

Personal Information

Name: Rami Abdel-Majid Mohammad Abdel-Rahem
Family Statuses: Married and have four children
Nationality: Jordanian
Date of Birth: 14 November/1974
Place of Birth: As Sarih/Irbid/Jordan
Address: Albnyyat-Amman –Jordan,
Email Address: rabdelrahem@uop.edu.jo



Education

1. Doctor of Natural Science (Doctor rerum naturalium)/Physical Chemistry

Date of obtaining the degree: October 2003
Name of the University: University of Bayreuth
Location: Germany/Bayreuth/Department of Physical Chemistry I
PhD thesis title: Phase Behaviour and Structural Transitions in the Mixtures of Cationic Surfactants and Hydrophobic Counterions
Name of the supervisor: Prof. Dr. Heinz Hoffmann
Thesis in the internet: <http://opus.ub.uni-bayreuth.de/volltexte/2003/59/index.html>

2. Master of Science (M.Sc.)/Applied Chemistry

Date of obtaining the degree: October 2000
Name of the University: Jordan University of Science and Technology
Location: Jordan/Irbid/Department of Applied Chemical Science
PhD thesis title: Physiochemical Studies on Selected Technical Surfactant Systems in Aqueous Media
Name of the supervisor: Dr. Bassam Bitar

3. Bachelor of Science (B.Sc.)/Applied Chemistry

Date of obtaining the degree: October 1996
Name of the University: Jordan University of Science and Technology
Location: Jordan/Irbid/Department of Applied Chemical Science

4. High School Diploma

Date of finishing the study: 1992
Name of the School: As Sarih Secondary School
Location: As Sarih/ Irbid /Jordan

Work Experience

1/9/2022-Until Now

President of Petra University, Jordan, Amman, P.O Box: 961343 - code: 11196.

<https://www.uop.edu.jo/en/Administration/OfficeOfThePresident/Pages/PresidentMessage.aspx>

1/9/2018-31/8/2022

Dean of Faculty of Arts and Sciences at University of Petra, College of Arts and Sciences, Jordan, Amman, P.O Box: 961343 - code: 11196.

<https://www.uop.edu.jo/En/Academics/FacultyofArtsandSciences/Pages/default.aspx>

1/9/2017-31/8/2018

Vice Dean of Faculty of Arts and Sciences at University of Petra, Department of chemistry, College of Arts and Sciences, Jordan, Amman, P.O Box: 961343 - code: 11196.

https://www.uop.edu.jo/en/Pages/MemberDetails.aspx?ItemID=1036#.Vt_smfkrKM8

1/9/2014-31/8/2018

Head of Chemistry Department at University of Petra, Department of chemistry, College of Arts and Sciences, Jordan, Amman, P.O Box: 961343 - code: 11196.

https://www.uop.edu.jo/en/Pages/MemberDetails.aspx?ItemID=1036#.Vt_smfkrKM8

1/5/2017-Until Now

Professor of Physical Chemistry at University of Petra, Department of chemistry, College of Arts and Sciences, Jordan, Amman, P.O Box: 961343 - code: 11196.

https://www.uop.edu.jo/en/Pages/MemberDetails.aspx?ItemID=1036#.Vt_smfkrKM8

1/9/2013-1/9/2014

Associate Professor of Chemistry at University of Petra, Department of chemistry, College of Arts and Sciences, Jordan, Amman, P.O Box: 961343 - code: 11196.

https://www.uop.edu.jo/en/Pages/MemberDetails.aspx?ItemID=1036#.Vt_smfkrKM8

15/02/2011-1/9/2013

Associate Professor of Chemistry at King Faisal University College of Science, Chemistry Department, Saudi Arabia, Al-Ahsa, Qatar Street, P.O Box: 400, (Alhafouf) 31982, Tel: 00966568374784. Dr. Abdel-Rahem was a member of quality and accreditation committee at college of Science KFU. He was also the member in the science college website developing committee. <http://www.kfu.edu.sa>

2005 – 15/02/2011

Assistant Professor of Chemistry at King Faisal University College of Science and Al-Hassa Teachers College, Saudi Arabia, Al-Ahsa, Qatar Street, P.O Box: 2313, (Alhafouf) 31982, Tel: 00966568374784. Dr. Abdel-Rahem was the head of chemistry section. He is

also the coordinator of social committee and a member of computer and information center at Al-Ahsa teachers college. (The teacher college was joined to King Faisal University at 2007). <http://www.kfu.edu.sa>

2003 – 2005

Faculty Member of Chemistry at University of Al-Mergeb, Libya, Alkhoms, Faculty of Science and Arts Department, Chemistry Department, P.O Box: 40770, Tel: (0021821) 31-621912-119 and (0021821) 31-621911-119, Fax: 00218-31-625953. Dr. Abdel-Rahem was the coordinator of higher studies at chemistry department. <http://www.elmergib.edu.ly/modules/aboutUniversity>

2000 – 2003

Research and Teaching Assistant (during PhD program) at University of Bayreuth, Germany, Department of Physical Chemistry I, Bayreuth 95440. Mr. Abdel-Rahem was assigned to teach Practical Physical Chemistry, supervise undergraduate projects and doing research on industrial projects for Cognis Company (the company was later joined to Henke Company, Germany, Düsseldorf). The projects included: controlling the dissolution rate of surfactants hard table, controlling Krafft temperature of surfactant and performing physiochemical investigations on new modified hydroxyl mixed ether polymeric surfactants. <http://www.uni-Bayreuth.de>

1998 – 2000

Research and Teaching Assistant (during master program) at Jordan University of Science and Technology, Jordan- Irbid-Department of Applied Chemical Science. P.O Box (3030), Irbid 22110 Jordan. Tel: (00962-2) 295111, Fax: (00962-2) 295019. Mr. Abdel-Rahem was assigned to teach the following courses: Industrial Chemistry laboratories, General Chemistry laboratories and Analytical Chemistry laboratories. <http://www.just.edu.jo>

1997-1998

Analyst at Quality Control Unit at Al-Riyedh Company for Detergent Industry, Sahab, Jordan. The work involved the routine analysis [quality assurance] of food oil, soap, and detergent industries.

