

Dr. Kamal Khalifa Taha Hamza

Dept. of Chemistry, College of Science, Al Imam Mohammad Ibn Saud Islamic University.

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RESEARCH FOCUS

Nanotechnology

Clays Catalytic Effect in Petroleum Industry

Corrosion Chemistry & NDT

Natural Products & Pharmaceuticals

Environment

EDUCATION

Ph.D. (August 1999 - December 2002), Central College, Bangalore University, Bangalore, India.

Thesis Title: Studies on the Corrosion and Corrosion Inhibition of Brass Copper and Zinc in Perchloric Acid.

Supervisors: Prof. B.S. Sheshadri & Prof. M.F. Ahmed, Bangalore University, Bangalore, India.

Masters in Science (M.Sc.), Khartoum University, Khartoum, Sudan.

Thesis Title: Investigation of the elemental Chemistry (March 1998), contents of some environmental samples from the Blue and White Niles around Khartoum Area.

Supervisors: Dr. Ali Hamood & Dr. Mohamed A. H. Tayeb

Bachelor of Science (B.Sc.) Chemistry, 1st division. (April 1983), Khartoum University, Khartoum, Sudan

TEACHING EXPERIENCE

- **Associate Professor** (2013 to date), College of Sciences, Al Imam Mohammad Ibn Saud Islamic University.
- **Associate Professor** (2011 to 2013), University of Bahri (formerly Juba), Khartoum, Sudan
- **Assistant Professor**, (March 2003 to 2011), College of Applied and Industrial Science, Juba University, Sudan.
- In charge of Head of Examination (2003 – 2004), College of Applied and Industrial Science, Juba University, Sudan.
- **Lecturer** (February 1997 to May 2003), College of Applied and Industrial Science, Juba University, Sudan.
- **Teaching Assistant** (March 1994 to March 1997), College of Applied and Industrial Science, Juba University, Sudan.

- **Dean**, College of Applied and Industrial Sciences, University of Bahri (4th August 2011 till date)
- **Deputy Secretary for Academic Affairs (Feb. 2009 - August 2011)**, Juba University, Sudan.
- **Head of Chemistry & Industrial Chemistry Department (2006- 2009)**, College of Applied and Industrial Science, Juba University, Sudan.

AREA OF WORK:

Courses I teach include: Corrosion, Cathodic protection, Electrochemical plating, Scales formation and removal, Thermodynamics, Batteries and accumulators, Non-destructive testing, Quantum Chemistry, Spectroscopy (UV, IR, NMR, ESR, Mass spectroscopy, flame photometry, ICP), Chemical Kinetics, Nuclear Chemistry, Molecular Symmetry, Catalysis and Surface Chemistry, Phase equilibria, Electrochemistry, physical pharmacy & introduction to physical chemistry.

Part Time Teaching Assistant at different universities including Khartoum University,

Part time Jobs :

- **Khartoum University**, Faculty of Science: teaching quantum mechanics & fine structure courses for M. Sc. Students.
- **Islamic University, Juba University etc. (1991-1993)**
- **Rabat National University**, Faculty of Pharmacy: teaching classes of physical chemistry, analytical chemistry & physical pharmacy.

Instrumental work experience :

Worked with the following instruments, AAS, UV, FT-IR, AUTOLAB ELECTROCHEMICAL SETUP FOR POLARIZATION, CV AND IMPEDANCE, GC, HPLC, GC-MS, FLAME PHOTOMETER, XRD & XRF.

RESEARCH EXPERIENCE

- **Supervision:** 4 Ph.D. and 8 M.Sc. students.

- **Area of Research**

- **Red Sea :**

Conducted a research in the Red Sea to study the effect of corrosion of zinc and steel. The experimental work covered weight loss, polarization (logarithmic & linear), electrochemical impedance spectroscopy (EIS), scanning electron microscopy (SEM), electron diffraction analysis by X-ray (EDAX).

- **Crude Oil:**

The research was conducted to furnish data base about Sudanese crude by studying different properties like pour point, kinematic viscosity, wax, salt, sulfur and asphaltene content.

- **Natural Product:**

Flavonoids from alcoholic extracts were isolated with TLC. Their characterization was carried out using UV screening, UV spectroscopy, FT-IR spectroscopy, MS and GC.

Other Professional Activities

External examiner for M.Sc. thesis at Al-Nelien University - 2004 - date.

