



FACULTY FULL NAME: Asla Abdullah Al-Zahrani

Assistant professor of Physical chemistry
Head of Scientific Research Unit and Graduate Studies
Coordinator

Personal Data

Nationality | Saudi

Department | Chemistry

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Language Proficiency

Language	Read	Write	Speak
Arabic	✓	✓	✓
English	✓	✓	✓
Others (Bahasa Malaya)	✓	✓	✓

Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2020	PhD in Physical chemistry from	Malaysia	Universiti Putra Malaysia (UPM)
2013	Masters in physical chemistry	Dammam /Saudi Arabia	Imam Abdulrahman bin Faisal University, Science College ,Chemistry Department
2004	Bachelor of Science and Education	AL-Baha /Saudi Arabia	AL Baha University , College of Education for Girls , Chemistry Department

PhD, Master, or Fellowship Research Title: (Academic Honors or Distinctions)

PhD	Synthesis and characterization of ZnO nanorods sensitized by narrow bandgap energy metal chalcogenides for photoelectrochemical application -UPM - Malaysia
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Master	Synthesis and Physical Properties Study of Some Luminescent Solar Collectors using Polymeric Media Doped with Different Dyes-IAU-Saudi Arabia
Fellowship	-

Professional Record: (Beginning with the most recent)

Job Rank	Place and Address of Work	Date
Assistant Professor	Imam Abdulrahman bin Faisal University, Science College, Chemistry Department	20/04/2021 till now
Lecturer	Imam Abdulrahman bin Faisal University, Science College, Chemistry Department	2013 till 19/04/2021
Teaching assistant	Imam Abdulrahman bin Faisal University, Science College, Chemistry Department	2008-2013
Teaching assistant	AL Baha University, College of Education for Girls, Chemistry Department	2006-2008

Administrative Positions Held: (Beginning with the most recent)

Administrative Position	Office	Date
Head of Scientific Research Unit	Vice Deanship of the College of Science for Scientific Research and Innovation	22/01/2023 till now
Graduate studies coordinator	Chemistry Department	2021 till now
Member of the Quality and Academic Accreditation Committee for Graduate Programs	Deanship of Quality & Academic Accreditation	2024 till now
Member of the Sustainability Promotion Committee, College of Science	College of science	2024 till now
The representative of the faculty of science for community service and sustainable environment in the chemistry department.	Chemistry Department	2017



The supervisor of Chemistry club	Chemistry Department	from 2015 to 2017.
Member of the Commission for Academic Accreditation and Quality	Chemistry Department	from 2011 until now
Member of the Exams Management Committee	Chemistry Department	From 2009 to 2011
Member of the Committee in Academic guidance	Chemistry Department	From 2008 to 2017
Member of the Exams Committee	Department of Computer Science	2009
Member of the Exams Committee.	Department of Mathematics	2008

Scientific Achievements

Published Refereed Scientific Researches

[Asla A. AL-Zahrani Google Scholar](#)

(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1	Saleh M Alluqmani, Hissah Saedon Albaqawi, Musaed A Hakami, Nadiyah M Alabdallah, Hana M Almarri, <u>Asla A AL-Zahrani</u> , Ahmed Alshahrie	Preparation and characterization of graphitic biochar materials derived from rose oil industry waste via different pyrolysis durations and ball milling for advanced composites	https://iopscience.iop.org/article/10.1088/2053-1591/ad3523/meta
2	Nadiyah M Alabdallah, Saleh M Alluqmani, Hana Mohammed Almarri, <u>Asla A AL-Zahrani</u>	Physical, chemical, and biological routes of synthetic titanium dioxide nanoparticles and their crucial role in temperature stress tolerance in plants	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Ezmb71EAAAAAJ&sortby=pubdate&citation_for_view=Ezmb71EAAAAAJ:hC7cP41nSMkC
3	Hussein Baqiah, Na Zhang, Mohd Mustafa Awang Kechik, Naif Mohammed Al-Hada, Sieh Kiong Tiong, <u>Asla A AL-Zahrani</u> , Jian Liu,	Crystal growth, optical, photoluminescence and magnetic properties of sol-gel GdFeO ₃ thin film	https://www.sciencedirect.com/science/article/pii/S0272884224003213



