

Curriculum Vitae

PERSONAL INFORMATION:

Name: Fadwa Odeh

Date of Birth: 14th of July 1969

Place of Birth: KUWAIT

Country of Citizenship: JORDAN

Address:

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Amman-JORDAN

Work: Assistant Prof.

Chemistry Department

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Research Interests

- Targeted drug-delivery systems for cancer treatment
- Preparation of new materials for slow release of drugs from natural resources (e.g. metakaolinite)
- Characterization of nanoparticles in solutions using non-invasive techniques especially Dynamic NMR.

Funded Projects

- Targeted-delivery of macromolecular drugs (Aptamers) to cancer cells.

Principal Investigator: Fadwa Odeh

Co-investigators: Said Ismail, Faculty of Medicine, University of Jordan

Abeer Al-Bawab, Faculty of Science, University of Jordan

Rana Abu Dahab, Faculty of Pharmacy, University of Jordan

Funded by the Scientific Research Fund/ Ministry of Higher Education and Scientific Research.

Duration: 2010-2012

Amount: 60300 JD

- Targeted-delivery of macromolecular drugs (Aptamers) to cancer cells

Principal Investigator: Fadwa Odeh

Co-investigators: Abeer Al-Bawab, Faculty of Science, University of Jordan

Rana Abu Dahab, Faculty of Pharmacy, University of Jordan

Funded by the Deanship of Scientific Research, University of Jordan

Duration: 2009-2011

Amount: 20000 JD (as seed money)

- Surfactant Enhanced Remediation of Polluted Water

Principal Investigator: Abeer Al-Bawab

Co-investigators: **Fadwa Odeh**, Faculty of Science, University of Jordan

Manar Fayyad, Faculty of Pharmacy, University of Jordan

Duration: 2009-2011

Amount: 20800 JD

EDUCATION

PhD: Physical Chemistry (minor: Organic Chemistry), Clarkson University, NY, USA, (June 2006).

Thesis title: NMR STUDY OF COLLOIDAL SYSTEMS FOR PHARMACEUTICAL AND MICROELECTRONICS APPLICATIONS

Research Area: The behavior of multicomponent colloidal systems is governed by the effective concentration and nature of each component. The effective concentration of any component in a system is controlled by types of interactions present in that system such as adsorption, complexation and self-assembly. Up till now, an ideal technique to study colloidal multicomponent systems in situ without the disturbance or separation of the various components has not been found.

Nuclear magnetic resonance (NMR) is unique to the study of heterogeneous multicomponent systems. NMR consists of a wide range of experiments that can be designed to monitor the interactions present in multicomponent systems on the molecular level. These experiments vary from classical 1D and 2D-NMR (such as ^1H -NMR and chemical shift changes) to dynamic-NMR (such as relaxation time and diffusion measurements). In my PhD work, some colloidal systems were selectively picked to demonstrate NMR's ability to study such systems.

M.Sc.: Inorganic-Physical Chemistry, University of Jordan, Amman, Jordan, (1993-1996).

Thesis title: "Preparations and Reactions of Some Transition Metals Chelates".

Research Area: Synthesis of Schiff Base ligands and their hydrogenated analogous from ethylene or propylene diamine and pyridine-2-aldehyde or pyrrole-2-aldehyde, then prepare their complexes with Pd^{+2} , Cu^{+2} , Zn^{+2} and Ni^{+2} . Characterize these ligands and complexes using various techniques such as melting points, conductivity, FTIR and NMR spectroscopy. Study and calculate the formation constants using Differential Pulse Anodic Stripping Voltammetry (DPASV).

B.Sc.: Chemistry, University of Jordan, Amman, Jordan, (1987-1991).

Jordanian General Secondary Certificate: (Tawjihi, Scientific Stream), Amman, Jordan, 1987, (grade 90.2 /100 excellent).

