



Sohag Univerisity



Faculty of Science



Chemistry Department

Department of Chemistry **Personal Mobile:**+201020196847
Faculty of Science **Phone (H):** +20934601159
Sohag University **Fax:** +20934601159
Sohag, 82524 **E-mail** hoda_diab2009@yahoo.com
EGYPT hodadiab2009@gmail.com
hoda_corr2012@science.sohag.edu.eg



2009.12.19

**Hoda Abd El-Shafy Shilkamy Diab,
BSc, MSc, Ph.D.**

Corrosion and Electrochemistry

Personal Information	<p>Name: Hoda Abd El-Shafy Shilkamy Diab</p> <p>Date of Birth: 25/06/1988</p> <p>Place of Birth: Sohag, Egypt</p> <p>Nationality: Egyptian</p> <p>Religion: Moslem</p> <p>Sex: Female</p> <p>Marital Status: Married and have two children</p> <p>Mother language: Arabic</p> <p>Other languages:</p> <ul style="list-style-type: none">➤ English (very good in speaking, reading and writing).
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Education	<ul style="list-style-type: none">• Ph.D in Physical Chemistry (Corrosion and Corrosion Protection), 2022, Sohag University.• Master of Science in Physical Chemistry (Corrosion and Corrosion Protection), 2015, Sohag University, Sohag, Egypt• Diploma in Physical chemistry (V. Good with degree of honors) Chemistry department, Faculty of science, Sohag university, Soahg, Egypt.
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	<ul style="list-style-type: none"> • Bachelor of Science in Chemistry (Excellent with honors 90.88%), 2009, Sohag University, Sohag, Egypt.
Present and Previous Positions	<ul style="list-style-type: none"> • Demonstrator at Chemistry Department, Faculty of Science, Sohag University, Sohag, Egypt, 2010-2015. • Assistant Lecturer at Chemistry Department, Faculty of Science, Sohag University, Sohag, Egypt, 2015- 2022. • Lecturer of Inorganic and Physical Chemistry 2022-now.
M. Sc. Thesis Title	Effect of indium content on the electrochemical and corrosion behavior of Pb-In alloys in acidic solutions and inhibitive action of some organic compounds''
Ph. D. Thesis Title	''The effect of antimony and indium alloying with zinc on the electrochemical and corrosion behavior of zinc in the alkaline battery electrolytes containing some additives''
Research Interests	Research has focused on unraveling corrosion mechanisms and designing corrosion resistant alloys and Electrodeposited coatings. Expertise with routine use of Electrochemistry, Scanning and Transmission Electron Microscopy, and X-ray Diffraction For Failure analysis, and For Understanding Corrosion and Passivity. Electrodeposition by using different techniques. Understanding the Electrochemical behavior of Acidic and Alkaline Batteries in detail.
Practical Experiences and Applications	<ol style="list-style-type: none"> 1) Synthesis of alloys. 2) Physical Characterization of alloys using x-ray diffraction technique and scanning electron microscope . 3) Protection of alloys against corrosion using organic and inorganic inhibitors. 4) Electro deposition of thin films on alloys and metals to protect against corrosion.
Grade Certificates	* Having a Certificate of Thanks and Appreciation for Scientific excellence in the First year in faculty of Science with Score 88.13% 2005-2006 from Faculty of Science, Sohag University.

* Having a Certificate of Thanks and Appreciation for Scientific excellence in the Second year in faculty of Science with **Score 91.8%** 2006-2007 from Faculty of Science, Sohag University.

*Having a Certificate of Thanks and Appreciation for Scientific excellence in the Third year in faculty of Science with **Score 90.2%** 2007-2008 from Faculty of Science, Sohag University.

