

CURRICULUM VITAE

Fakiha El-Taib Heakal, Ph.D



1. PERSONAL DATA

Name: Fakiha Mohamed El-Taib Heakal

Title: Professor of Physical Chemistry of Advanced Materials

Affiliation: Professor (Emeritus), Faculty of Science, Cairo University, EGYPT

Telephone: Mobile (+201002449048), home (+20237488473). **Fax:** +20235728099

E-mail: hfakiha@cu.edu.eg; hfakiha@sci.cu.edu.eg; feltaibheakal@gmail.com; fakihaheakal@yahoo.com

Websites: Scopus author homepage: Heakal, Fakiha El-Taib; Author ID: **57209298360**

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57209298360>

ORCID: <http://orcid.org/0000-0002-4398-6194>

CU Scholar: <http://scholar.cu.edu.eg/?q=fakihaheakal/>

Google Sch: <http://scholar.google.com/citations?user=psvKyXkAAAAJ&hl=en>

Publons: <https://www.webofscience.com/wos/op/peer-reviews/summary>

2. EDUCATION

- **B.Sc.:** Special chemistry, Distinction with 1st class honor, Faculty of Science, Cairo University, 1965.
- **M.Sc.:** Physical Chemistry (Electrochemistry), Faculty of Science, Cairo University, 1972.
- **Ph.D.:** Physical Chemistry (Electrochemistry), Faculty of Science, Cairo University, 1977.

3. STUDY VISITS

- **March to December 1977:**

Attended a full-time graduate course in “Research Techniques in Chemistry” at New South Wales University and Sydney University, Sydney, Australia.

- **September 1978 to October 1979:**

Attended a full-time Diploma of “the international post-graduate university course in chemistry and chemical engineering” at Tokyo Institute of Technology, Tokyo, Japan.

- **September to November 1995:**

Visiting professor to the School of Physical Chemistry at Carl von Ossietzky Universität, Oldenburg Germany, funded by DAAD foundation.

4. FELLOWSHIPS, DIPLOMAS, AND AWARDS

1977: Research Techniques in Chemistry, New South Wales University, Sydney, Australia.

1979: The International Post-Graduate University Course in Chemistry and Chemical Engineering, Tokyo Institute of Technology (TIT), Tokyo, Japan.

1979: Awarded the Diploma in Corrosion and Electrochemical Engineering, TIT, Tokyo, Japan.

2007: Nomination in the year 2000, and for the 25th Silver Anniversary Edition of *Who's Who* in the World, published in November 2007, and till present.

2008: Cairo University Prize for Scientific Superior in Basic Sciences.

2009: The best Ph.D. thesis entitled: “Electrochemical and Corrosion Behavior of the Magnesium Alloy AZ91D in Aqueous Solutions”, under my single supervision, Faculty of Science, Cairo University.

2012: State Excellence Award in the Field of Basic Sciences.

2016: Cairo University Appreciation Award in Advanced Technological Sciences.

2020: AU KWAME NKRUMAH Award for Scientific Excellence in Science, Technology, and Innovation, Regional Awards for Women.

2021: Cairo University Excellence Award in Advanced Technological Sciences.

2022: Woman's Appreciation State Award in Water, Energy, Environmental Sciences, Science, and Engineering.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- Recognized as one of the **top 2% impactful scientists in Stanford University** Report: Elsevier October **2020, 2021, 2022, and 2023.**
- International Society of Electrochemistry (**ISE**).
- Royal Society of Chemistry (**RSC**).
- American Chemical Society (**ACS**).
- The Marquis **Who's Who** in the World Family, LLC, NJ- USA.
- Egyptian Corrosion Society of Metals and its Protection (**ECS**).
- Egyptian Chemical Society.
- Egyptian Syndicate of Scientific Professions.
- Egyptian Materials Research Society (**Eg-MR Soc**).
- National Committee of Soil Science (**NCSS**), Academy of Scientific Research and Technology (ASRT).

