

HAITHAM ELEMAM

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RESEARCH INTERESTS

Inorganic Chemistry, Macrocyclic Chemistry, Complex Chemistry, Supramolecular Chemistry, Organometallic Chemistry, and Polymer Chemistry.

EDUCATION

Pre-Master Program, Multidisciplinary-based program, Duration – 36 Credit Hours, from Sept.2017 to Sept.2019 – Inorganic Chemistry, Faculty of Science, Mansoura University.

BA in Science, Chemistry Major, May 2016 – Al-Azhar University, Assiut Campus, A Full Time Bachelor Degree Program – Grade 78.82 % (Very Good).
Graduation Research: Thermogravimetry of Mercury (II) complexes with N-salicylideneaniline and its derivatives, where studies focused on thermal decomposition of Schiff bases Complexes.

Research Supervisor: Dr. Gamal A. H. Abdelrahman, Associate Professor of Inorganic Chemistry, Faculty of Science, Al-Azhar University – Assiut Campus.

TEACHING EXPERIENCE

Secondary Stage Teacher, Glory American International Schools, 2016-2017, Glory International Language Schools.
Courses: Chemistry in the Classroom,

Analytical Chemist Assistant, Adm International Hospital - Cairo, 3 months – Internship from June - August 2016.
Courses: Analytical Chemistry, Cell Biology, Introduction to Cytology and Histology and Quality Lectures on Lab Safety Procedures and Treatment of Biohazards.

RESEARCH EXPERIENCE

Undergraduate Research Training for two months, under supervision of Dr. Mahmoud Hashem Mahrous, Associate Professor of Physical Chemistry, During Fall Semester - 2015, 4th Year Chemistry, Conducting a research project on Corrosion Inhibition for Metals using a Natural Product as an Inhibitor.

Characterization of Clove and studying its Inhibition and Adsorption Behavior on Iron in Acidic Medium.

Corrosion behavior of iron in hydrochloric acid (1M HCl) solution was studied by using weight loss as well as electrochemical techniques in cases without and with clove. The practical steps were based on the extraction of eugenol (clove oil) from cloves natural product through reflux process followed by purification and standardization in order to be used at different concentrations when added to the acidic solution. The results show that the oil acts as mixed-type inhibitor with the highest inhibition at 0.8 g/L. The percentage of inhibition efficiency increases with the increasing clove oil concentration. Thermodynamic, Kinetic parameters and equilibrium constant for adsorption process were calculated from the experimental data. The inhibition of corrosion was found to be due to adsorption of this essential oil on metal surface, which is in conformity with Langmuir's adsorption isotherm. Even Electrochemical impedance spectroscopy results showed that the corrosion and corrosion inhibition of steel occurred mainly by charge transfer. All the data reveal that the oil acts as an excellent inhibitor for the corrosion of iron in HCl solution.

Master Research Project/ Research Proposal

Topic: Synthesis of Fluorescent Nanostructured Metal-Carbon Clusters and Complexes by Laser-Induced Synthesis and Photochemical Reduction.

Aspects:

- Synthesis of Fluorescent Metal Nanoparticles in Aqueous Solutions using Photochemical Reduction.
- Studying Photochemistry and Laser Spectroscopy on Metal Surfaces; using laser to induce and probe surface processes including, selectivity, sensitivity, fast-time resolution, high frequency and accessibility to full pressure ranges. It is worth mentioning that recent applications of laser-based techniques in studying surface processes have stimulated new developments and enabled the understanding of fundamental problems in energy transfer and reactions.
- Conducting Synthesis of Metal Nanoparticles (e.g, Gold and Silver) by a photochemical method using tyrosine as the photoreducing agent. And the following characterization of the nanoparticles using x-ray diffraction, transmission electron microscopy, fourier transform infrared spectroscopy and photoluminescence spectroscopy.
- Studying of Fluorescent Gold Nanoclusters and Complexes due to their unique Construction and distinctive properties which place them between single metal atoms and larger nanoparticles.

PRESENTATIONS

A seminar presentation (Fall-Semester 2017). "Discussing π -acceptor ligands, Metal-Metal bonds and Metal atom Clusters." Lecture presented at the Seminar Hall for new preliminary master's student at the University of Mansoura under supervision of Prof. Dr. Nagwa Nawar, Professor of Inorganic Chemistry and head of Chemistry Department.

A presentation (Spring-Semester 2018). "Studying impacts of axial ligands on bond length and energy of molecules." Lecture presented at the Seminar Hall in collaboration with master's colleagues, department of inorganic chemistry, University of Mansoura, under supervision of Prof. Dr. Mohsen Mostafa, Professor of Inorganic chemistry.

SCIENTIFIC CONFERENCES

National Competition of Scientific Research and Technology (University of Aswan, Faculty of Engineering and Renewable Energy, January-2016).

Young Researchers Forum (University of Mansoura, Faculty of Science, July-2018).

Young Researchers Forum (University of Mansoura, Faculty of Science, August-2019).

The 5th ICBE Conference in Sweden (The 5th International Conference of Biotechnology, Environment and Engineering sciences), held during the period 26-27 September.2019, Stockholm-Sweden.

AWARDS AND HONORS

Award of organization and presentation for a workshop within chemistry department about the realm of chemistry and its application in life, fall-semester 2015.

Academic Excellence Award from University Presidency, December 2015.

Cash Reward and Certificate from Al-Azhar Secondary Institution for getting the Third Class in High School Completion Examinations, with grade 91.57 %.

PROFESSIONAL MEMBERSHIPS

Zewail City Friends Community – Zewail City of Science and Technology, Giza, Egypt.
Our Life is Chemistry Community - Affiliated to Scientific Muslim Researchers Authority, Cairo, Egypt.

RELEVANT SKILLS

- Scientific and numerical skills
- Determination
- Meticulous attention to detail and accuracy
- Logical and Independent mind
- Entrepreneurial Mindset
- Excellent analytical skills
- Teamwork skills
- Interpersonal skills
- Flexibility
- Presentation skills
- Proficiency in Office programs
- Written and oral communication skills
- Proficiency in English Language
- Intermediate-level of German Language