



Dr. Micheal Eshak

Lecturer of Inorganic and Analytical Chemistry

Chemistry Department, Faculty of Science, Assiut University, Assiut - 71516, Egypt (EGY)

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Date of Birth: 1988

Nationality: Egyptian

Scientific key figures

Dr. rer. nat. (Chemistry): 2023

https://scholar.google.com.eg/citations?view_op=list_works&hl=en&user=-nEZHyUAAAAJ

Research Interests

My research endeavors exhibit interdisciplinary breadth and diversity, encompassing expertise in synthetic chemistry, materials science, photochemistry, electrochemistry, and medicinal chemistry.

I'm interested in fundamental studies leading to clean fuels. A major interest for my research involves photocatalytic hydrogen generation under visible light irradiation, employing a biomimetic approach inspired by natural enzymes, specifically [FeFe]-hydrogenase.

Additionally, my research extends to medicinal chemistry, with a particular emphasis on the synthesis of platinum (II) based chemotherapeutic agents and platinum (IV) prodrugs, which seek to enhance both selectivity and the anticancer activity of platinum-based chemotherapy.

Professional qualifications

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| Jun 2023 – Present | Lecturer of Inorganic and Analytical Chemistry , Department of Chemistry, Faculty of Science, Assiut University, Assiut, Egypt. |
| July 2018 – May 2023 | Scientific employee and Ph.D. Student , Institute of Inorganic and Analytical Chemistry (IAAC), Friedrich-Schiller-University Jena, Germany. |
| Dec 2015 – Jan 2018 | Assistant Lecturer & Research Assistant , Department of Chemistry, Faculty of Science, Assiut University, Assiut, Egypt. |
| Mar 2010 – Nov 2015 | Demonstrator & Research Assistant , Department of Chemistry, Faculty of Science, Assiut University, Assiut, Egypt. |

Educations

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|--------------------------|---|
| 07/2018 – 05/2023 | Dr. rer. nat. (Chemistry)
FSU University, Germany
(1.0 Summa cum laude for thesis defense) (1.3 Magna cum laude for thesis) (Overall Magna cum laude) (GPA: 3.8)
Supervisor: Prof. Dr. Wolfgang Weigand
Title: Reactivity of Platinum (II) Complexes with (O,S) Bidentate Ligands towards DNA Model Systems for Cancer Treatment |
| 06/2011 – 11/2015 | M.Sc. (Inorganic Chemistry)
Assiut University, Egypt
Very Good
Supervisors: Prof. Dr. Sahar Abdallah & Prof. Dr. Mohamed EL-Gahami & Prof. Dr. Dina Fahmy
Title: Transition Metal Complexes of N(4)-Substituted Thiosemicarbazones Derived From Pyridine-2-Carbaldehyde and their Antimicrobial Activities. |

03/2010 – 06/2011	Diploma (Inorganic Chemistry) Assiut University, Egypt Very Good
09/2005 – 06/2009	B.Sc. (Chemistry) Assiut University, Egypt

Fellowships and Scholarships

1. Graduate Academy at FSU-Jena, fellowship, from Dec. 2022 till May. 2023.
2. The Katholischer Akademischer Ausländer-Dienst (KAAD) scholarship from July.2018 till Dec.2021.

Synergistic activities

1. Supervision of junior researcher: 2 master's students and 7 undergraduate students.
2. Invitation of pupils: discuss the challenges of the energy transition and concurrently foster innovative solutions for global challenges in the realms of chemistry and sustainable energy.
3. Educational qualification: participation in further education events on the faculty of science at Assiut University.