#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
	Qiang Li, Shicai Xu		
4	AlBaidani, M. M., Mishra, N. K., Alam, M. M., Eldin, S. M., <u>AL-Zahrani, A. A.</u> , & Akgul, A	Numerical analysis of magneto-radiated annular fin natural-convective heat transfer performance using advanced ternary nanofluid considering shape factors with heating source	https://link.springer.com/article/10.1007/s10854-022-09410-3
5	Woon, Jia Min, Kuan Shiong Khoo, <u>Asla A. AL-Zahrani,</u> Meznah M. Alanazi, Jun Wei Lim, Chin Kui Cheng, Nurul Tasnim Sahrin et al.	Epitomizing biohydrogen production from microbes: Critical challenges vs opportunities.	Environmental Research (2023): 115780.
6	Abboud, M., Alnefaie, R. S., <u>AL-Zahrani, A. A.</u> , Al-Zaqri, N., Haija, M. A., Al-Ghamdi, A., ... & Hamdy, M. S.	Monodispersed NiO Nanoparticles into SBA-15: An Efficient Nanocatalyst to Produce Ketone-Alcohol (KA) Oil by the Oxidation of Cyclohexane in Mild Conditions	(2023).. Sustainability, 15(7), 5817.
7	<u>AL-Zahrani, A. A.</u> , Ouerfelli, J., Holi, A. M., & .Ouerfelli, N.	Empirical modeling of the bandgap energies of $CdxZn1-xS$ in the full x-ratio range from ZnS to CdS.	(2023). Optik, 274, 170584
8	<u>AL-Zahrani, Asla A.</u> , Nasser S. Awwad, Hala A. Ibrahim, Shawkat Hayat, Hayat Ullah, Zarqa Javed, Fazal Rahim et al.	"Thiosemicarbazone derivatives as potential inhibitors of acetylcholinesterase, butyrylcholinesterase and their molecular .docking studies."	Chemical Data Collections 45 (2023): 101014
9	<u>Asla A. AL-Zahrani,</u> Adnan, Ishtiaque Mahmood, Khaleeq ur Rahman, Mutasem	Analytical Study of : (Ag-Graphene)/Blood Hybrid Nanofluid Influenced by (Platelets-Cylindrical)nanoparticles	ACS OMEGA May,5,2023



#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
	Z. Bani-Fwaz, and Elsayed Tag-Eldin	and Joule Heating via VIM	
10	Baqiah, Hussein, Mohd Mustafa Awang Kechik, Rashad Al- Gaashani, Asla A. Al-Zahrani , Naif Mohammed Al- Hada, Na Zhang, Jian Liu, and Shicai Xu.	Effects of annealing temperature on the phase formation, optical, photoluminescence and magnetic properties of sol-gel YFeO ₃ films	Ceramics International (2022).
11	Najm, A.S., Naeem, H.S., Alabboodi, K.O., Hasbullah, S.A., Hasan, H.A., Holi, A.M., Al- Zahrani, A.A. , Sopian, K., Bais, B., Majdi, H.S. and Sultan, A.J.,	Mechanism and principle of doping: realizing of silver incorporation in CdS thin film via doping concentration effect	RSC Advances Volume (12); Year (2022); Page 29613
12	Najm, A.S., Naeem, H.S., Alabboodi, K.O., Hasbullah, S.A., Hasan, H.A., Holi, A.M., Al- Zahrani, A.A. , Sopian, K., Bais, B., Majdi, H.S. and Sultan, A.J.,	New systematic study approach of green synthesis CdS thin film via Salvia dye	SCIENTIFIC REPORTS Publisher : Nature Publishing Group- (2022)
13	Zuhair R Abdulghani, Asmaa Soheil Najm, Araa Mebdir Holi, Asla Abdullah Al- Zahrani , Khaled S Al-Zahrani, Hazim Moria	Numerical simulation of quantum dots as a buffer layer in CIGS solar cells: a comparative study	SCIENTIFIC REPORTS Publisher : Nature Publishing Group –(2022)