1996-1997

Teacher of Chemistry at the Ministry of Education, (Jordan-Irbid) Mr. Abdel-Rahem was assigned to teach the chemistry and science courses for secondary and elementary school levels.

List of Publications

2022

1. Rami A. Abdel-Rahem, Sana Niaz, Abdelmnim M. Altwaiq, Muayad Esaifan, Mohammad Bassam Al Bitar, and Abeer Al Bawab, Synergistic Interaction between Sodium Dodecyl Benzene Sulfonate (SDBS) and N,N-Dimethyldodecan-1-amine Oxide (DDAO) and Their Adsorption onto Activated Charcoal and Jordanian Natural Clay, accepted in *Tenside Surfactants Detergents*, 59 (2), 144-158 (2022).
2. Rami A. Abdel-Rahem, Sana Niaz, Abdelmnim M. Altwaiq, Muayad Esaifan, Ehab AlShamaileh, and Abeer Al Bawab, Sodium Dodecyl Benzene Sulfonate (SDBS) and N,N-Dimethyldodecan-1-amine Oxide (DDAO) in Single and Mixed Systems as Corrosion Inhibitors of Zinc in Hydrochloric Acid, accepted in *Tenside Surfactants Detergents*.

2021

3. Nisrein Jabera, Faisal Al-Akayleh, Rami A. Abdel-Rahem, Mayyas Al-Remawib *Characterization ex vivo skin permeation and pharmacological studies of ibuprofen lysinate-chitosan-gold nanoparticles*, *Journal of Drug Delivery Science and Technology* Volume 62, April 2021, 102399.
4. Ahmad Q. Daraosheh, Hassan Abul-Futouh, Rami A. Abdel-Rahem, Helmar Görts, Hans-Dietrich Stachel, Wolfgang Weigand, Synthesis and Electrochemical Investigations of the [FeFe]-Hydrogenase H-Cluster Mimics Mediated by Bicyclic Dithiols Derivative, 647(8) 2021, 931-936, <https://doi.org/10.1002/zaac.202000439>.
5. Abdel-Rahem, R.A., Al-Remawi, M., Daraosheh, A.Q. *et al.* Rheological behavior of wormlike micelles (WLMs) in alcohol/water mixed solvent: influence of alcohol chain length. *Colloid Polym Sci* 299, 1337–1351 (2021). <https://doi.org/10.1007/s00396-021-04852-3>
6. Abdel-Rahem, R.A., Al-Remawi, M., Clinckspoor, K.J. *et al.* Comparison of the influence of 1-propanol and of 2-propanol on the viscoelastic solutions of cetyltrimethylammonium bromide (CTAB) and sodium salicylate (NaSal). *Colloid Polym Sci* 299, 1967–1978 (2021), <https://doi.org/10.1007/s00396-021-04916-4>

2020

7. AM Altwaiq, JK Sa'ib, RA Abdel-Rahem, AK Alkhalwaldeh, Conductivity Method as a New Monitoring Technique for Corrosion and Corrosion Inhibition Processes of Zinc Metal, *American Journal of Analytical Chemistry* 11 (10), 349
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2019

- 8.** Rami A. Abdel-Rahem, Nabil M. Eldurini, Abdelmnim M. Altwaiq1, Saleh Qutaishat, Ahmad Q. Daraosheh and Hana', Adsorption of Single and Mixed Surfactants onto Jordanian Natural Clay, Tenside Surfactants Detergents, 2019 (56)2, 150-157, **<https://doi.org/10.3139/113.110613>**
- 9.** Altwaiq, A.M., Abdel-Rahem, R.A., Reaction between Zinc and Hydrochloric Acid in Solutions Containing Alkyltrimethylammonium Bromide C_nTAB ($n = 8, 10, \text{ and } 12$) Cationic Surfactants: Influence of Surfactant Chain Length, Journal of Surfactants and Detergents. 22(4) 2019, 845-853, DOI: **<https://doi.org/10.1002/jsde.12262>**

2018

- 10.** Emad AM Farrag, Rami A. Abdel-Rahem, SS Ibrahim3 and Ayman S Ayesh, Electrical and optical properties of welldispersed MWCNTs/PVA nanocomposites under different pH conditions, accepted in Journal of Thermoplastic Composite Materials, DOI:**[10.1177/0892705718759705](https://doi.org/10.1177/0892705718759705)**
- 11.** Rheological and electrical properties of multiwalled carbon nanotubes–polyvinyl alcohol nanocomposites treated at different pH conditions, accepted in Journal of Thermoplastic Composite Materials, DOI: **[10.1177/0892705718799831](https://doi.org/10.1177/0892705718799831)**

2017

- 12.** S.S. Ibrahim, Ayman S Ayesh and Rami A. Abdel-Rahem, Investigation on the physical properties of multiwalled carbon nanotube–polystyrene nanocomposites treated with 2,3-hydroxy-2-naphthoic acid, Journal of Thermoplastic Composite Materials, (2017) 30(8): 1120-1135, DOI: **[10.1177/0892705715618738](https://doi.org/10.1177/0892705715618738)**

2016

- 13.** Rami A. Abdel-Rahem, Abdelmnim M. Altwaiq, Eman S. Zaben and Mohammad M. Alnass'a, Zinc Corrosion in Acidic Solutions Containing Single and Mixed Surfactants, Journal of Surfactants and Detergents, (2016) 19:353–362. DOI: **[10.1007/s11743-015-1782-](https://doi.org/10.1007/s11743-015-1782-7)**

2015

- 14.** Altwaiq, A., Rami Abdel-Rahem, AlShamaileh, E., Al-luaibi, S., Khouri, S., Sodium lignosulfonate as a friendly-environment corrosion inhibitor for zinc metal in acidic media, Eurasian Journal of Analytical Chemistry, 10 (1),(2015) pp. 10-18.