Internal examiner for M.Sc. thesis at Juba University 2003 - date.

Publications:

1. K. K. Taha, B. S. Sheshadri & M. F. Ahmed, Aliphatic Amines Inhibition for Brass Corrosion, Sudan J. of Basic Sciences (2005), Vol. 7, pp. 119 – 132.
2. B. S. Sheshadri, M. F. Ahmed & K. K. Taha, Corrosion Inhibition of Brass by Triazoles, Bulletin of Electrochemistry (2003), Vol. 19, pp. 449 – 454.
3. K. K. Taha, B. S. sheshadri & M. F. Ahmed (2008), Benzimidazole and Substituted Benzimidazoles as Corrosion Inhibitors for Brass in Perchloric Acid, Industrial Research Journal, Vol. 6, pp. 25 – 49.
4. K. K. Taha, B. S. Sheshadri, M. F. Ahmed & V. S. Muralidharan (2006), Corrosion Inhibition of Brass by thiocarbamides, Indian Journal of Chemical Technology, Vol. 13, pp. 128 – 134.
5. Kamal K. Taha, B. S. Sheshadri, M. F. Ahmed & V. S. Muralidharan (2008), Corroion Inhibition of Brass by Amino Acids and Iodide ions in HClO₄, J. Bangladesh Chem. Soc., Vol (21), pp. 50 – 60.
6. K. K. Taha, A, Elnour & M. A. H. Eltayeb (2009), Characterization of Nigella Sativa Fixed Oil, Juba J. of Arts and Sciences, Vol. 8, pp. 9 – 18.
7. K. K. Taha & A. Muhideen (2009). Characterization of Anti-corrosion Triazole Film, Science and Technology Journal, Sudan University for Science and Technology. Vol. 10 (2) – pp. 92 – 97.
8. K. K. Taha, A. Muhideen & A/ Allah Gutbi (2009). Inhibition of zinc corrosion in the Red Sea water. Industrial research J., Vol. 7, pp. 84 – 97.
9. K. K. Taha et al. (2008), Investigation of the elemental Contents of Some Samples of Sediments and Fish from the blue Nile and white Nile around Khartoum using AAS and XRF, Proceedings of the 9th Arab Conf. on the Peaceful uses of Atomic Energy, Beirut 13–16 December 2008.
10. Kamal Khalifa Taha, A/ Alla Gutbi, Musa El'bala & Anjum Muhdeen (2010). Study of Corrosion Inhibition in Acidic Medium of Rotating Brass Disc, Industrial Research Journal, Vol. 8, pp. 1 – 14.