#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
14	Araa Mebdir Holi, Zulkarnain Zainal, Asla A. Al-Zahrani *, Asmaa Kadim Ayal, and Asmaa Soheil Najm	Effect of varying AgNO ₃ and CS(NH ₂) ₂ concentrations on Performance of Ag ₂ S/ZnO NRs/ITO Photoanode	Energies – (2022)
15	Araa Medbir Holi, Ghufran abd Al-Sajada, Asla Abdullah Al-Zahrani , Asma Soheil Najm	Enhancement in NO ₂ and H ₂ -sensing performance of Cu _x O/TiO ₂ nanotubes arrays sensors prepared by electrodeposition synthesis	Nano biomedicine and Engineering, (2021)
16	M.R. Almamari and N.M. Ahmed, A.M. Holi, F.K. Yam, A.A. Al-Zahrani , M.A. Almessiere	Photoelectrochemical activity of magnetron sputtered ZnO thin films: role of thermal annealing	International Journal of Nanotechnology, (2021)
17	Al-Zahrani, A. A. , Zainal, Z., Talib, Z. A., Lim, H. N., Holi, A. M., & Bahrudin, N. N.	Enhanced photoelectrochemical performance of Bi ₂ S ₃ /Ag ₂ S/ZnO novel ternary heterostructure nanorods.	Arabian Journal of Chemistry, 13(12), 9166-9178. (2020)
18	Holi, A. M., Al-Zahrani, A. A. , Najm, A. S., Chelvanathan, P., & Amin, N	PbS/CdS/ZnO nanowire arrays: Synthesis, structural, optical, electrical, and photoelectrochemical properties	In <i>Chemical Physics Letters</i> , 750, 137486. (2020).
19	Al-Zahrani, A. A. , Zainal, Z., Talib, Z. A., Lim, H. N., Holi, A. M., & Bahrudin, N. N. (2020).	Enhanced photoelectrochemical performance of Bi ₂ S ₃ /Ag ₂ S/ZnO novel ternary heterostructure nanorods.	<i>Arabian Journal of Chemistry</i> , 13(12), 9166-9178. (2020)
20	Holi, A. M., Al-Waly, D. H., & AL-Zahrani, A. A. (2020).	Fabrication and characterization of Cu ₂ S/ZnO nanorods photoelectrode for	<i>Journal of Materials Science: Materials in Electronics</i> , 31(18), 15794-15804. (2020)



#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
		photoelectrochemical cell.	
21	Al-Sajad, G. A., Holi, A. M., AL-Zahrani, A. A. , & Najm, A. S.	Titania Nanotubes Arrays Based-Gas Sensor: NO ₂ -Oxidizing Gas and H ₂ -Reducing Gas.	Nano Biomedicine & Engineering, 12(3). (2020).
22	Al-Zahrani, A.A. , Zainal, Z., Talib, Z.A., Lim, H.N., Fudzi, L.M., Holi, A.M., Ali, M. and Sarif, M.	Effect of Annealing Temperature on the Performance of ZnO Seed Layer for Photoanode in Photoelectrochemical Cells	In <i>Defect and Diffusion Forum</i> (Vol. 398, pp. 156-166). Trans Tech Publications Ltd. (2020)
23	Al-Zahrani, A. A. , Zulkarnain Zainal, Zainal Abidin Talib, Janet Lim Hong Ngee, Laimy Mohd Fudzi, Araa Mebdir Holi and Mahanim Sarif @Mohd Ali”	“Effect of hydrothermal growth temperature and time on physical properties and photoanode performance of ZnO Nanorods	<i>International Journal of Nanoelectronics and Materials</i> ,(2020) 13(2): 341-360.(Q3/IF 2018=0.88). Publisher:Universiti Malaysia Peerlis (UniMAP)
24	AL-Zahrani, A. A. , Zainal, Z., Talib, Z. A., Lim, H. N., Mohd Fudzi, L., & Holi, A. M.	Synthesis of Binary Bi ₂ S ₃ /ZnO Nanorod Array Heterostructure and Their Photoelectrochemical Performance.	Journal of Nanomaterials, (2019)2019: 1-10. (Q2/IF 2019= 2.233). Puplicher: Hindawi Publishing Corporation.
25	AL-Zahrani, A. A. , Zulkarnain Zainal, Zainal Abidin Talib, Janet Lim Hong Ngee, , Araa Mebdir Holi and Noor Nazihah Bahrudin,	Effect of the annealing temperature on the photoconversion efficiency of heterostructured photoanode Bi ₂ S ₃ /ZnO nanorods in photoelectrochemical cells	(2019) “, special issue of the International Journal of Nanotechnology (Scopus Indexed) by Inderscience Publishers
26	AL-Zahrani, A. A. , Zainal, Z., Talib, Z. A., Lim, H. N., & Holi, A. M.	Bismuth sulphide decorated ZnO nanorods heterostructure assembly via controlled SILAR cationic concentration for enhanced photoelectrochemical cells	(2020). Materials Research Express, 7(2): 025510. (Q2/IF 2019= 1.449). Puplicher: IOP Publishing Ltd.



