Kairo Akademia.

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- ~~28<sup>th</sup> of October 2021 "Taking your classroom online", DAAD Kairo Akademia.~~
- 21<sup>st</sup> of October 2021 "University exams and digital question banks", DAAD Kairo Akademia.
- Management and Leadership Skills Training Program (MLSTP) for Women, Part 2, March 2015, MLSTP, Faculty of Engineering , Cairo university
- Self-Marketing, December 2014, DAAD **Kairo Akademie.**
- Self-Institutional Assessment to Higher Education Institutions, Nov. 2014, National Authority for quality Assurance and Accreditation of Education.
- How to Present Scientific Data, June 2014, DAAD **Kairo Akademie.**
- *Interactive Lectures*, **May 2014**, DAAD **Kairo Akademie.**
- Proposal Writing Post Docs, April 2014, DAAD **Kairo Akademie.**
- Scientific Thinking and Argumentation Skills for Problem Solving, March 2014, DAAD **Kairo Akademie.**
- Management and Leadership Skills Training Program (MLSTP) for Women, March 2014, MLSTP, Faculty of Engineering , Cairo university
- Emotional Intelligence & Career Development Agenda, September 2013, Info Research Center, U.S. Embassy Cairo and Goal Oriented Learners.
- Tools for Self-Marketing, Career Development Workshop, June 2013, Info Research Center, U.S. Embassy Cairo and Goal Oriented Learners.
- Path Ways to Higher Education, Faculty of Engineering, Cairo University (APSCU), Training of Trainers (TOT), 2013
- University Code of Ethics, July 2012, Faculty and Leadership Development Center, Cairo University.
- Conference Organization, August 2012, Faculty and Leadership Development Center, Cairo University.
- Effective Presentation Skills, August 2012, Faculty and Leadership Development Center, Cairo University.
- Quality Standards in Teaching, August 2012, Faculty and Leadership Development Center, Cairo University.
- Exams and students Evaluation Systems, September 2012, Faculty and Leadership Development Center, Cairo University.



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- Competing for Research Funds, September 2012, Faculty and Leadership Development Center, Cairo University.
- Strategic Planning for Higher Education Foundations, March 2012 National Authority for quality Assurance and Accreditation of Education.
- Self-Institutional Assessment to Higher Education Institutions (Administrative Affairs), June 2010, National Authority for quality Assurance and Accreditation of Education.
- Learning Outcomes and Curriculum Map, May 2010, National Authority for quality Assurance and Accreditation of Education.
- Training programs for higher education institutions [Integrated Packages (Seven courses- three weeks)], National Authority for quality Assurance and Accreditation of Education, 2009.

## **Teaching Experience:**

- **Teaching in chemical engineering department, physical chemistry course, Faculty of engineering, British University, Cairo (BUE), 2014/2015.**
- **Teaching a course on, kiln process and operation, Cement Engineering Diploma FL Smidth - Helwan University, 2015.**
- **Teaching a Course on “Separation Technologies”, several times, under GTZ, Center of Training, Higher Technological Institute, Tenth of Ramadan City, Egypt.**
- **Teaching a Course on "Introduction to Environmental Engineering and Evaluating the Environmental Impact", Center for Environmental Research and Studies (CERS), 2011, Cairo University, Egypt.**
- **Teaching a Course on “Unite Operations”, several times, under GTZ, Center of Training, Higher Technological Institute, 2011, Tenth of Ramadan City, Egypt.**
- **Teaching a Course on” Chemical Engineering Process Design” ,under GTZ Center of Tanning Higher Technological Institute, 2010, Tenth of Ramadan City, Egypt.**
- **Teaching a Course on “Pollution Prevention”, several times, under GTZ, Center of Training, Higher Technological Institute, 2010, Tenth of Ramadan City, Egypt.**
- **As a certified trainer from International Labor Organization, (ILO) from 2013- 2025, teaching workshops on strategic planning, team work, team building, time management, accreditation systems, risk management, stress management, entrepreneurship, management of small and medium projects, communication skills, presentation skills, feasibility studies for projects,**



- 10th of Ramadan City Recycling, etc., in many universities as Cairo University, Helwan University, Fayoum University, Aswan University..., and many institutes under the supervision of Ministry of Higher Education.

## **Academic Experience in HTI**

### **Professor, Jan. 2019, present**

Permanent scientific Committee, Supreme Council of Universities.

Chemical Engineering Department, Higher Technological Institute, Tenth of Ramadan City, Egypt.

#### **Teaching the following courses:**

1. Petroleum refining.
2. Graduation projects.
3. Mass Transfer and transport phenomenon.
4. Plant design and economics.
5. Water and wastewater treatment.
6. Vessel design.