11. Musa E. Mohamed , and Kamal K. Taha, (2011). Quantum Chemical Calculations on Some Substituted Benzothiazole Derivatives as Corrosion Inhibitors for Brass in Acidic Media, *Nature and Science*, 9(8), pp. 34 – 39.
12. Musa E. Mohamed , and Kamal K. Taha, (2012). Quantum Chemical Calculations on Some Thiocarbamides as Corrosion Inhibitors for Brass in Acidic Media, *Nature and Science*, 10(3), pp. 55 – 60.
13. AN Ahmed, MMO Ahmed, I Mukhtar, KK Taha. [Estimation of radioactive nuclides in Meri Lake Area \(Sudan\)](#). African conference on research reactor utilization and safety; Abuja (Nigeria); 2-3 Nov 2009; Available from Nigeria Atomic Energy Commission, 9 Kwame Nkrumah Crescent Asokoro, P.M.B. 646 Garki Abuja (NG).
14. Kamal K. Taha*, Tagelsir M. Suleiman*. & Musa A. Musa* (2011). Performance of Sudanese Activated Bentonite in Bleaching Cottonseed Oil, *J. Bangladesh Chemical Society*, 24 (2), pp. 191 – 201.
15. K. K. Taha , R. H. Elmahi , E. A. Hassan , S. E. Ahmed and M. H. Shyoub (2012). Analytical Study On Three Types Of Gum From Sudan, *JOURNAL OF FOREST PRODUCTS & INDUSTRIES*, 2012, 1(1), : 11-16.
16. Musa E. Mohamed , and Kamal K. Taha, (2012). Theoretical Study on the Structural Effect of Sulfur, Containing Amino Acids As Corrosion Inhibitors On Brass In HClO₄, *Researcher* 4(11); pp. 92 – 97.
17. K. k. Taha, M. E. Mohamed, S. A. Khalil and S. A. Talab (2013). Inhibition of Brass Corrosion in Acidic Medium using Thiazoles. *International Letters for Chemistry, Physics & Astronomy*, 9 (2); pp. 87 - 102.
18. Ali M. El-hassan; Shayoub M E , Abdalkreem M. abdalkreem; Osman H M and Kamal Khalifa (2012). Design, Formulation, and Evaluation of *Senna* Effervescent Tablets, *JOURNAL OF FOREST PRODUCTS & INDUSTRIES*, 2012, 1(2), 21-25 ISSN: 2166
19. K. K. Taha, M. E. Mohamed, S. A. Khalil, S. A. Talab (2013). Inhibition of Brass Corrosion in Acid Medium Using Thiazoles. *International Letters of Chemistry, Physics and Astronomy*, 9(2) ;pp. 87-102
20. Kamal K.Taha, Mona I. Shmou, Maisoon H.Osman, M. H. Shayoub (2013). Soil-Plant Transfer and Accumulation Factors for Trace Elements at the Blue and White Niles. *Journal of Applied and Industrial Sciences*, 2013, 1 (2): 97-102, ISSN: 2328-4595
21. Ammar Elsanousi, Nazar Elamin & kamal Khalifa Taha,(2013) Magnetic field effect on the photocatalytic activity of self organized TiO₂ nanotubes, *Research and Reviews in Electrochemistry* Volume 4(4),
22. Ammar Elsanousi, Kamal Khalifa Taha and Nazar Elamin, (2013). Synthesis of porous Titania and its Application to Dye-sensitized Solar Cells, *Advanced Material Letters* (DOI-10.5185/amlett.2013.5472).

23. A. Saifelnasr, M. Bakheit, K. Kamal, A. Lila, (2013). Calcium Carbonate Scale Formation, Prediction and Treatment (Case Study Gumry Oilfield-PDOC). *International Letters of Chemistry, Physics and Astronomy*, vol. 12, pp. 47-58.
24. Musa El Balla Mohamed and Kamal K. Taha (2013). Computational Simulation of the Molecular Structure of Benzimidazole and Substituted Benzimidazoles as Corrosion Inhibitors for Brass in Perchloric Acid. *American Journal of Research Communication*.
25. Khalil, A. S.; Rahim, A. A., Taha, K. K., Abdallah, K. B. (2013). Characterization of Methanolic Extracts of Agarwood Leaves. *Journal of Applied and Industrial Sciences*, 1 (3): 78-88, ISSN: 2328-4595 (PRINT), ISSN: 2328-4609 (ONLINE)
26. Sarra Talab, Kamal Taha , and Johan Lugtenburg (2013). Preparation of 2'-13C-L-Histidine Starting from 13C 7 Thiocyanate Synthetic Access to Any Site Directed Stable 8 Isotope Enriched L-Histidine, *Molecules* 19 (1), 1023-33.
27. Khalil, A. S.; Rahim, A. A., Taha, K. K., Abdallah, K. B. (2013). Characterization of Methanolic Extracts of Agarwood Leaves. *Journal of Applied and Industrial Sciences*, (3): 78-88, ISSN: 2328-4595.
28. Intisar E. mohamed, Hassan E. Khalid, Salah A. Mohamed, Elbadri E. Osman Waleed Sayed Koko, Kamal K. Taha , Mahmoud M. Dahab, Noor Rain Bt. Abdullah Zakiah Bt. Ismail (2014). Anti-malarial Activity of Some Medicinal Sudanese Plants. *JOURNAL OF FOREST PRODUCTS & INDUSTRIES*, 3(6), 236-240 ISSN:2325-4513.
29. Intisar E. Mohamed, Elbadri E. Osman, Hassan E. Khalid, Salah A. Mohamed, , Waleed Sayed Koko, Kamal K. Taha, Eltyeb Fadul. Antioxidant Effects of Some Common Sudanese Plants. *Journal of Applied and Industrial Sciences*, 2015, 3 (5):172-176, ISSN: 2328-4595 (PRINT), ISSN: 2328-4609 (ONLINE)
30. Muna I. Shumo, Kamal K. Taha, Amel Y. Ahemad, Md Pauzi Abdullah (2014). Accumulation of Heavy Metals in the Floodplains along River Nile, White and Blue Niles at Dry and Rainy Season in the Khartoum city, Sudan. *Journal of Applied and Industrial Sciences*, 2 (5): 226-233, ISSN: 2328-4595
31. K. T. Kamal, L. Lotfi. K. D. Omar, R. E. Mohamed, K. M. Abueliz & H. Nasir (2015). Heavy metals concentrations in fish from the Red sea and Arabian gulf: Health Benefits and Risk assessments due to their consumption; *Asian Journal of Chemistry*, 27 (12),
32. Sedahmed Osman, O. K. Duaij & Kamal K. Taha (2015). Enhancement of Octane Number of Sudanese Gasoline (Nile Blend). *International Letters of Chemistry, Physics and Astronomy*, vol. 9 (2), pp. 184-193.