Workshops and Educational qualification

12.-14. Sep 2023	"Conference Organization", online
13.-15. Sep 2023	"Excellence in University Teaching", online
13.-14. Aug 2023	"How to Design the E-Course", Assiut University, Egypt
13.-15. Aug 2023	"How Publication of Research in International Journals ", online
13.-15. Aug 2023	"Preparing a Proposal for a Competitive Research Project ", online
13.-15. Aug 2023	"Code of Ethics ", online
02.-08. July 2015	" Communication Skills ", Assiut University, Egypt
02.-08. July 2015	" Design and Conduct Scientific Research ", Assiut University, Egypt
12.-20. Mar 2015	" Statistical Analysis in Scientific Research", Assiut University, Egypt
12.-20. Mar 2015	" Analytical and Creative Thinking", Assiut University, Egypt
13.-18. Dec 2014	" Effective Presentation", Assiut University, Egypt
04.-10. Jun 2014	" Research Ethics", Assiut University, Egypt

Public and Social activities

Feb. 27th – Mar. 2nd, 2023, Participant in the workshop at Katholischer Akademischer Ausländer-Dienst (KAAD): Tropical forests: On the conflict between traditional development strategies and ecological requirements in Münster, Germany.

Nov. 1st – 4th, 2022, Participant in the workshop at KAAD: Mental Health in General and Intercultural: Psychosocial Consequences of the Pandemic and How to Overcome Them in Bonn, Germany.

Aug. 23rd – 25th, 2022, Participant in the workshop at KAAD: Doctoral studies in Germany: opportunities and pitfalls in Bonn, Germany.

Apr. 28th – May 1st, 2022, Participant in the workshop at KAAD: Synodal Church – World Church Perspectives in Bonn, Germany.

Apr. 22nd – 25th, 2021, Participant in the Katholischer Akademischer Ausländer-Dienst Annual Academy: Power and Freedom of Language: Identity Politics and Language Biographies in Bonn, Germany.

Feb. 22nd – 25th, 2021, Participant in the workshop at KAAD: German-Asian cooperation in the field of renewable energies, Münster, Germany.

Feb. 8th – 11th, 2021, Participant in the workshop at KAAD: Economy in the Middle East – Between Crises and Opportunities in Bonn, Germany.

Apr. 23rd – 26th, 2020, Participant in the Katholischer Akademischer Ausländer-Dienst Annual Academy: Power and Freedom of Language: Identity Politics and Language Biographies in Bonn, Germany.

Mar. 9th – 12th, 2020, Participant in the workshop at KAAD: Photography: Images and their impact in Berlin, Germany.

Oct. 22nd – 25th, 2019, Participant in the workshop at KAAD: Media and politics in times of “fake news”: the example of migration, in Berlin, Germany.

Jun. 30th – Jul. 3rd, 2019, Participant in the workshop at KAAD: Language(s): Identity Politics and Language Biographies in Goslar, Germany.

Apr. 25th – 28th, 2019, Participant in the Katholischer Akademischer Ausländer-Dienst Annual Academy: “Development”: the term and practice in Bonn, Germany.

Conferences

1. **September 2022:** "Hydrogen Evolution through a photoactive [FeFe]-Hydrogenase Mediator using Visible Light "The 9th Workshop of the multidisciplinary network SeS Redox and Catalysis, Łódź, Poland.
2. **November 2016:** " Structural and Spectral Studies of Novel Mn(II) Complexes of Substituted Thiosemicarbazone Derived from Pyridine-2-Carbaldehyde " The 5th International Conference for Young Scientists in Basic and Applied Sciences - Faculty of Science, Assiut University, Egypt.
3. **April 2014:** " Synthesis and Characterization of Novel Ni(II) and Cu(II) Complexes of Substituted Thiosemicarbazone Derived from Pyridine-2-Carbaldehyde " The 4th International Conference for Young Researchers, Assiut University, Egypt.