2014

- 15.** Rami A. Abdel-Rahem, Martin Reger, Matthias Hloucha and Heinz Hoffmann, (Rheology of Aqueous Solutions Containing Texapon, Betaine and Microemulsion: Influence of Co-surfactant and Salt), Journal of Dispersion Science and Technology, 35:64-75 (2014). **DOI:10.1080/01932691.2013.774282**
- 16.** Rami A. Abdel-Rahem, Ayman S. Ayesh, S. S. Ibrahim, Abdullah A. Al-Jaafari, Nadeem S. Sheikh¹, and Essam Yasin, Novel Dispersion of MWCNTs in Polystyrene Polymer Induced by the Addition of 3- Hydroxy-2-naphthoic Acid, Journal of Dispersion Science and Technology, 36(6), (2014), 353-362. **DOI:10.1080/01932691.2013.795117**
- 17.** Rami A. Abdel-Rahem (Influence of 1,3-Butanediol on the of Viscoelasticity of surfactant solutions), Journal of Surfactants and Detergents, March 2014, Volume 17, Issue 2, pp 353-362 **DOI: 10.1007/s11743-013-1475-z**
- 18.** Rami Abdel-Rahem and Faisal al-Odail, The Influence of Surfactants Synergism on the Adsorption Behavior at Air/Water and Solid/Water Interfaces, Journal of Dispersion Science and Technology, Volume 35, Issue 7, pp 1009-1017, DOI:10.1080/01932691.2013.826135
- 19.** Ayman S. Ayesh, S. S. Ibrahim, Abdullah A. Al-Jaafari, Rami A. Abdel-Rahem, Nadeem S. Sheikh, and H. Mahfoz Kotb, Electrical and Mechanical Properties of β -Hydroxynaphthoic Acid-MWCNTs Polystyrene Nanocomposites Journal of Thermoplastic Composite Materials 28(6), (2014) 863-878. **DOI: 10.1177/0892705714533374**

2013

- 20.** Rami Abdel-Rahem and Jibril Al-Hawarin, (Rheological Investigations on the Viscoelastic Properties of alkyimethylammonium 2-hydroxy-1-carboxy-naphthoate and 2-hydroxy-1-carboxy-naphthoate in aqueous Solutions), Journal of Dispersion Science and Technology (2013) 34:55–63. **DOI: 10.1080/01932691.2011.646619**
- 21.** Rami A. Abdel-Rahem, (The Adsorption of Newly Hydroxyl Mixed Ether Nonionic Polymeric Surfactants at Air/Water and Solid/Water Interfaces: Influence of Surfactant
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Molecular Structure), Journal of Surfactants and Detergents (2013), Volume 16, Issue 1, pp 123-130. DOI: **10.1007/s11743-012-1361-0**

22. Rami A. Abdel-Rahem, The Influence of Glycerol Addition and Temperature on the Phase Behavior and Micellization of CTAB and SDS in Aqueous Solutions, Journal of Dispersion Science and Technology (2013) 34:932–940. DOI:**10.1080/01932691.2012.731647**

2012

23. Jibril Al-Hawarin, Ayman S. Ayesh and Rami A. Abdel-Rahem, (Dielectric and Thermal Properties of PEO Doped with Cadmium Chloride salt), Chinese Journal of Polymer Science, Volume 30, Number 2 (2012), 143-151. DOI: **10.1007/s10118-012-1106-6**
24. Rami A. Abdel-Rahem, (Micellar Parameters in Solutions with Cationic Surfactants and N,N-dimethyldodecylamine oxide: Influence of Cationic Surfactants Chain Length), Chemical and Engineering Data (2012) 57, 957–966. DOI: dx.doi.org/10.1021/je201107a
25. Rami A. Abdel-Rahem, (1,3-butanediol as a co-solvent for the surfactant solutions), Colloid Polymer Science (2012) 290:907–917. DOI **10.1007/s00396-012-2603-4**

2011

26. R. Abdel-Rahem, (Effect of Glycerol on the Swelling of Multilamellar Vesicles Composed of Cetyltrimethylammonium Bromide and Sodium Hydroxy-naphthoate), Journal of Dispersion Science and Technology, Volume 32, Issue 6, 2011 784-794. DOI: **10.1080/01932691.2010.488131**
27. Rami Abdel-Rahem, Ayman Ayoub, Jibril Al-Hawarine and Ayman Ayesh, (The Influence of Surfactant's Synergism on the Solubilization of Some Fluorescent Compounds), Tenside Surfactants Detergents. 48 (2011) 6, 445-451. DOI: **10.3139/113.110151**

2010

28. Ayman S. Ayesh and Rami Abdel-Rahem, (Effect of Ba_{0.9725}(Ti_(0.9)Sn_{0.1})O₃ Ceramic Doping on the Optical, Thermal and Dielectric Properties of Polycarbonate Host), Bulletin of Materials Science, Volume 33, Number 5 (2010), 589-595. DOI: **10.1007/s12034-010-0090-0**
29. H. Hoffmann and R. Abdel-Rahem, (Influence of co-solvent on the rheological behavior of aqueous viscoelastic surfactant systems), Colloid Polymer Science (2010) 288:603–612. DOI 10.1007/s00396-010-2196-8
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2009

- 30.** R. Abdel-Rahem and A. S. Ayesh, (Physiochemical Properties of Hydroxy Mixed Ether HME_n Surfactants and their Interaction with Sodium Dodecyl Sulfate SDS), Tenside Surfactants Detergents 2009/02, Page 105-111, **DOI: 10.3139/113.110013**
- 31.** Rami Abdel-Rahem, (Synergism in Mixed Anionic–Amphoteric Surfactant Solutions: Influence of Anionic Surfactant Chain Length). Tenside Surfactants Detergents, 2009/05, Page 298-305. **DOI: 10.3139/113.110035**

2008

- 32.** R. Abdel-Rahem and A. S. Ayesh, (Surface Activity of Newly Nonionic Surfactants at Air/Water Interface and their Interaction with Clay and Teflon), Tenside Surfactants Detergents 2008/03, Page 137-143. **DOI: 10.3139/113.100371**
- 33.** R. Abdel-Rahem, (The influence of hydrophobic counterions on micellar growth of ionic surfactants), Advances in Colloid and Interface Science, Volume 141, Issues 1-2, 1 September 2008, Pages 24-36. **DOI:10.1016/j.cis.2008.02.002**
- 34.** Ayman S. Ayesh and Rami A. Abdel-Rahem, (Optical and Electrical Properties of Polycarbonate/MnCl₂ Composite Films), Journal of Plastic Film and Sheeting, Vol. 24, No. 2, 109-124 (2008), **DOI:10.1177/8756087908094854**