#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
27	AL-Zahrani, A. A., Zulkarnain Zainal, Zainal Abidin Talib, Janet Lim Hong Ngee, Laimy Mohd Fudzi, Araa Mebdir Holi and Mahanim Sarif @Mohd Ali	Effect of the heat treatment on the photoelectrochemical performance of binary heterostructured photoanode Ag ₂ S/ZnO nanorods in photoelectrochemical cells,	(2020) "Materials Science Forum under the Special Issue «Current Advances in Materials Applications» (Q3/IF 2018= 0.35). Publisher: Trans Tech Publications Ltd.
28	Al-Weally, D.H., Holi, A.M. and AL-Zahrani, A.A.,	Structural, Optical, Morphological Properties of ZnO Nanoparticle/ZnO Nanorods.	2019, September. Journal of Physics: Conference Series (Vol. 1294, No. 2, p. 022030). IOP Publishing.
29	Holi, A. M., & AL-Zahrani, A. A..	Spin Coating Technique for the Synthesis of Hexagonal CdxZn1-xS Decorated Pure ZnO Nanorods Arrays	(2020). solar cells, 16, 17
30	Holi, A.M. and Al-Zahrani, A.A.,	Preparation and improved photoelectrochemical performance of ternary nano-heterostructure of Bi ₂ S ₃ /CdS/ZnO nanorods.	Materials Research Express, 6(11), p.115073.(2019)
31	Holi, A. M., Al-Zahrani, A. A., Najm, A. S., Chelvanathan, P., & Amin, N.	PbS/CdS/ZnO nanowire arrays: Synthesis, structural, optical, electrical, and photoelectrochemical properties.	(2020). Chemical Physics Letters, 137486.
32	DALLEL, M., AL-ARFAJ, A. A., AL-OMAIR, N. A., ALKHALDI, M. A., ALZAMEL, N. O., AL-ZAHRANI, A. A., & OUERFELLI, N.	A Novel Approach of Partial Derivatives to Estimate the Normal Boiling Temperature via Viscosity Arrhenius Behaviour in N, N-Dimethylformamide+ Ethanol Fluid Systems.	(2017). Asian Journal of Chemistry, 29(9).
33	S. M. Reda, Asla A. Al-Zahrani	Ponceau 2R Doped Poly (ST/MMA) as Fluorescent Solar Collectors and Evaluation Effect of Matrix on Their Field Performance."	(2012), Open Journal of Energy Efficiency.



Refereed Scientific Research Papers Accepted for Publication

#	Name of Investigator(s)	Research Title	Journal	Acceptance Date
1-	<u>A.A. AL-Zahrani</u> et.al	Single-phase formation, crystal growth, optical and magnetic properties of sol-gel GdFeO ₃ thin film	Journal of Rare Earths	30/04/2023
2-	<u>A.A. AL-Zahrani</u> et.al	Nickel Depositing in TiO ₂ Nanotube Photoanode with Promoted Photoelectrochemical Response	Brazilian Journal of Chemical Engineering	30/04/2023

Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

#	Name of Investigator(s)	Research Title	Conference and Publication Date
1	Asla.A.AL-Zahrani	Annealing Impact on the photoelectrochemical properties of Nanocomposite: CdS/ZnO Shell-Core Nanorods Arrays	International conference and exhibition for science <u>Presenter</u>
2	Asla.A.AL-Zahrani	Methods for Graphitic biochar and carbon nanoparticles create. new veterinary application	The 6th conference of the International Society of Camelid Research and Development – ISOCARD-2023- <u>Poster</u>
3	Asla.A.AL-Zahrani		water Research Community <u>presenter</u>
4	Asla.A.AL-Zahrani	Enhanced photoelectrochemical performance of Bi ₂ S ₃ /Ag ₂ S/ZnO novel ternary heterostructure nanorods.	2 nd International webinar on science, sustainable , development and ecosystem in Saudi Arabia (SSDE'22) 12-14/02/2022
5	Asla.A.AL-Zahrani	Photoelectrochemical Performance of Nano Heterostructure of Bi ₂ S ₃ -Ag ₂ S-ZnO Nanorods	The 12 th International Fundamental Science Congress 2021 24 th -26 th /8/2021
6	Asla.A.AL-Zahrani	Bismuth sulphide decorated ZnO nanorods heterostructure assembly via controlled SILAR cationic concentration for enhanced photoelectrochemical cells	The 3 rd International Conference on Material science and nanotechnology 16 th -17 th -08/2021
7	Asla.A.AL-Zahrani, Zulkarnain Zainal,	“Bismuth sulphide decorated ZnO nanorods heterostructure assembly	6 th International Conference on Nanotechnology, Nanomaterials &