5. SCIENTIFIC PUBLISHING ASSOCIATIONS

- Member of the Editorial Board of a Cell Press Journal “**Heliyon**”.
<https://www.cell.com/heliyon/editors#Toc092519100>
- Member of the Editorial Board of “**Engineering Science**”, Science Publishing Group Journal.
<http://www.sciencepublishinggroup.com/j/es>
- Member of the Editorial Board of “**Sustainable Chemical Engineering**”, Universal Wiser Publisher.
<https://ojs.wiserpub.com/index.php/SCE/about/editorialTeam>

6. TEACHING VISITS

- 1980-1985:** Teaching and post-graduate research work deputized to “*Girls Education College*” at Jeddah, Kingdom of Saudi Arabia.
- 1989- 1990:** Visiting Professor for the first semester at the same previous College.
- 1990-1992:** Teaching and post-graduate research work deputized to “*Girls Education College*” in Riyadh, Kingdom of Saudi Arabia.
- 1994-1995:** Visiting Professor to develop and teach the Physical Chemistry courses for the first Semester at “*Girls Education College*” in Abha, Kingdom of Saudi Arabia.
- 1996-1999:** Teaching and post-graduate research work deputized to “King Abdul-Aziz University, Girls Section” at Jeddah, Kingdom of Saudi Arabia.

7. RESEARCH INTERESTS

- Characterization of electrochemical and Corrosion behavior of metallic materials and finding practical solutions for their protection against corrosion with green organic inhibitors or surface Nano-coatings, using the EIS-based method and other conventional electrochemical techniques, as well as surface characterization analyses and theoretical calculation based on DFT and molecular modeling study.
- Investigating the stability of spontaneous native and anodic oxide thin films on surfaces of valve metals (Ti, Zr, Al, W, and Bi), and active metals (such as Mg and Zn) and on their alloys in aqueous media. Also, the role of various electrical or environmental test parameters that control the semiconducting characteristics of such films. Also, synthesize some newly wound dressing nanomaterials.
- Effect of media on the adsorption and orientation of some important organic compounds (such as adenosine and coumarin), as well as on the reduction of some metallic cations at the dropping mercury electrode/solution interface using dc polarography with superimposed ac voltage differential capacitance technique.
- Degradation behavior of different Mg alloys in various physiological bio-fluid for industrial and biomedical applications.
- Based nanomaterials for the fabrication of powerful energy storage/delivery systems via supercapacitors or electrochemical capacitors (ECs) with much high specific power and energy density.
- Developing new nanostructured electrocatalysts for hydrogen generation and fuel cell applications.

8. EVALUATE AWARDS

As I was awarded the **Cairo University Award of Appreciation** in The Advanced Technological Sciences (2016), the **State Excellence Award** in the Field of Basic Sciences (2012), and the **Cairo University Superiority Award** in Basic Sciences (2008), in recognition of my research work in chemistry, I have been selected since 2009 to evaluate the scientists applying for reward in chemistry at Cairo University and the other Egyptian universities.

9. SUPERVISION

A total of **50 (M.Sc. and Ph.D.)** theses for Egyptian, Saudi Arabian (1+1), and German (1) candidates on different topics in the field of electrochemistry, metallic corrosion, and its inhibition, semiconductor properties of passive metals, biomaterials, and degradable biomaterials, electrochemical and bio-electrochemical sensors, energy storage/delivery supercapacitors, hydrogen generation, and fuel cells, as well as other various fields in applied materials chemical research.

10. REVIEWER

Reviewer for several prestigious scientific international journals (*see Publons link*). Examples are:

- Corrosion Science, **Elsevier** - England.
- International Journal of Hydrogen Energy, **Elsevier** - England.
- International Journal of Electrochemical Science, Beograd, Republic of Serbia.
- Materials Science & Engineering B, **Elsevier** - Netherlands.
- Materials Science & Engineering C, **Elsevier** - Netherlands.
- Materials Chemistry and Physics, **Elsevier** - Switzerland.
- Materiali in Technologije (MIT) / Materials and Technology, Slovenia.
- RSC Advances, **Royal Society of Chemistry**, England.
- New Journal of Chemistry, **Royal Society of Chemistry**, England.
- Arabian Journal for Science and Engineering, **Springer**, Saudi Arabia.
- Recent patents on Corrosion Science. [www.benthamscience.com/open/rptcs/]
- Scientific Research and Essays (SRE). [www.academicjournals.org/SRE]
- Journal of Solid-State Electrochemistry, **Springer** - Germany.
- Journal of Applied Electrochemistry, **Springer** - Netherlands.
- International Journal of Physical Science (IJPS). [www.academicjournals.org/IJPS]
- Industrial & Engineering Chemistry Research (**ACS**).
- Corrosion (**NACE**), USA.
- Materials and Corrosion, **Wiley**, Germany.
- Journal of Alloys and Compounds, **Elsevier**, Switzerland.
- Ionics, **Elsevier**, Germany.
- Transaction of Nonferrous Metals, Society of China.
- Anti-Corrosion Methods and Materials, **Emerald**, England.
- Applied Materials & Interfaces, RSC, USA.
- Journal of Materials Engineering and Performance (ASM), **Springer**, USA.
- Advanced Power Technology, **Elsevier**, Japan.
- Progress in Color, Colorants, and Coatings (PCCC), Institute for Color Science and Technology.
- International Journal of Energy Research, **Wiley**, England.
- Material Research Express, **IOP**, England.
- Heliyon, **Cell Press**, U.K.
- Particulate Science and Technology, **Taylor & Francis**, England.
- International Journal of Industrial Chemistry, **Springer**, UK.
- Recent Innovations in Chemical Engineering, Bentham Science Publishers.
- Acta Biomaterialia, **Elsevier**, Netherlands.