2007

- 35.** R. Abdel-Rahem, and H. Hoffmann(Novel Viscoelastic Systems from a Cationic Surfactant and a Hydrophobic Counterion: influence of surfactant chain length) Journal of Colloid and Interfacial Science, Volume 312, Issue 1, 1 August 2007, Pages 146-155. **DOI: <http://dx.doi.org/10.1016/j.jcis.2006.09.023>.**
- 36.** R. Abdel Rahem, (Formation of Multilamellar Vesicles in the Systems of Decyltrimethylammonium hydroxides/2-hydroxy 1-carboxynaphthoate and Octyltrimethylammonium hydroxides/2-hydroxy 1 carboxynaphthoate), Tenside Surfactants Detergents 2007/03, Page 168-175. **DOI: 10.3139/113.100337**
- 37.** R. Abdel-Rahem and J. Al-Hawarin, (Dissolution Rate of Sodium Fatty Alcohol Sulfate FAS – Surfactants), Tenside Surfactants Detergents 2007/05, Page 260-265. **DOI: 10.3139/113.100345**
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2006

- 38.** R. Abdel-Rahem and H. Hoffmann, (The Distinction of Viscoelastic Phases from Entangled Worm Like Micelles and of Densely Packed Multilamellar Vesicles on the Basis of Rheological Measurements) *Rheologica Acta* (2006) 45: 781-792.

DOI: <http://dx.doi.org/10.1007/s00397-006-0101-7>

2005

- 39.** Rami Abdel-Rahem, (The Influence of Hydrophobic Counterions on the Phase behaviour of Ionic Surfactants). *Tenside Surfactants Detergents* 42 (2005) 2, 95-101. DOI: 10.3139/113.100241

- 40.** R. Abdel-Rahem, M. Gradzielski, and H. Hoffmann, (A Novel Viscoelastic System from a Cationic Surfactant and a Hydrophobic Counterion) *Journal of Colloid and Interfacial Science*, 288, 2, (2005), 570-582. DOI: <http://dx.doi.org/10.1016/j.jcis.2005.03.040>

2004

- 41.** Jingchen Hao, Jingzheng Wang, Weimin Lie, Rami Abdel-Rahem and Heinz Hoffmann, (Zn²⁺-Induced Vesicle Formation), *J. Phys. Chem. B* (2004) 108, 1168-1172. DOI: <http://dx.doi.org/10.1021/jp0357368>

- 42.** R. A. El-Ghazawy, R. Abdel Raheem, A. M. Al-Sabagh (Surface activity - thermodynamic properties and light scattering studies for some novel aliphatic polyester surfactants), *Polymers for Advanced Technologies* Volume 15, Issue 5, Date: May 2004, Pages: 244-250, DOI: <http://dx.doi.org/10.1002/pat.375>

- 43.** A.M. Al-Sabagh, M.E. Abdul-Raouf and R. Abdel-Raheem, (Surface activity and light scattering investigation for some novel aromatic polyester amine surfactants), *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, Volume 251, Issues 1-3, 20 December 2004, Pages 167-174, DOI: <http://dx.doi.org/10.1016/j.colsurfa.2004.07.012>

Posters

1. "Effect of Glycerol on the Swelling of Multilamellar Vesicles Composed of Cetyltrimethylammonium Bromide and Sodium Hydroxy-naphthoate, Poster" Second Scientific Day of the College of Science, KFU, Saudi Arabia. 2013
 2. "Phase studies between alkyltrimethyl ammonium hydroxides and 2-hydroxy-1-naphthoic acids, Poster" First Scientific Day, College of Science, KFU, Saudi Arabia. 2012.
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3. Phase studies between alkyltrimethyl ammonium hydroxides and 2-hydroxy-1-naphtoic acids” Bayreuth University, Germany. 2003
4. Phase studies between Cetyltrimethyl ammonium hydroxide and various hydroxy-naphtoic Acids” Heidelberg University, Germany. 2001.