	Zainal Abidin Talib, Janet Lim Hong Ngee, Araa Mebdir Holi (2019)	via controlled SILAR cationic concentration for enhanced photoelectrochemical cells,”	Thin films for Energy Applications(27-29 July 2019). The National Energy University, Kuala Lumpur, Malaysia. (<u>Best Presenter Award</u>)
8	Asla.A.AL-Zahrani , Zulkarnain Zainal, Zainal Abidin Talib, Janet Lim Hong Ngee, Araa Mebdir Holi	Effect of the annealing temperature on the photoconversion efficiency of heterostructured photoanode Bi ₂ S ₃ /ZnO nanorods in photoelectrochemical cells,”	“International Symposium on Advanced Materials & Nanotechnology (i-SAMN 2019) (19-20th August 2019 at Putrajaya Marriott Hotel, Malaysia.
9	Asla.A.AL-Zahrani , Zulkarnain Zainal, Zainal Abidin Talib, Janet Lim Hong Ngee, Laimy Mohd Fudzi, Araa Mebdir Holi and Mahanim Sarif @Mohd Ali (2019) “	Effect of the heat treatment on the photoelectrochemical performance of binary heterostructured photoanode Ag ₂ S/ZnO nanorods in photoelectrochemical cells,”	11th International Fundamental Science Congress 2019 (IFSC 2019), 30-31 October 2019, Palm Garden Hotel, IOI Resort City, Putrajaya, Malaysia. (<u>Best Poster Reward</u>)

Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research Title	Report Date

Current Researches

#	Research Title	Name of Investigator(s)
1	Characterization Techniques for Antimony Chalcogenide Photovoltaics (Elsevier Chapter of Book)	Asla A. Al-Zahrani; Md Shahariar Chowdhury et.al
2	Concentrating Perovskite Solar Module: A Pathways towards 40% efficiency solar panel	Asla A. Al-Zahrani; Fahad Al-Amri, Tapas K Mallick & Md. K Nazeeruddin
3	Advancements in MXene Synthesis: Novel Methods and Emerging Applications	Asla A. Al-Zahrani

Contribution to Scientific Conferences and Symposia



#	Conference Title	Place and Date of the Conference	Extent of Contribution
	The Green Sustainable Future In The Kingdom Of Saudi Arabia	29-30/01/2025	Poster
	KFUPM Research Forum 2024	1 October 2024	Attendance
	The Green Sustainable Future In The Kingdom Of Saudi Arabia	30-31/01/2024	Attendance
	12 th International conference & exhibition on chemistry in industry (chemindx2024)	26-28 November 2024	Attendance
	King Faisal University The 6th Conference of ISOCARD "Role of Camel in Food Security and Economic Development	12-16th March 2023- KFU- Ahsa- KSA	Poster
	International Conference and exhibition for Science	6-8/02/2023- KSU- Riyadh	Oral presentation (Annealing Impact on the photoelectrochemical properties of Nanocomposite: CdS/ZnO Shell-Core Nanorods Arrays)
	The 2nd International Webinar on Science, Sustainable, Development and Ecosystems in Saudi Arabia " SSDE22"	14 th -17 th /02/2022 -KSA	Oral presentation
	A distinctive experience for the career guidance and counseling program for the university professor	20-01-2022- KSA	Oral presentation