Publications

1. A. B. M. Ibrahima, **M. K. Farh**, S. A. El-Gyara, M.A. EL-Gahamia, D. M. Fouad, F. o Silva, I. C. Santos, A. Paulo, Synthesis, structural studies and antimicrobial activities of manganese, nickel, and copper complexes of two new tridentate 2-formylpyridine thiosemicarbazone ligands, *Inorg. Chem. Commun.*, **2018**, 96, 194. DOI: 10.1016/j.inoche.2018.08.023.
2. A. B. M. Ibrahima, **M. K. Farh**, P. Mayer, Copper complexes of new thiosemicarbazone ligands: Synthesis, structural studies and antimicrobial activity, *Inorg. Chem. Commun.*, **2018**, 94, 127. DOI: 10.1016/j.inoche.2018.06.019.
3. A. B. M. Ibrahima, **M. K. Farh**, J. R Plaisier, E. M. Shalaby, Synthesis, structural and antimicrobial studies of binary and ternary complexes of a new tridentate thiosemicarbazone, *FutureMed. Chem.*, **2018**, 10(21), 2507. DOI: 10.4155/fmc-2018-0194.
4. A. B. M. Ibrahima, **M. K. Farh**, P. Mayer, Synthesis, structural studies, and antimicrobial evaluation of nickel (II) complexes of NNS tridentate thiosemicarbazone based ligands, *Appl. Organometal. Chem.*, **2019**, 33, e4883. DOI: 10.1002/aoc.4883.
5. A. B. M. Ibrahima, **M. K. Farh**, I. C. Santos, A. Paulo, Nickel Complexes Bearing SNN and SS Donor Atom Ligands: Synthesis, Structural Characterization and Biological activity, *Appl. Organometal. Chem.*, **2019**, 33, e5088. DOI: 10.1002/aoc.5088.
6. P. Buday, C. Kasahara, E. Hofmeister, D. Kowalczyk, **M. K. Farh**, S. Riediger, M. Schulz, M. Wächtler, S. Furukawa, M. Saito, D. Ziegenbalg, S. Gräfe, P. Bäuerle, S. Kupfer, B. Dietzek-Ivanšić, W. Weigand, Activating a [FeFe] Hydrogenase Mimic for Hydrogen Evolution under Visible Light, *Angew. Chem. Int. Ed.* **2022**, 61, e202202079. DOI: 10.1002/anie.202202079.

- M. K. Farh**, F. V. Gruschwitz, N. Ziegenbalg, H. Abul-Futouh, H. Görls, W. Weigand, J. C. Brendel, Dual Function of β -Hydroxy Dithiocinnamic Esters: RAFT Agent and Ligand for Metal Complexation, *Macromol. Rapid Commun.*, **2022**, 43, 2200428. DOI: 10.1002/marc.202200428.
- M. K. Farh**, I. Louzi, H. Abul-Futouh, H. Görls, N. Häfner, I. B. Runnebaum, W. Weigand, Platinum(II) and palladium(II) complexes mediated by β -hydroxy-dithioesters ferrocenyl derivatives: synthesis, characterization and Antiproliferative Activity, *J. Sulphur Chem.*, **2023**, 44, 320-335. DOI: 10.1080/17415993.2022.2152285.
- M. K. Farh**, N. Häfner, H. Görls I. B. Runnebaum, W. Weigand, Novel Homoleptic and Heteroleptic Pt(II) β -oxodithiocinnamic ester Complexes: Synthesis, Characterization, Interactions with 9-methylguanine and Antiproliferative Activity, *ZAAC*, **2023**, e 2023, 649, e202200349. DOI: 10.1002/zaac.202200349.

Technical Skills

NMR spectroscopy	FT- IR spectroscopy	LC-MS
UV-Vis spectroscopy	Mass spectrometry	HPLC & GC
Fluorescence spectroscopy	Elemental analyzer	Magnetic susceptibility
Molar conductometer	DTG 60-H thermal analyzer	Autoclaving
Applied X-ray Crystallography XAS & XRD	MS Office, Origin, ChemDraw	Structure construction software
Reactions under both normal and inert conditions		

Languages

English	Full professional proficiency
Arabic	Native proficiency
German	A2 Level

Personal Skills

Meet deadlines with good follow-up
 High level of professionalism
 Initiation and planning
 Communication and presentation skills

References

Prof. Dr. Wolfgang Weigand

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 Institute of Inorganic and Analytical Chemistry
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