***Having a certificate of Thanks and Appreciation for Scientific excellence after the Fourth Year with Score 92.9% in Faculty of Science (2009) from Sohag University's President.**

*** Having a Certificate of Thanks and Appreciation from Scientific Professions Syndicate To graduate with an excellent grade with Score 90.88% (overall estimate)with honors.**

***Having a Certificate from "Development of Thinking and Managerial Skills" "Knowledge Approach" from The Center for Advancement of Postgraduate Studies and Research, Faculty of Engineering, Cairo University in Cooperation with Sohag University. [28-1-2008 to 7-2-2008]**

Statistical Data Analysis (GPA 4.63)

Risk Assessment and Risk Management (GPA 4.07)

Wellness Guide Lines (Healthful Life) (GPA 3.67)

Basic Arabic Language Skills For Scientific Writing (GPA 4.50)

Accounting for Management and Decision Making (GPA 4.50)

Small Projects (GPA 3.8)

Integration of Pathways Training (GPA 4.80)

GPA out of maximum 5 points

GPA for the whole program is 4.56 points with net training hours of 75

***Transcript of the Four-year undergraduate estimates**

1-First year 2005/2006 - Excellent - 1762.7/2000 Physical Sciences Section

2-Second year 2006/2007 - Excellent - 2158/2350 Physics and Chemistry

3- Third year 2007/2008 – Excellent – 2120/2350 Chemistry Section

4-Fourth year 2008/2009 – Excellent – 2184/2350 Chemistry Section

General Grade : Excellent with Honors Total Marks 8224.75 /9050

Percentage 90.88 %

	<p>*A Certificate of Thanks and Appreciation from Scientific Professions Syndicate To get Lecturer Assistant Position , July -2015.</p> <p>* <u>Having Grade Certificates from the Faculty and Leadership Development Project</u> of:</p> <ol style="list-style-type: none"> 1-Exam systems and evaluation of students, May, 29-31, 2010 2- Ethics of scientific research, June, 8-10, 2010 3-Strategic Planning. June, 12-14, 2010 4- Quality standards in the teaching process, July, 6-8, 2010 5- Use of technology in teaching, July, 13-15,2010 6- Financial and legal aspects of university works, July, 20-22, 2010 7- Research Team Management, March, 10-11, 2018 /15 hrs. 8- Conference Organization, Mai, 20-22, 2017 /15 hrs. 9- Design and implementation of the electronic course, Oct., 14-16, 2017, 15 hrs. 10- Credit hours system, Oct. 21-23, 2017, 15 hrs. <ul style="list-style-type: none"> • A Certificate of Participation DAAD Cairo, participated in the module entitled (Ethics in Science) of the further domain “Academic Skills” within the DAAD Kairo Akademie on 15 Dec. 2013 • A Certificate in General English Course Level I at Sohag ESP Center with a percentage of 91% , Grade Excellent March, 2011 • A Certificate of Attendance of Training Course for Elementary Level of English Language in English Language Center Program Duration 36 hrs Score 96/100, October 2022
<p>General Activities in Sohag University</p>	<p>*Certificate of Thanks and Appreciation for the participation as member in Standard programs and courses criterion for getting the Accreditation from the National Authority for Education Quality Assurance, 7-2012</p> <p>* University teacher preparation, September, 19-24, 2020, from Faculty of Education.</p> <p>* Fighting corruption and introducing it, from Faculty and Leadership Development Center, August, 18-19, 2021</p>