	The 12 th International Fundamental Science Congress 2021	24 to 26 August 2021- Malaysia	Oral presentation (Photoelectrochemical Performance of Nano Heterostructure of Bi ₂ S ₃ -Ag ₂ S-ZnO Nanorods)
	“3rd International Conference on Material science & nanotechnology	August 16-17, 2021, at Lisbon, Portugal	Oral presentation “Bismuth sulfide decorated ZnO nanorods heterostructure assembly via controlled SILAR cationic concentration for enhanced photoelectrochemical cells”
1	6th International Conference on Nanotechnology, Nanomaterials & Thin films for Energy Applications.	(27-29 July 2019). The National Energy University, Kuala Lumpur, Malaysia	Oral presentation. (<u>Best Presenter Award</u>)
2	“International Symposium on Advanced Materials & Nanotechnology (i-SAMN 2019)	(19-20th August 2019 at Putrajaya Marriott Hotel, Malaysia.	Oral presentation
3	11th International Fundamental Science Congress 2019 (IFSC 2019),	30-31 October 2019, Palm Garden Hotel, IOI Resort City, Putrajaya, Malaysia.	Poster - (<u>Best Poster Reward</u>) { the RSC Congress Poster }

Membership of Scientific and Professional Societies and Organizations

- Saudi Chemical Society
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Teaching Activities

Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
	Surface chemistry and catalysis	CHEM507	Lecture
1	Research project		Lecture
2	Physical Chemistry I	CHEM201	Lecture
3	Physical Chemistry II	CHEM207	Lecture
4	Chemistry of corrosion	CHEM502	Lecture
5	General Chemistry (I)	CHEM203	Lecture
6	General Chemistry (II)	CHEM207	Lecture



7	Chemical Kinetic Reaction and mechanism	CHEM402	Lecture
8	Safety in the laboratory	CHEM206	Lecture
9	Surface chemistry and catalysis	CHEM507	Lecture
10	General Chemistry (1)	CHEM203	labs
11	General Chemistry (2)	CHEM207	labs
12	Physical Chemistry (Thermodynamics)	CHEM306	labs
13	Physical Chemistry (electricity -1)		labs
14	Physical Chemistry (electricity -2)		labs
15	Physical Chemistry (phase rule).		labs
16	Physical Chemistry (surface chemistry and catalysis colloids).		labs
17	Organic Chemistry (2).		labs
18	Organic Chemistry in the Department of Biology		labs
19	Analytical Chemistry.		labs
20	Chemistry of transition elements.		labs
21	Physical Chemistry (kinetics of chemical reactions)		labs
22	Computer Applications in Chemistry		labs
23	Biochemistry		labs

Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)

Chemistry of Corrosion/CHEM512 This course gives a general introduction to corrosion chemistry, and the relation between free energy and corrosion cell potential. Types of corrosion and electrochemical cells are discussed. Kinetics of corrosion and electrochemical polarization are covered during the course. Finally, corrosion protection will be studied in detail including anodic protection, cathodic protection, painting, corrosion control technologies, and corrosion control by inhibitors.



Physical Chemistry II Physical chemistry II focuses on thermodynamics which is the study of the interrelation of heat and work with chemical reactions or with physical changes of state within the confines of the laws of thermodynamics.

This course emphasizes on the process during which the energy transfer from one place to another and from one form to another. The chemical thermodynamics involves not only laboratory measurements of various thermodynamic properties, but also the application of mathematical methods to the study of chemical reactions and the spontaneity of processes – it predicts whether the reaction will occur or not. The structure of course is based on the four laws of thermodynamics. From these laws, a multitude of equations relating to the thermodynamic properties of the system can be derived using relatively simple mathematics. One of the important applications of thermodynamics to chemistry is phase transitions.

Physical Chemistry I is the second course introducing General Chemistry. The course is divided into two parts: lectures and practical content.

General Chemistry II deals mainly with an introduction to the states of matter: solid, liquid and gaseous state, gas laws, and kinetic theory of gases. This course includes types of solutions, ideal and non-ideal solutions, and colligative properties, chemical and ionic equilibrium. Thermochemistry, energy changes in chemical reactions, acid-base equilibrium, buffer solutions as well.

The practical part is covering topics that include some experiments on viscosity of liquids, density of liquids and solids, determining the molar mass of volatile liquids, measuring heat of enthalpies, distribution coefficient, and pH of solutions.

Surface Chemistry and Catalysis /CHEM507; This course gives a general introduction to surface chemistry and its applications. The course focuses on surface tension phenomena and its estimation methods. The course includes classification of adsorptions and types of adsorption isotherm. Topics covered also include catalysis and the types of catalysts, methods of preparations, properties, and kinetics of homogeneous catalysts. Heterogeneous catalysts will be discussed in detail. Enzymes as a type of catalyst are also discussed.