33. Kamal K. Taha & Fahd M. Al Ghtani (2015). Determination of the elemental contents of date palm (*Phoenix dactylifera* L.) from Kharj Saudi Arabia, *World Science News*, 6; 125-135.
34. L. Khezami, Kamal K. Taha, Imed Ghiloufi, and Lassaad El Mir (2015). Adsorption and photocatalytic degradation of malachite green by vanadium doped zinc oxide nanoparticles. *Water Science & Technology*, 73.4 (2016) 881-889.
35. Kamal K. Taha, Mohamed Ould M'hamed and Hajo Idriss. Mechanical fabrication and characterization of zinc oxide (ZnO) nanoparticles, *Journal of Ovonic Research*. 11 (6), (2015) 271-276.
36. A. MODWI, M. A. ABBO, E. A. HASSAN, K. K. TAHA, L. KHEZAMI, A. HOUAS. INFLUENCE OF ANNEALING TEMPERATURE ON THE PROPERTIES OF ZnO SYNTHESIZED VIA 2,3-DIHYDROXYSUCCINIC ACID USING FLASH SOL-GEL METHOD. *Journal of Ovonic Research* 12 (2) (2016) 59 - 66
37. Sarra Talab, Kamal Taha, and Johan Lugtenburg (2013). Preparation of 2'-13C-L-Histidine Starting from 13C 7 Thiocyanate Synthetic Access to Any Site Directed Stable 8 Isotope Enriched L-Histidine, *Molecules* 19 (1), 1023-33.
38. K. T. Kamal, L. Lotfi. K. D. Omar, R. E. Mohamed, K. M. Abueliz & H. Nasir (2015). Heavy metals concentrations in fish from the Red sea and Arabian gulf: Health Benefits and Risk assessments due to their consumption; *Asian Journal of Chemistry*, 27 (12),
39. Kamal K. Taha, Mohamed Ould M'hamed and Hajo Idriss. Mechanical fabrication and characterization of zinc oxide (ZnO) nanoparticles, *Journal of Ovonic Research*. 11 (6), (2015) 271-276.
40. Omar K. Alduaij, Mohamed I. Attia, Lotfi Khezami¹, Kamal K. Taha. REMOVAL OF COBALT(II) FROM AQUEOUS SOLUTION BY LOCAL SAUDI BENTONITE: KINETIC AND EQUILIBRIUM INVESTIGATIONS. *Macedonian Journal of Chemistry and Chemical Engineering*, Vol. 35, No. 1, pp. 87-96 (2016)
41. Hajo Idriss, Kamal K. Taha, O. Aldaghri, R. Alhathloul, M. S. Alsalhi & K. H. Ibnaouf. Amplified spontaneous emission from the exciplex state of a conjugated polymer "PFO" in oleic acid, *Optics and Laser Technology*, 83 (2016); 148-152.
42. Musa E. Mohamed and Kamal Khalifa Taha. COMPUTATIONAL REACTION MECHANISM STUDY OF THE SCHIFF BASE FORMATION BETWEEN PARA-SUBSTITUTED ANILINE AND PYRROLE-2-CARBALDEHYDE. *EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH*, 2015,2(4), 769-778.
43. L. KHEZAMI, KAMAL K. TAHA, A. MODWI. KINETIC AND THERMODYNAMIC STUDIES OF TRIVALENT ARSENIC REMOVAL BY INDIUM-DOPED ZINC OXIDE NANOPOWDER. *Digest Journal of Nanomaterials and Biostructures*, 11 (4), 2016, p. 1397-1410