Projects

1. Role of Single and Mixed surfactants in Metals Corrosion Inhibition by Rami Abdel-Rahem and Mayas Al Rimawi, Jordan, University of Petra, Starting from 1/1/2022, Total Fund: 7,000 JD (10,000 USD).
 2. Viscoelastic Properties of Cetyltrimethylammonium Bromide in Ethanol/Water and Oleic Acid/Water Mixed Solvent by Rami Abdel-Rahem and Mayas Al Rimawi (Phase 2), 2020-2021, Jordan, University of Petra, Total Fund: 30,000 JD (42,313 USD).
 3. Viscoelastic Properties of Cetyltrimethylammonium Bromide in Ethanol/Water and Oleic Acid/Water Mixed Solvent, (Phase 1) by Rami Abdel-Rahem and Mayyas Al Rimawi 2019-2020, Jordan, University of Petra, Total Fund: 13,454 JD (18,976 USD).
 4. Powerful anti-arthritis nanogold-chitosan ibuprofen gel viscoelastic behavior by Mayyas Al Rimawi and Rami Abdel-Rahem, 23/1/2020-31/12/2020, Jordan, University of Petra, Total Fund: 12000 JD (16,925 USD).
 5. Synthesis and electro-catalytic Activity of [FeFe]-Hydrogenase Model Complex by Ahmad Al Darawsheh, Rami Abdel-Rahem and Hasan Abu Afutooh Muayad Seifan, Abdelminum Altwaiq, Jordan, University of Petra, Total Fund: 24500 JD (34,556 USD).
 6. Synthesis of high surface area, mesoporous zeolites for drug delivery application by Rami Abdel-Rahem, Mayyas Al Rimawi and Kyle E. Cordova, Jordan, University of Petra, Total Fund: 33000 JD (46,544 USD).
 7. An attempt to treat water contaminated with single and mixed surfactants using Jordanian Natural Clays by Rami Abdel-Rahem, 2017-2018, Jordan, University of Petra, Total Fund: 18269 JD (25,767 USD).
 8. Insertion of Some Drugs into Precipitated Vesicles and Studying the rheological and structural properties of their Viscoelastic Systems in Some Mixed Solvents by Rami Abdel-Rahem and Mayyas Al Rimawi, Jordan, University of Petra, Total Fund: 20000 JD (28,208 USD).
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9. Role of Surfactants Synergism on their corrosion inhibition behavior by Abdelminum Altwaiq and Rami Abdel-Rahem and Ehab Al-Shamaileh, 2014-2016, Jordan, University of Petra, Total Fund: 10000 JD (14,104 USD).
 10. Novel Dispersion of MWCNTs in Polystyrene Polymer Induced by the Addition of 3-Hydroxy-2-naphthoic Acid by Ayman S. Ayesh, S. S. Ibrahim, Rami A. Abdel-Rahem”, 1/2/2013-1/6/2013, Kingdom of Saudi Arabia, King Faisal University, Total Fund: 1866800 SR (497,120 USD).
 11. Treating water contaminated with single and mixed surfactants using Saponite Clay by Rami Abdel-Rahem & Faisal Al-Odail, 26/1/2013-1/9/2013, Kingdom of Saudi Arabia, King Faisal University, Total Fund: 79400 SR (21,144 USD).
 12. Hydrogen Evolution Reaction on Binary Alloy Electrocatalysts by Faisal Al-Odail, Rami Abdel-Rahem, Alla Elshafi, 1/2/2011-1/2/2012, Kingdom of Saudi Arabia, King Faisal University, Total Fund: 100000 SR (26,630 USD).
 13. Inhibition of metals corrosion using surfactants: an investigation of surfactants type and synergism on their anticorrosion activity by Rami Abdel-Rahem, Faisal Al-Odail and Alla Elshafi, 13/2/2012-13/12/2012, Kingdom of Saudi Arabia, King Faisal University, Total Fund: 94400, SR (25,138 USD).
 14. Phase behavior of surfactant mixtures by Rami Abdel-Rahem and Heinz Hoffmann, 1/7/2011-1/9/2011, Germany, Bayreuth, Total Fund: ~5000 Euros (5,653 USD).
 15. Phase behavior of silicon oil/surfactant mixtures by Rami Abdel-Rahem and Heinz Hoffmann, 1/8/2008-30/9/2008, Germany, Bayreuth, Total Fund: ~5000 Euros (5,653 USD).
 16. The Influence of Surfactants Synergism on the Solubility of low-soluble Dyes and following their Complete Solubilization Via Spectroscopic Fluorescence Technique by Rami Abdel-Rahem & Ayman Ayoub Abdelshafi, 21/1/2010-1/2/2011, Kingdom of Saudi Arabia, King Faisal University, Total Fund: 70,100 SR (18,667 USD).
 17. Phase behavior of surfactant mixtures by Rami Abdel-Rahem and Heinz Hoffmann, 1/8/2004-30/9/2004, Germany, Bayreuth, Total Fund: ~5000 Euros (5,653 USD).
 18. Physiochemical investigations on newly modified hydroxyl mixed ether polymeric surfactants by Rami Abdel-Rahem and Heinz Hoffmann, 2002-2003, Germany, University of Bayreuth, Total Fund: ~20000 Euros (22,611 USD).
 19. Controlling the dissolution rate of surfactants hard table by Rami Abdel-Rahem and Heinz Hoffmann, 2001-2002, Germany, University of Bayreuth, Total Fund: ~20000 Euros (22,611 USD).
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20. Controlling the Krafft temperature of surfactant by Rami Abdel-Rahem and Heinz Hoffmann, 2000-2001, Germany, University of Bayreuth, Total Fund: ~20000 Euros (22,611 USD).

Techniques

1. Electron Microscopy: Preparation the liquid samples for transmission electron microscopy (TEM) using freeze fracture and cryogenic temperature methods (FF and Cryo-TEM).
2. Dynamic and Static Light Scattering.
3. Rheology: Using double gap and cone plate rheometers.
4. Polarized and Differential Microscopy.
5. Differential Scanning Calorimetry (DSC).
6. Small Angle Neutron Scattering (SANS).
7. Surface Tension, Interfacial Tension, and Contact Angle Methods.
8. Theoretical background and short experience on: High Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Infra-Red and Ultra Violet Spectroscopy (IR and UV), Atomic Force Microscopy (AFM), Gel permeation Chromatography (GPC), Mass Spectroscopy, Nuclear Magnetic Resonance (NMR).