Chemical Kinetic Reaction and mechanism course / CHEM402 aims to study of chemical processes and rates of reactions. This includes the analysis of conditions that affect speed of a chemical reaction, understanding reaction mechanisms and transition states, and forming mathematical models to predict and describe a chemical reaction.

General Chemistry II / CHEM207 : is the second course introducing General Chemistry. The course is divided into two parts: lectures and practical content.

General Chemistry II deals mainly with an introduction to the states of matter: solid, liquid and gaseous state, gas laws, and kinetic theory of gases. This course includes types of solutions, ideal and non-ideal solutions, and colligative properties, chemical and ionic equilibrium. Thermochemistry, energy changes in chemical reactions, acid-base equilibrium, buffer solutions as well.

The practical part is covering topics that include some experiments on viscosity of liquids, density of liquids and solids, determining the molar mass of volatile liquids, measuring heat of enthalpies, distribution coefficient, and pH of solutions



General chemistry(I)/ CHEM203 course covers these fundamental subjects:
Chemical foundations, atoms, Molecules, and Ions, stoichiometry, types of chemical reactions and solution stoichiometry, atomic structure and periodicity, bonding: general concepts and covalent bonding: orbitals.

Postgraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	--		
2			

Brief Description of Postgraduate Courses Taught: (Course Title – Code: Description)

1	--
2	

Course Coordination

#	Course Title and Code	Coordination	Undergrad.	Postgrad.	From	To
1	Surface Chemistry and catalysis	✓	✓		2022	
2	Physical Chemistry (kinetics of chemical reactions)	✓	✓		2016	2017
3	Biochemistry	✓	✓		2015	2016

Guest/Invited Lectures for Undergraduate Students

#	Activity/Course Title and Code	Subject	College and University or Program	Date

Student Academic Supervision and Mentoring

#	Level	Number of Students	From	To
	5 th	18	2020	Now

Supervision of Master and/or PhD Thesis



#	Degree Type	Title	Institution	Date

Ongoing Research Supervision

#	Degree Type	Title	Institution	Date
1	MSc	Synthesis and Characterization of 2D Mxene-Titanium Dioxide Nanocomposites-Application in the Photodegradation of Organic Pollutants	IAU	2022

Administrative Responsibilities, Committee and Community Service (Beginning with the most recent)

Administrative Responsibilities

#	From	To	Position	Organization
	2020	now	Postgraduate students committee coordinator	Chemistry Department
	2023	now	Head of Scientific Research Unit	Vice Deanship of the College of Science for Scientific Research and Innovation @ Science college .
	2024	now	Member of the Quality and Academic Accreditation Committee for Graduate Programs	Deanship of Quality & Academic Accreditation
	2024	now	Member of the Sustainability Promotion Committee, College of Science	College of science

Committee Membership

#	From	To	Position	Organization
1	2019	now	Member	INSTITUT KIMIA MALAYSIA Malaysian Institute of Chemistry
2	2020	now	Member	Saudi Chemical Society



3	2020	now	Member	American chemical society
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Scientific Consultations

#	From	To	Institute	Full-time or Part-time
1	2022	NOW	Manarat AL-Dammam Schools	Part time
2				

Volunteer Work

#	From	To	Type of Volunteer	Organization
1	2019	2020	Member of club	Saudi Club in Kuala Lumpur
2	2022	now	Supervisor	creative Olympics for Science-Mawhiba
3	2019	Sep.2022	Member	Rawasn for Saudi Academic Writing
4	2021	now	Board member (academic committee)	Manarat Dammam Schools
5	2021	Now	Training graduates of chemistry department	Training unit
6	2019	2022	Rawasan academy for academic writing	Saudi academics via twitter
7	2020	Now	Guest editor at Energies journal (MDPI)	Energies journal (MDPI)
	2023	Now	Guest editor at Baghdad journal	Baghdad university

Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

1	Leading international computer skills certification-ICDL (80 hours)
2	Training of Trainers (TOT) (120 hours)
3	Chemical training Bag { important skills for the data analysis and graphing software Origin Pro; laboratory safety; GATD (basic care: CPR &AED); Xpert high score software Principle)

Last Update

1/17/2025