44. L. Khezami, Kamal K. Taha, Ezzeddinne Amami, Imed Ghiloufi, and Lassaad El Mir. Removal of Cadmium (II) from aqueous solution by zinc oxide nanoparticles: kinetic and thermodynamic studies. *Desalination and Water Treatment*, 62 (2017) 346–354.
45. L. Khezami, Kamal K. Taha* and A. Modwi. Efficient Removal of Cobalt from Aqueous Solution by Zinc Oxide Nanoparticles: Kinetic and Thermodynamic Studies. *Z. Naturforsch.* 2017; 72(5)a: 409–418.
46. L. Khezami, Kamal K. Taha, Mohamed OuldM'hamed and O.M. Lemine. **(x)ZnO(1-x)Fe₂O₃ nanocrystallines for the Removal of Cadmium (II) and Nickel (II) from water: Kinetic and Adsorption Studies. *J. of Water Supply: Research & Technology- AQUA* “Accepted”.**

47.

Seminars

- **NDT techniques**, University of Khartoum - 2006.
- **Crude analysis**, Juba University – 2006.
- **Rotating disc corrosion**, Sudan Institute for Natural Sciences – 2005.
- **Pipeline corrosion monitoring**, Sudan Institute for Natural Sciences – 2004.
- **Corrosion Inhibitors**, Sudan Institute for Natural Sciences (2004)
- **Introduction to Corrosion**, Sudan Institute for Natural Sciences (2003).
- Training course for young scientist organization – National institute for research and industrial consultancy.
- **Sulfur containing amino acids & iodide as inhibitors for Brass in perchloric acid**, the 90th Indian Science Congress 2003, Bangalore University, Bangalore, India

- **Benzimidazole & Substituted Benzimidazole as corrosion inhibitors for brass, copper and zinc in perchloric acid**, the 10th convention of Electrochemical Society of India, 2001, Karikudi, India.

Awards and Honors

- Recipient of the International Publication Award, Al Imam Mohammad Ibn Saud Islamic University, 2017.
- Recipient of the International Publication Award, Al Imam Mohammad Ibn Saud Islamic University, 2015.
- Recipient of the National Award for **Outstanding Researcher**, Ministry of Higher Education, Sudan- 2004.
- Indo-Sudan exchange Programme Scholarship 1999 - 2000 for Ph.D. Programme in Bangalore University, Sponsored By Government of India

Training:

- Nanotechnology ; Nanomaterials synthesis & Nanotechnology for Energy Solutions,(2 – 24- July 2012), Ministry of Science & Technology, Sudan.
- Innovative Methods for Teaching Science at the University Level, UNISCO, 15 – 17 Jan. 2005, Sana'a, Yemen.
- Laser & Its Applications, Sudan University for Science & Technology, 2010.
- Unit Operations, University Of Gezira, Sudan, 2008.
- XRF techniques, Liden University, 1997.

Professional Membership

- Active member (No. A 1572) of The Society for Advancement of Electrochemical Science & Technology, Karaikudi- India.
- Technical Editor for the Asian Journal of Applied Sciences.
- Technical Editor for the Asian Journal of Industrial engineering.
- Technical Editor for the Asian Journal of Material Science.
- Technical Editor for Current Research in Chemistry.
- Technical Editor for International Journal of Chemical Technology.
- Reviewer Korean Journal of Chemical Engineering.

Committees:

- A member of the quality assurance and academic development committee at Al Imam Mohammad Ibn Saud Islamic University.
- A member of the scientific committee at Al Imam Mohammad Ibn Saud Islamic University.
- A member of the postgraduate staff follows up committee at Al Imam Mohammad Ibn Saud Islamic University.

Projects:

- **Physicochemical, mechanical and corrosion prevention of reinforcement steel embedded rebar in cement mortars containing prepared nanoparticles (project 361219) Principle Investigator.**

Language Proficiency

- **English**--Both Spoken and Written
- **Arabic**-- Both Spoken and Written

Computer Skills

- Windows 95/2000, Microsoft Word, Excel, PowerPoint, Adobe Photoshop
- Software for Chemical Data analysis: Origin, Chemwin, SPSS.
- Using Internet, email

Personal Information :

- Marital Status : Married
- Date & Place of Birth : 10th December 1960, Umrawaba, Sudan.