### **Associate professor, 2013-2018**

Chemical Engineering Department, Higher Technological Institute, Tenth of Ramadan City, Egypt.

#### **Teaching the following courses:**

1. Industrial pollution and control (mechatronics, mechanical Eng. and automotive Eng.).
2. Mass Transfer and transport phenomenon.
3. Plant design and economics.
4. Water and wastewater treatment.
5. Vessel design.
6. Petroleum engineering and refining.
7. Supervising undergraduate projects in different areas as waste recycling and reuse, process design and modifications, waste water treatment and reuse, energy recovery, production of green hydrogen, production of biodiesel, Desalination, and many others.
8. Supervising industrial training programs in different industries.

Teaching the following courses:

1. Mass Transfer and transport phenomenon.
2. Process control.
3. Plant design and economics.
4. Water and wastewater treatment.
5. Introduction to chemical engineering (material and energy balance).
6. Vessel design.
7. Industrial pollution and control (mechatronics, mechanical Eng. and automotive Eng.).
8. Industrial chemistry.
9. Chemistry laboratory.
  - Supervising undergraduate projects.
  - Supervising industrial training programs.

**Assistant Lecturer,** Aug. 1998 – Oct. 2003

Chemical Engineering Department, Higher Technological Institute, Tenth of Ramadan City, Egypt.

- Taught and assisted in the following courses:
  1. Reactor design & Chemical reaction engineering course.
  2. Process heat transfer.
  3. Chemical engineering thermodynamics
  4. Plant design end economics.
  5. Water and waste water treatment.
  6. Chemical Eng. calculations (biomedical Eng.).
  7. Chemical engineering laboratory.
    - Supervising undergraduate projects.
    - Supervising industrial training programs.

**Demonstrator,** Oct. 1993 – July 1997

Chemical Engineering Department, Higher Technological Institute, Tenth of Ramadan City, Egypt.

- Taught and assisted in the following courses:
  1. Chemical engineering thermodynamics.
  2. Automatic and process control.
  3. Mechanical unit operations.
  4. Corrosion engineering.
  5. Petroleum and fuel engineering.
  6. Computer aided design.
  7. Physical chemistry.
    - Supervising undergraduate projects.
    - Supervising industrial training programs.

## Computer, Programming and Management Skills

- Extensive programming tools, that includes:
  - Building optimization programs for rate parameters estimation based on gradient and non-gradient methods.
  - Building programs for the determination of the possible elementary steps in complex adsorption-desorption network and other processes.
  - Building programs for the solution of boundary value problems for adsorbent pellet using orthogonal collocation technique.
- Teaching with simulation packages (HYSIS) & Mat lab, Simulink.
- Management Training courses in many subjects as:
  - Strategic Planning.
  - Risk Assessment.
  - Risk Management.
  - Supervisory Skills.
  - Inter-personal Management Skills.
  - Leadership Skills and Team Building.
  - Business Etiquette.
  - Managing Time & Meeting.
  - Ethical Conduct and Code of Ethics.
  - Effective Teaching and Presentation Skills.

## Managing Activities:

- **Head of Chemical Eng. Dept., Higher Technological Institute**, 10<sup>th</sup> of Ramadan City, 2016- Present.
- **Vice Dean of the Higher Technological Institute for Education and Student Affairs**, 10<sup>th</sup> of Ramadan City and branches, 2019- 2022.
- **Vice Dean of the Higher Technological Institute for Community Service and Environmental Development**, 10<sup>th</sup> of Ramadan City and branches, 2019- 2022.
- **Supervisor of Scientific Research and Culture relation**, Higher Technological Institute, 10<sup>th</sup> of Ramadan City and branches, 2012- 2022
- **Supervisor of Environmental Service Center unit, Chemical Engineering Department, Higher Technological Institute**, 10<sup>th</sup> of Ramadan, 2016-2023
- **Acting as Dean of Higher Technological Institute**, 10<sup>th</sup> of Ramadan, 6<sup>th</sup> of October branch, Oct.2013- Mars 2014
- **Supervisor of Higher Technological Institute**, 10<sup>th</sup> of Ramadan, 6<sup>th</sup> of October branch, Oct.2012- Oct. 2013
- **Quality Assurance Center manager**, 2010- 2014.
- **Official standard** programs and Alorteurarat in Quality Assurance center.
- **Official standard internal audit** in Quality Assurance center.
- **Supervisor of preparatory year**, 2003-2014.
- **Head of Basic Science Department**, 2006-2008, 2010-2014.