	<p>* Concepts and basics of quality assurance, from Quality Assurance Center, Oct., 3-4, 2021.</p> <p>* Establishing an internal quality management system, from Quality Assurance Centre, Oct., 5-6, 2021.</p>
<p>List of Publications</p>	<ol style="list-style-type: none"> 1- Role of Indium Alloying with Lead as a Means to Reduce the Passivation Phenomena in Lead/Acid Batteries, Abdel-Rahman El-Sayed, Hossnia S. Mohran, and Hoda Abdel Shafy Shilkamy, vol. 2014, Article ID 932654, 16 pages, 2014. doi:10.1155/2014/ 2- Effect of Indium Alloying with Lead on the Mechanical Properties and Corrosion Resistance of Lead-Indium Alloys in Sulfuric Acid Solution, Abd EL-Rahman el-Sayed, Eslam M.M. Ibrahim, Hossnia S. Mohran, Mohamed Ismael, and Hoda Abd EL-Shafy Shilkamy, J Metallurgical and materials Transactions A, 46 A (2015) 1995-2006 3- Effect of indium alloying with lead together with the addition of phosphoric acid in electrolyte to improve lead-acid battery performance, Abdel-Rahman El-Sayed, Hossnia S Mohran, Hany M Abd El-Lateef, Hoda Abdel Shafy Shilkamy, Journal of Solid State Electrochemistry 19 (2015) 1463–1478. 4- Effect of phosphoric acid concentration on conductivity of anodic passive film formed on surface of lead–indium alloy, Abdel-Rahman El-Sayed, Hossnia S Mohran, Hoda Abdel Shafy Shilkamy, Journal of Trans. Nonferrous Met. Soc. China 26(2016) 882–894. 5- Corrosion inhibition and adsorption behavior of phytic acid on Pb and Pb–In alloy surfaces in acidic chloride solution, Hany M. Abd El-Lateef, Abdel-Rahman El-Sayed, Hossnia S. Mohran, Hoda Abdel Shafy Shilkamy, International Journal of Industrial Chemistry (2019) 10:31–47

- 6- Electrochemical Impedance Spectroscopy and Galvanostatic Charge-Discharge Behavior of Zn and Zn-In in Alkaline Media for Batteries Application, A. Elsayed, [Hoda A. El-Shafy Shilkamy](#) , Hossnia Mohran, Mahmoud Elrouby, Young Researchers Conference (2020)
- 7- Development of the electrochemical performance of zinc via alloying with indium as anode for alkaline batteries application, Mahmoud Elrouby, [Hoda A. El-Shafy Shilkamy](#), A. Elsayed, Journal of Alloys and Compounds 854 (2021) 157285\, (2021)
- 8- The impact of indium metal as a minor bimetal on the anodic dissolution and passivation performance of zinc for alkaline batteries: part I—potentiodynamic, potentiostatic, XRD, SEM, and EDAX studies, AbdEl-Rahman Elsayed, [Hoda A. El-Shafy Shilkamy](#), Mahmoud Elrouby, Journal of Solid State Electrochemistry, (2021)
- 9- The impact of indium metal as a minor bimetal on the anodic dissolution and passivation performance of zinc for alkaline batteries. Part II: galvanostatic, impedance spectroscopy, and charge–discharge, Mahmoud Elrouby, [Hoda A. El-Shafy Shilkamy](#), Abd El-Rahman Elsayed, Journal of Solid State Electrochemistry, <https://doi.org/10.1007/s10008-021-04996-w> (2021)
- 10- Tracing the influence of small additions of antimony to zinc on the hydrogen evolution and anodic dissolution processes of zinc as anodes for alkaline batteries application, Abd El-Rahman El-Sayed, [Hoda A. El-Shafy Shilkamy](#), Mahmoud Elrouby, [International journal of hydrogen energy](#),(2021)
- 11- Effect of Indium Content on the Electrochemical and Corrosion Behavior of Pb-In alloys in Acidic Solutions and Inhibitive Action of Some Organic Compounds, Abd El-Rahman El-Sayed, Hossnia Saber Mohran, [Hoda Abd El-Shafy Shilkamy Diab](#), April, 2022(**Book**) LAP Lambert Academic Publishing.
- 12- Comparison between the Charge- discharge processes of Zn-In and Zn-Sb alloys in an alkaline medium for batteries application, [Hoda A. El-Shafy Shilkamy](#), Mahmoud Elrouby, Hossnia S. Mohran, A. Elsayed, Sohag J. Sci.. 7, No. 3, 55-60 (June, 2022), 10.21608/sjsci.2022.139876.1001

13- The passivity breakdown of zinc antimony alloy as an anode in the alkaline batteries, Abd El-Rahman El-Sayed, [Hoda A. El-Shafy Shilkamy](#), Mahmoud Elrouby, Scientific Reports, <https://doi.org/10.1038/s41598-022-23741-5> , Nov. (2022)