WORK EXPERIENCE

Assistant Professor: Department of Chemistry, University of Jordan (Sep 2007-current)

NMR specialist: Teaching and training graduate and undergraduate students on NMR and aiding researchers in the university in their various research projects that involve the use of NMR especially some advanced techniques such as relaxation time and diffusion studies, in addition to the maintenance of the NMR facility in Department of Chemistry, Clarkson University, Potsdam NY (2002-2006).

Teaching assistant: Teaching general chemistry lab, Chemistry Department, Clarkson University, Potsdam, NY, (2002-current).

NMR Specialist: NMR facility manager and operator, responsible for maintenance, operating and research. Chemistry Department, Jordan University, Amman-Jordan, (2000-2002).

Teacher and lab coordinator: Teaching of General chemistry, Organic chemistry and Analytical laboratories at the Chemistry Department, Jordan University, Amman-Jordan, (2000-2002).

Research Assistant: Isolation, purification (through different techniques such as crystallization and the various chromatographic techniques (Thin Layer Chromatography, Column Chromatography)) and identification (through different spectroscopic techniques especially Nuclear Magnetic Resonance NMR, UV-Visible and IR spectroscopy) of natural products extracted from plants to be used in drug industry, School of Pharmacy, University of Jordan, Amman-Jordan (1998-2000).

Faculty: Teaching General, Analytical and Organic chemistry courses, Queen Alia College, Amman-Jordan, (1996-1998).

Teacher: Teaching Chemistry, Geology and Biology of the high school level, Al-Yadoda High School, Amman-Jordan (1996-1997).

Teaching assistant: Laboratory courses of General, Analytical, Organic, and Physical chemistry at Chemistry Department, University of Jordan, Amman-Jordan, (1993-1996).

Teacher: Teaching Chemistry and Biology of the high school level, Al-Quaysma High School, Amman-Jordan (1992-1993).

SKILLS

Highly qualified in performing the following:

Spectroscopic techniques including:

- FT-Nuclear Magnetic Resonance (**NMR**) in both solution and solid states. Capable of training, maintenance, performing and interpretation of the various types of NMR spectra in 1D, 2D, variable temperature and Dynamic NMR techniques such as relaxation time and diffusion coefficient measurements.
- Atomic Absorption Spectrophotometer (**AAS**).
- FT-Infra Red Spectroscopy (**FT-IR**).
- UV-Visible Spectroscopy (**UV-VIS**).
- Fluorescence Spectroscopy.

Chromatographic techniques including:

- Column Chromatography (**CC**).
- Thin Layer Chromatography (**TLC**).
- Gas Chromatography (**GC**).
- High Performance Liquid Chromatography (**HPLC**).

Electrochemical techniques including:

- Differential Pulse Anodic Stripping Voltammetry (**DPASV**).
- Differential Pulse Polarography (**DPP**).

Light Scattering Techniques

- Dynamic Light Scattering (**DLS**).
- Static Light Scattering (**SLS**).
- Micro Flow Imaging (**MFI**).

In addition to experience in TGA/DSC, zeta potential measurements and some experience in AFM.

Languages:

Arabic: Excellent in speaking, reading and writing (native language)

English: Excellent in speaking, reading and writing.

French: Good in reading and writing, fair in speaking.

Computer:

Skillful in Microsoft windows operations (such as office, excel, power point), Chem. Draw, People soft, Blackboard and UNIX.

Publications:

1. **F. Odeh**, A. Al-Bawab, Y. Li, Self-Assembly Behavior of Benzotriazole in Water, *J. Disp. Sci. Techn.*, (2010), 31(2), 162-168.
2. Al-Bawab A., **Odeh F.**, Bozeya A., Aikens, P. A, A Friberg S. E, Comparison between Experimental and Estimated Evaporation Path from Emulsions, *Flavors & Fragrances*.(2010), 24(4), 155-159.
3. Friberg S. E, Al-Bawab A., **Odeh F.**, Bozeya A., Aikens, P. A Emulsion Evaporation Path. A First Comparison of Experimental and Calculated Values, *Colloid & surfaces; A*, (2009) 338(1-3), 102-106.
4. **Fadwa Odeh** and Yuzhuo Li, The Use of PFG-NMR in an Undergraduate Advanced Laboratory, *ACS symposium series 969*, Modern NMR in Undergraduate Education, (2007) pp.190-204.
5. Yuzhuo Li and **Fadwa Odeh**, Characterization of Pharmaceutical Dispersion Using Various Particle Sizing Techniques, *Amer. Pharm. Rev.*, (2006), 9(3), 94-99.
6. **Fadwa Odeh**, Nicole Heldt, Michel Gauger. Gregory Slack and Yuzhuo Li, PFG-NMR Investigation of Liposome Systems Containing Hydrotrope, *J. Disp. Sci. Tech.*, (2006), 27(5), 665-669.
7. **Fadwa Odeh**, Abeer Al-Bawab, William America and Yuzhuo Li, The Use of Spin-Echo-NMR to Study the Dynamics of a Model CMP Slurry Containing Silica Particles, **submitted**.

8. **Fadwa Odeh** and Yuzhuo Li, The Use of Spin-Echo-NMR to Study the Dynamics of a Model CMP Slurry Containing Alumina Particles, in preparation.
9. **Fadwa Odeh** and Yuzhuo Li, A NMR study of the dynamics of multicomponent systems in presence of Boron Nitride particles, in preparation.
10. Hayati Celik, **Fadwa Odeh** and Petr Zuman, Hydration of Fluorinated Oximes, submitted.

Conferences and Meetings:

- The 13th IACIS International Conference on Surface and Colloid Science and the 83rd ACS Colloid & Surface Science Symposium, June 14-19, 2009, Columbia University, NYC, NY. (presenting both an oral presentation and a poster)
- The 80th ACS Colloid and Surface Science Symposium, June 18-21 2006.
- CAMP Annual Technical Meeting, May 17-20th 2006, F. Odeh and Y. Li, A NMR study of the dynamics of multicomponent systems in presence of Boron Nitride particles,
- F.Odeh, Y. Li, The Use of PFG-NMR in an Undergraduate Advanced Organic Laboratory, Evolution of Modern Nuclear Magnetic resonance in Undergraduate Learning, ACS Meeting, Washington DC. (August 28-September1, 2005).
- F.Odeh, N. Heldt, M. Gauger. G. Slack and Y. Li, PFG-NMR Investigation of Liposome Systems Containing Hydrotrope, ACS Meeting, Washington DC. (August 28-September1, 2005).
- NERM 2005, Sacred Hear University, Fairfield CT, July 12-17th 2005.
- The 79th ACS Colloid and Surface Science Symposium, June 12-15th 2005, Clarkson University, Potsdam NY.
- The 9th International Symposium on Chemical Mechanical Polishing, August 8-11th 2004, Lake Placid NY.
- CAMP Annual Technical Meeting, May12-14th 2004, Canandaigua NY.
- CAMP Annual Technical Meeting, May14-16th 2003, Saratoga Springs NY.
- CAMP Annual Technical Meeting, May13-14th 2002, Saratoga Springs NY.

Memberships:

- Member in (Jordanian Chemical Society) JCS
- Member in (American Chemical Society) ACS
- Member in (North Eastern Regional Meeting) NERM

Community Involvement:

- Girls scout guest speaker (women from around the world/Middle East)
- NIH program guest speaker
- Leadership and local communities development workshop

Campus Involvement:

- Participated in preparing for the “Nanostructured Advanced Materials” conference that was held in Amman, November 10-13, 2008
- Participated in preparing and lecturing in the NMR short course at Clarkson University
- Graduate Student Association at Clarkson University (GSA)
- Muslim Student Association (MSA) at Clarkson University
- Participated in preparing for the Colloid conference at Clarkson University