- Journal of Power Sources, **Elsevier**, Netherlands.
- Construction and Building Materials, **Elsevier**, England.
- Journal of Physics and Chemistry of Solids, **Elsevier**, United States.
- Journal Electroanalytical Chemistry, **Elsevier**, Netherlands.
- Surface and Coatings Technology, **Elsevier**, Switzerland.
- Journal of Colloid and Interface Science, **Elsevier**, United States.
- Journal of Magnesium and Alloys, **KeAi** - Chinese Roots, Global Impact.
- Journal of Molecular Liquids, **Elsevier**, Netherlands.
- Journal Bioelectrochemistry, **Elsevier**, Netherlands.

12. PROJECT and PROMOTION REVIEWER

- **PI** and **Co-PI** of the research teams of **the STDF running project** no. (46895) and no. (46211).
- Reviewer for more than **15** applied research projects submitted to the **STDF**, Academy of Scientific Research and Technology (**ASRT**), from all Universities and Research centers in Egypt, as well as those submitted to **Cairo University** from Faculties of Science and Engineering.
- Evaluator for the Projects and Journals of **Stem Master School** Students.
- Reviewer in the Supreme Council of Universities (**SCU**), since **1994** in **committee 46** for Promoting Nonorganic Chemistry Staff Members to Associated Professors and Professors (my code no. **1302**).
- **Deputy Manager** of **Committee 46** for Promoting Nonorganic Chemistry Staff Members in **session 14**.

13. TEACHING EXPERIENCE

- Multiple courses were prepared for teaching graduate and undergraduate students in *Cairo and Saudi Universities* as per below:

General Chemistry (101&102 Levels).	Surface Chemistry and Adsorption.
Chemical Thermodynamics.	Quantum Chemistry.
Chemical Kinetics.	Corrosion and its Control.
Heterogeneous Catalysis.	Solid State Chemistry.
Colloids Chemistry.	Environmental Electrochemistry.
Equilibrium Electrochemistry.	Statistical Thermodynamics (for M.Sc).
Dynamic Electrochemistry.	Quantum Electrochemistry (for M.Sc).
Heterogeneous Equilibrium.	Voltammetry (for M.Sc).
Double Layer and Electrode Kinetics.	Electrochemical Methods for Analysis (for
Electrochemical Supercapacitors (for Ph.D.)	Diploma in Analytical Chemistry).

14. LIST OF PUBLICATIONS

- **150** papers have been published in international journals (**117**) and presented at conferences (**33**), please see my Scopus list. Still, there are more papers under preparation for publication. One book in Arabic, **one** book in LAMBERT Academic Publishing (**2018**), and **two** Chapters: One in an **Elsevier Book** (**2019**) and one in **Springer Nature Book** (**2022**).
- **Citation: 2914** **h-index: (Scopus): 31** **(Google Scholar): 33**
- Highly cited papers: (1980) 172; (1983) 41; (2004) 119; (2005) 135; (2007) 42; (2008) 63; (2008) 43; (2009) 110; (2009) 79; (2009) 45; (2009) 39; (2011) 67; (2011) 59; (2011) 77; (2011) 60; (2012) 58; (2017) 79; (2017) 67; (2017) 84; (2017) 146; (2018) 77; (2019) 116; (2019) 89; (2020) 84.