Courses I have taught

1. **Surfaces and Colloids, 101425**, Department of Chemistry, College of Arts and Sciences, University of Petra. (**Number of Semesters =7**).
 2. **Physical Chemistry (I), 101321**, Department of Chemistry, College of Arts and Sciences, University of Petra. (**Number of Semesters =5**).
 3. **Physical Chemistry (III), 101421**, Department of Chemistry, College of Arts and Sciences, University of Petra. (**Number of Semesters =8**).
 4. **Physical Chemistry (II), 101322**, Department of Chemistry, College of Arts and Sciences, University of Petra. (**Number of Semesters =11**).
 5. **General Chemistry (I), 101101**, Department of Chemistry, College of Arts and Sciences, University of Petra. (**Number of Semesters =6**).
 6. **General Chemistry, 101103**, College of Pharmacy, University of Petra. (**Number of Semesters =4**).
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7. **General Chemistry (II), 101102**, Department of Chemistry, College of Arts and Sciences, University of Petra. (Number of Semesters =8).
 8. **Applications of Computer in Chemistry, 101456**, Department of Chemistry, College of Arts and Sciences, University of Petra. (Number of Semesters =6).
 9. **Special Topics in Chemistry, 101435**, Department of Chemistry, College of Arts and Sciences, University of Petra. (Number of Semesters =7).
 10. **Science and life 9100101**, Department of Chemistry, College of Arts and Sciences, University of Petra. (Number of Semesters =2).
 11. **Chemistry of Colloids, Chem 426**, Department of Chemistry, College of Science, King Faisal University (Number of Semesters =3).
 12. **General Chemistry, Chem 101103**, Department of Chemistry, College of Arts and Sciences, University of Petra. (Number of Semesters =2).
 13. **Quantum Chemistry, Chem 427**, Department of Chemistry, College of Science, King Faisal University. (Number of Semesters =4).
 14. **Physical Chemistry, Chem 222**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =12).
 15. **Physical Chemistry, Chem 242**, College of Engineering, King Faisal University. The course is taught in English. (Number of Semesters =1).
 16. **General Chemistry I, Chem 140**, College of Engineering, King Faisal University The course is taught in English. (Number of Semesters =1).
 17. **General Chemistry II, Chem 111**, Department of Chemistry, College of Science, King Faisal University. (Number of Semesters =1).
 18. **Graduation Project, Chem**, Department of Chemistry, College of Science, King Faisal University. (Number of Semesters =1).
 19. **General Chemistry I, Chem 101**, Department of Chemistry, College of Science, King Faisal University (Number of Semesters =5).
 20. **General Chemistry II, Chem 142**, College of Engineering, King Faisal University The course is taught in English. (Number of Semesters =7).
 21. **General Chemistry I, Chem 140**, College of Veterinary Science, King Faisal University. The course is taught in English. (Number of Semesters =2).
 22. **Practical General Chemistry**, Department of Chemistry, College of Engineering, King Faisal University. (Teaching in English language). (Number of Semesters =1).
 23. **Practical General Chemistry I**, Department of Chemistry, College of Medicine, King
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- Faisal University. (Teaching in English language). (Number of Semesters =1).
24. **Practical General Chemistry II**, Department of Chemistry, College of Science, King Faisal University. (Number of Semesters =1).
 25. **Analytical Chemistry I**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =1).
 26. **Analytical Chemistry for Laboratory Students**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =1).
 27. **General Chemistry for Science and Mathematics**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =2).
 28. **General Chemistry for Art Students**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =4).
 29. **Physical Chemistry for Laboratory Students**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =8).
 30. **Chemistry Lab Techniques for Laboratory Students**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =2).
 31. **Practical Field Supervision for Laboratory Students**, Department of Science, College of Teachers, King Faisal University. (Number of Semesters =8).
 32. **Quantum Chemistry and Molecular Spectroscopy**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =2).
 33. **Electrochemistry**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =3).
 34. **Chemical Kinetics**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =2).
 35. **Chemical Thermodynamics**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =3).
 36. **Colloids and Phase Equilibrium**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =1).
 37. **General Chemistry**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =2).
 38. **Graduation Project**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =2).
 39. **Physical Chemistry for Engineering**, Department of Chemistry, College of Science, Elmergeb University (Libya). (Number of Semesters =4).
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Quality and Teaching Workshops:

- 1.** Integrating E-Learning: Planning and Implementation, University of Petra, 6-12/10/2021 (20 hours).
 - 2.** Ms. One Drive, University of Petra, 7/11/2021.
 - 3.** Jordanian National Qualification Framework (JNQF), Accreditation and Quality Assurance Commission for Higher Education Institution, AQACHEI (Through GIZ project), 27-30/08/2021 (20 hours).
 - 4.** H5P, University of Petra, 27/6-1/7/2021.
 - 5.** Advanced Microsoft Teams Workshop, University of Petra, 13/7/2020.
 - 6.** Advanced Moodle Workshop, University of Petra, 14/7/2020.
 - 7.** Question Bank using Moodle, University of Petra, 10/5/2020.
 - 8.** Strategic Planning, University of Petra, 5-9/1/2020, (15 hours).
 - 9.** How do we elevate education in higher education institutions by former prime minister of Jordan Prof. Adnan Badran, University of Petra, 27/10/2019.
 - 10.** Leadership by Challenge and Managing for Results Workshop, University of Petra, 13-15/10/2019 (9 hours).
 - 11.** DNA performance, University of Petra, 30/9-2/10/2019, (9hours).
 - 12.** Invest Your Life by Managing Your Time and Priorities, University of Petra, 6/1-8/1/2019, (9hours).
 - 13.** Teaching Methodologies and Influence on Average Performing students, University of Petra, 25-26/11/2018.
 - 14.** Academic Leadership and Strategic Planning, University of Petra, 7-11/10/2018, (20 hours).
 - 15.** Science Finder Database, University of Petra, 1/8/2018.
 - 16.** The use of the electronic cloud in research, University of Petra, 3/4/2018.
 - 17.** Creative education is the only way to create wealth, Talal Abu Ghazalah, University of Petra, 8/1/2018.
 - 18.** Stimulating the inner compass education and thinking, University of Petra, 26/11/2017.
 - 19.** How can we benefit from the success stories of others in reforming and modernizing higher education? By former prime minister of Jordan Prof. Dr. Adnan Badran, University of Petra, 20/10/2016.
 - 20.** A training workshop to develop the outputs and competencies of the university proficiency exam, Accreditation and Quality Assurance Commission for Higher Education Institution, AQACHEI, 7/8/2016.
 - 21.** Audio-Visual Translation, University of Petra, 9/5/2016.
 - 22.** Course file, University of Petra, 5/5/2016.
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- 23.** Program file, University of Petra, 18/4/2016.
- 24.** Academic program management, University of Petra, 6/10/2015.
- 25.** Strategic Planning Course / for universities, University of Petra, 7/10/2015.
- 26.** Chemical Security Workshop, Amman, Jordan, 7-10/6/2015.
- 27.** MS Office 2013 (Word, Excel) Training, University of Petra, 26-28/4/2015.
- 28.** Blended Learning, University of Petra, 22-24/12/2013.
- 29.** Computer Application in Education (Microsoft Word 2013), University of Petra, 8-12/12/2013.
- 30.** Communication Skills with Students, University of Petra, 1-5/12/2013.
- 31.** Scientific writing, University of Petra, 25-28/11/2013.
- 32.** Effective Teaching Methods, University of Petra, 24-26/9/2013.
- 33.** Research Quality, KPIs and Benchmarking, King Faisal University, 27-28/2/2012.
- 34.** Strategic Planning and Setting up Operational Plan, King Faisal University, 12-13/12/2011.
- 35.** Specifications of Science Graduates and the Needs of the Labor Market, King Faisal University, 22/2/2011.
- 36.** Learning and Teaching Standard, King Faisal University, 30/10/2010.
- 37.** Institutional and Program Assessment, King Faisal University, 25/5/2010.
- 38.** E-Portfolio, King Faisal University, 9/5/2010.
- 39.** Portfolio Implementation, King Faisal University, 27/4/2010.
- 40.** Institutional and Program Assessment, King Faisal University, 29-30/3/2010.
- 41.** Consultation on the Vision, Mission and Values of the College, Al-Hassa Teacher College, 31/12-2/1/2007.