14- The passivity breakdown of zinc-antimony as an anode in the alkaline batteries: part II- galvanostatic, impedance spectra, and charge-discharge methods, Mahmoud Elrouby, [Hoda A. El –Shafy Shilkamy](#), Abd El-Rahman El-Sayed, accepted in Korean Journal Dec.2022

15- Effect of Potassium Sulphide on the Electrochemical Behavior and Charge Discharge Processes of Zn and Zn-In alloys in 6 M KOH solution, Abd El-Rahman El-Sayed, [Hoda A. El –Shafy Shilkamy](#), Mahmoud Elrouby, Submitted

16- Effect of potassium sulfide on the corrosion behavior and charge-discharge processes for Zn and Zn-Sb alloys, Mahmoud Elrouby, [Hoda A. El –Shafy Shilkamy](#), Abd El-Rahman El-Sayed, Submitted

17- "Electrochemical and Corrosion behavior of Al in artificial water: Review", [Hoda Abd El-Shafy Shilkamy](#), Young Researchers Conference (Feb., 2023).

18- General study for the corrosion behavior of Al in artificial sea water: Review, [Hoda Abd El-Shafy Shilkamy](#), (Feb, 2023) Submitted.

Participation in Conferences

- 1- Participation in 1st Annual Science Day –Faculty of Science- Sohag University held on April 20, 2016, with Oral Presentation entitled “ Effect of Indium Content on the Electrochemical behavior of Lead in acidic medium.” Faculty of Science, Sohag University.
- 2- Participation in 2nd Annual Science Day-Faculty of Science- Sohag University held on April 19, 2017 with Oral Presentation entitled “ General Study of the Phytic acid as an organic inhibitor for Lead-Indium Alloys.”

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| | <p>3- Participation in the 3rd International Conference On New Horizons in Basic and Applied Sciences [ICNHBAS 2017], as poster entitled “ Effect of Indium Alloying with lead together with the addition of Phosphoric Acid in Electrolyte to improve Lead-Acid Battery Performance.” 5 to 7 August 2017.</p> <p>4- Participation in the 2nd International Conference on Applied Chemistry – ICAC 2017 [25-28 Nov. 2017], Poster presentation of paper titled “Synthesis of Zn-In alloys and its characterization ”</p> <p>5- Participation in the 3rd International Conference on Applied Chemistry – ICAC 2019 [23rd -26rd Nov. 2019, Hurghada , Egypt],Poster presentation titled “ Electrochemical behavior and surface studies of Zinc and Zn-Sb alloys in alkaline batteries.</p> <p>6- Participation in 5th Scientific Conference for Young Researchers (SCYR), 18 to 19-2-2020 Oral Presentation of paper titled “ Electrochemical impedance spectroscopy and Galvanostatic Charge-Discharge behavior of Zn and Zn-In in alkaline Media for batteries application.”</p> <p>7- Participation in The Fifth Annual Science Day –Faculty of Science-Sohag University 18 March 2020</p> <p>8- Participation in the 4th International Conference on Applied Chemistry (ICAC 2021) 3-6 April 2021, Hurghada, Egypt, Poster with a paper titled “Enhancement of the anti-corrosion and charge-discharge characteristics of zinc by alloying with indium as anode for alkaline battery application.”</p> <p>9- Participation in the Eighth Scientific Conference for Young Researchers "The Third International" 22-23 Feb., 2023, Sohag University, Sohag, Egypt, Paper titled “Electrochemical and Corrosion behavior of Al in artificial water: Review.”, Poster Presentation</p> <p>10- Participation in “1st Environment conference” in Sohag University, March, 6, 2023, Oral Presentation.</p> |
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Scientific Activities	<ul style="list-style-type: none"> ➤ Teaching of theoretical and practical courses in the fields of: ➤ Quantitative & Qualitative Analysis. ➤ Analytical Chemistry. ➤ Physical Chemistry. ➤ Advanced Physical Chemistry ➤ Inorganic Chemistry. ➤ Modern Instrumental Analysis (Spectra, Electrochemistry, pH, Conductance, catalysis and solid state and Potentiometry) ➤ Electrochemistry. ➤ Preparation of Complexes and its Characterization.
Experience with equipments	<ul style="list-style-type: none"> ➤ Experience in operating the SEM, XRD, Spectra (IR, UV, etc....), turbidity meter, conductivity meter, gasometer, HPLC, pH meter, potentiostat instruments Tafel Polarization, Potentiodynamic, Potentiostatic, Galvanostatic, Electrochemical impedance spectroscopy (EIS) techniques, Cyclic voltmmetry and Charging and Discharging techniques) .
IT Experiences	<ul style="list-style-type: none"> • Having a certificate of Windows Program 5-8-2006 to 30-8-2006 “ Excellent appreciation” 24 hrs. • Having a certificate for passing Excel Program 6-8-2007 to 1-9-2007 “ Excellent appreciation” 24 hrs . • Having a certificate from ICT Training Center for the attendance of the following programs(October 2009) • Passing ICT Exams (Jan-2010) 1-Basic concepts of IT (Score 89%) 2- Using Computer and Managing Files (Score 83%) 3-Word Processing (Score 92%) 4- Excel (Score 89%) 4-Presentations (Score 97%) 5-Database (Score 86%) 6-Information and Communication (Score 89%) • Having ICDL Certificate [International Computer Driving License] Syllabus Version 4.0 / 16-2-2010 • Having certificates from ICTP Center in 2012 in the following programs 1-Typing 92% (2-1-2012) 2-Using Computers and Managing Files 92% (5-1-2012) 3-Word Processing 78% (12-1-2012)