Conferences

- 1.** “University of Petra Conference on Innovation, Invention and Research”, University of Petra, 24/5/2022.
 - 2.** Water in Jordan, Jordanian Association of German Universities Graduates, Supproted by DAAD, Mövenpick Hotel, Amman, Jordan, 19/03/2022.
 - 3.** Asylum in Jordan (Challenges of the Past, Present & Future), University of Petra, 10-11/11/2021.
 - 4.** Jordan's Economy after the Corona Pandemic, University of Petra, 31/10/2021.
 - 5.** Jerusalem in the Arabic novel, University of Petra, 13-14/11/2019.
 - 6.** Higher education in the Arab world in a changing world, Yarmouk University, Jordan, 22/10/2019.
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- 7.** Facing challenges in the region and what local and regional academic cooperation can contribute to solving these challenges, German Academic Exchange Service (DAAD), Amman, Marriott Hotel, 11-12/5/2018.
- 8.** 8th Conference on Scientific Research in Jordan, Jordan University, 11/11/2017.
- 9.** International Conference of the Royal Institute of Religious Studies in cooperation with the World Federation of Academies, University of Petra, 25/4/2016.
- 10.** International Conference on Natural Products and Drug Discoveries, University of Jordan, 8/9/2015.
- 11.** Development of Herbal Medicines for Social and Economic Advancement in the Developing World, Jordan University, 6/9/2016.
- 12.** Impact of Climate Change on Water, Energy and Food in the Middle East, Amman, Meridian Hotel, 5/12/2015.
- 13.** 41st Biennial Meeting of the German Colloid Society in conjunction with the Bayreuth Polymer Symposium BPS '03, Bayreuth, Germany, 28-30/9/2003.
- 14.** Strukturierte Oberflächen: Wasch-und Reinigungsprozesse im Blickpunkt neuer Materialien, Gesellschaft Deutscher Chemiker, Würzburg, Germany, 8-9/4/2002.

Supervision and Examinations of Ph.D. and Master Theses

- 1.** Co-advisor for the thesis of Sana'a Niaz titled "Adsorption of Single and Mixed Surfactants onto Solid/Solution Interface and their Role in Water Treatment and Metal Corrosion Inhibition", 2022, (Jordan University, together with Prof. Abeer Al-Bawab).
- 2.** Examiner for the Ph.D. thesis of Hamdi Nouri Nsairat titled "Remote drug loading and ligand functionalization of liposomes for targeted drug delivery into cancer cells", 12/2019 (Jordan University)
- 3.** Examiner for the master thesis of Mona Sharar titled "Preparation of Janus emulsion formulation from essential oils with fungicidal and nematocidal activities", 2014, (Jordan University, together with Prof. Abeer Al-Bawab).

Committees

- 1.** Head of Primary Disciplinary Board for Faculty Members, University of Petra (2021-Until Now).
 - 2.** Coordinator of the Committee of Qualifications Placement of Petra in the Jordan National Qualifications Framework, University of Petra (2022-Until Now).
 - 3.** Coordinator of the Committee of Listing University of Petra in the Jordan National Qualifications Framework, University of Petra (2021).
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- 4.** Head of the Committee of Accrediting Chemistry Program/Petra University from ASIIN (ASIIN is a recognized German and European accreditation agency in Engineering, Informatics Natural Sciences and Mathematics), University of Petra (2016-2018).
- 5.** Director of the Academic Development Center Council, University of Petra (2017-Until Now).
- 6.** Head of Faculty of Arts and Sciences Council, University of Petra (2018- Until Now).
- 7.** Coordinator of Laws, Bylaws and Regulations Committee, University of Petra (2021).
- 8.** Coordinator of Petra University Curriculum Committee, University of Petra (2017-Untill Now).
- 9.** Member at Language Center Committee, University of Petra (2018-Unitl Now).
- 10.** Member at Petra University Graduate Studies Committee, University of Petra (2018-Until Now).
- 11.** Member at Scientific Strategic Plan Committee, University of Petra (2018-2019)
- 12.** Member in the Association of Deans of Faculties of Arts in the Arab World, (2018-Until now).
- 13.** Member in Scientific Council, University of Petra (2018-Until Now).
- 14.** Member in Appointment and Promotion Committee, University of Petra (2018-2019).
- 15.** Member in Preparatory committee for the establishment of Dentistry Faculty, University of Petra (2021-Until Now).
- 16.** Member in the Scientific Committee of Inventions of Conference DETEX 2022, Amman Chamber of Industry, Jordan, 5/2022.
- 17.** Member at Graduate Studies Committee, King Faisal University (2012-2013).
- 18.** Member at Quality Assurance Committee, Science College, King Faisal University (2012-2013).
- 19.** Member at Quality Assurance Committee, Science College, King Faisal University (2010-2011).
- 20.** Member at Science College Website Modification Committee, Science College, King Faisal University (2011-2012).
- 21.** Social Committee Supervisor, Al-Hassa Teacher College, 2007-2008.
- 22.** Member at Exams Committee, Al-Hassa Teacher College, 2007-2008.
- 23.** Social Committee Supervisor, Al-Hassa Teacher College, 2006-2007.