	<p>4-Spreadsheets 81% (19-1-2012) 5-Presentation 81% (26-1-2012) 6-Database 72% (2-2-2012) 7-Information and Communication 72% (9-2-2012) 8-Concepts of IT 64% (12-4-2012) 9-Introduction to Maintenance 75% (11-10-2012)</p> <ul style="list-style-type: none"> • A Certificate for passing the training of Spss Program [2 to 5 June 2018] from IT Training Center in Sohag University. • A Certificate for passing the training of Graphics Adobe PhotoShop [7 to 11 June 2018] from IT Training Center in Sohag University. • A Certificate of the Successful accomplishment of the Fundamentals of Digital Transformation Certificate[5 Mandatory Modules+2 Electives(Mobile App.- Web Editing)] 4/2021 To 3/2026 and passed the full exams from Central Unit of IT Training. <p>User for:</p> <ul style="list-style-type: none"> - Origin 6, SPSS, FrontPage and Endnote. ➤ ICDL certificate in computer by Microsoft Company. ➤ Institutional TOFEL certificate test held at ESP center with a total score of 450. ➤ · Working with data base search such as (Science direct, Springer...etc.)
<p>Participation in Workshops</p>	<p>1-Workshop "Exam preparation and question banks", 18-12-2022. 2-Training course "Program accreditation "12-12-2022. 3-"Seminar on green hydrogen from idea to application" 4-12-2022. 4-Awareness initiative (security and safety for all), 13-12-2022. 5- An educational symposium entitled (The Role of Genes in Genetic Diseases and Population Health), 29-11-2022. 6- "A lecture on ISEF arbitration standards" 26-11-2022 online. 7- Climate Day (Our climate is our life) Monday 17-10-2022. 8- "The Third Scientific Forum for Quality Assurance for a Sustainable University Milestones on the Road to Quality Assurance" 31-10-2022 Dr. Mostafa Abdel Khalek. 9-Security and Safety Symposium" 15-3-2022. 10-An educational and awareness symposium entitled First Aid at the College of</p>

Science 19-3-2022.

- **Having Certificates from Nature research academies[STDF with Egyptian Knowledge Bank] in the following workshops:**

1-Writing A Research Paper, 17-7-2022

2-Research Methodology 20-7-2022

3-Grant Writing 25-7-2022