Awards

- 1.** King Faisal University Award for Publishing in Scientific International Journals that have high Impact Factor for the research titled "The influence of hydrophobic counterions on micellar growth of ionic surfactants".
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- 2.** King Faisal University Award for Publishing in Scientific International Journals that have high Impact Factor for the research titled “Influence of co-solvent on the rheological behavior of aqueous viscoelastic surfactant systems”.
 - 3.** King Faisal University Award for Publishing in Scientific International Journals that have high Impact Factor for the research titled “1,3-butanediol as a co-solvent for the surfactant solutions”.
 - 4.** King Faisal University Award for Publishing in Scientific International Journals that have high Impact Factor for the research titled “Micellar Parameters in Solutions with Cationic Surfactants and N,N-dimethyldodecylamine oxide: Influence of Cationic Surfactants Chain Length”.
 - 5.** King Faisal University Award for Publishing in Scientific International Journals that have high Impact Factor for the research titled “The Adsorption of Newly Hydroxyl Mixed Ether Nonionic Polymeric Surfactants at Air/Water and Solid/Water Interfaces: Influence of Surfactant Molecular Structure”.
 - 6.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Zinc Corrosion in Acidic Solutions Containing Single and Mixed Surfactants”.
 - 7.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Investigation on the physical properties of multiwalled carbon nanotube–polystyrene nanocomposites treated with 2,3-hydroxy-2-naphthoic acid”.
 - 8.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Electrical and optical properties of welldispersed MWCNTs/PVA nanocomposites under different pH conditions”.
 - 9.** Petra University Award for Publishing in International Scientific International Journals for the research titled "Reaction between Zinc and Hydrochloric Acid in Solutions Containing Alkyltrimethylammonium Bromide C_n TAB ($n = 8, 10, \text{ and } 12$) Cationic Surfactants: Influence of Surfactant Chain Length”.
 - 10.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Adsorption of Single and Mixed Surfactants onto Jordanian Natural Clay”.
 - 11.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Comparison of the influence of 1-propanol and of 2-propanol on the viscoelastic solutions of cetyltrimethylammonium bromide (CTAB) and sodium salicylate (NaSal)”.
 - 12.** Petra University Award for Publishing in International Scientific International Journals for the research titled " Rheological behavior of wormlike micelles (WLMs) in alcohol/water mixed solvent: influence of alcohol chain length”.
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- 13.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Sodium Dodecyl Benzene Sulfonate (SDBS) and N,N-Dimethyldodecan-1-amine Oxide (DDAO) in Single and Mixed Systems as Corrosion Inhibitors of Zinc in Hydrochloric Acid”.
- 14.** Petra University Award for Publishing in International Scientific International Journals for the research titled “Synergistic Interaction between Sodium Dodecyl Benzene Sulfonate (SDBS) and N,N-Dimethyldodecan-1-amine Oxide (DDAO) and Their Adsorption onto Activated Charcoal and Jordanian Natural Clay”.
- 15.** Elsevier Honorarium for Review published in Vol. 141, Iss.1-2, 2008.

Acknowledgments:

- 1.** From the President of University of Petra “Prof. Marwan Al-Muwalla” for efforts in organizing the Conference titled” University of Petra Conference on Innovation, Invention and Research”, 24/5/2022.
 - 2.** From University of Petra Chancellor Prof. Adnan Badran for receiving the ASIIN Accreditation for Chemistry department/Faculty of Arts and Sciences, 23/07/2019
 - 3.** From the President of University of Petra “Prof. Marwan Al-Muwalla” for receiving the ASIIN Accreditation for Chemistry department/Faculty of Arts and Sciences, 07/2019.
 - 4.** From the President of University of Petra “Prof. Marwan Al-Muwalla” for efforts made in efforts made in the conference “Jerusalem in the Arabic novel”, University of Petra, 13-14/11/2019.
 - 5.** From the Dean of Pharmacy/University of Petra “Prof. Tawfiq Arafat” for helping the faculty in receiving the Quality Assurance Certificate from Accreditation and Quality Assurance Commission for Higher Education Institution, AQACHEI, 12/2017.
 - 6.** Dedication from Prof. Mahmoud El-Salman in his novel “Within the Neighborhood”, 2021.
 - 7.** From Prof. Michael Gradzielski for FF-TEM measurements in the paper titled” Control of Phase Behavior and Properties of Vesicle Gels by Admixing Ionic Surfactants to the Nonionic Surfactant Brij 30” Langmuir 2008, 24, 18, 10123–10132.
 - 8.** From Prof. Michael Gradzielski for FF-TEM measurements in the paper titled” Comparison of Vesicle Formation in Zwitterionic and Catanionic Mixtures of Hydrocarbon and Fluorocarbon Surfactants: Phase Behavior and Structural Progression” Langmuir 2009, 25, 19, 11358–11366.
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- 9.** Prof. Dr. Abdullah AlJafari, Dean of Science College for Outstanding Efforts in the College's Progress, 2012/2013.
- 10.** Prof. Dr. Abdullah AlJafari, Dean of Science College for Efforts in College Scientific Day, 14/5/2012.
- 11.** Prof. Dr. Abdullah M. Aljughaiman, Dean of Al-Hassa Teacher College for Outstanding Efforts in the College's Progress, 19/6/2009.
- 12.** Prof. Dr. Abdullah M. Aljughaiman, Dean of Al-Hassa Teacher College for efforts made in the college of teachers' activities, 2008/2009.
- 13.** Prof. Dr. Abdullah M. Aljughaiman, Dean of Al-Hassa Teacher College for Preparing a book titled "The brief guide to the most important tourist attractions in Al-Hassa", 15/4/2007.
- 14.** Prof. Dr. Abdullah M. Aljughaiman, Dean of Al-Hassa Teacher College for efforts made in Computer and Technology Center", 2007/2008.
- 15.** Prof. Dr. Abdullah M. Aljughaiman, Dean of Al-Hassa Teacher College for efforts made in the college of teachers activities, 2007/2008.
- 16.** From Student Affairs Director Mr. Abdelelah Al Drawesh for the efforts made in controlling the final exams made at Al-Hassa Teacher College, 2007/2008.

Languages

1. Arabic: Very good in speaking, reading, understanding and writing.
2. English: Very good in speaking, reading, understanding and writing.
3. German: Good in speaking, reading, understanding and writing.

Computer skills

Basic, Fortran, FrontPage and Microsoft office, Origin, Internet and teaching application of computer in chemistry for many times.

Referees

1. **Prof. Dr. Heinz Hoffmann:** Bayreuther Zentrum für Kolloide und Grenzfläche, Gottlieb-eim-Str. 60, 95448 Bayreuth. Tel: 0049-(0)921-50736-135 oder 136, Fax: 0049-(0)921-50736-139. Email: Heinz.Hoffmann@nmbgmbh.de
 2. **Dr. Bassam Bitar:** Head of Alpha Company and previously was working at Jordan University of Science and Technology, Department of Applied Chemical Science, Irbid, Jordan. Email: dr.bassambitar@gmail.com
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