# Sherin Abedalkader Saraireh

# Personal Information

Date of Birth: 7th of November 1978.

Place of birth: Al-Karak Jordan.

Nationality: Jordanian.

[Sh2002jo@yahoo.com](mailto:Sh2002jo@yahoo.com)

Mobile: 00962 (0) 795543830

Marital Status: married with three babies

Languages: English and Arabic

# Current Activity

# September 2016– Now

# Deputy Head of the Faculty of Science

Al-Hussein Bin Talal University

P.O. Box: (20)

Ma'an –Jordan

Tel: +962-3-2179000

# Associate Professor (Since March 2014)

Department of Physics

Faculty of Sciences

Al-Hussein Bin Talal University

P.O. Box: (20)

Ma'an –Jordan

Tel: +962-3-2179000

# Education

**March 2003 - September 2006**

Doctor of Philosophy (PHYSICS) (Molecular physics/Nano physics)

# PhD Thesis

“Towards hybrid silicon-organic molecular electronics: Bonding and stability of

6-Trifluoracetoxy-Norbornadiene and Acetone on the Si(001) surface”

Energetic, stability, electronics structure properties of some organic molecule on Silicon surfaces, the computation were performed using Vienna ab initio simulation package (VASP) and Gaussian package, While the experimental work was performed using Scanning Tunneling Microscopy (STM).

Surface Physics Theory Group / **Surface and Interface group**

School of Mathematical and Physical Sciences

University of Newcastle

Callaghan, NSW 2308

Australia

# March 2002 – March 2003

MS of Scientific Studies (PHYSICS)

# Master Thesis

“Pyridine (C5H6N) adsorption on solid surfaces”

Studies the adsorption of Pyridine in some solid surfaces like gold and graphite, using Scanning Tunneling Microscopy (STM) and X-ray Photoelectron Spectroscopy (XPS).

Department of Physics

School of Mathematical and Physical Sciences

Faculty of IT and Sciences

University of Newcastle, Callaghan NSW 2308

Australia

**1996 - 2000**

BS in Physics

Department of Physics

Faculty of Science

Mu’tah University

Mu’tah, Al-karak, Jordan

**1996**

High School

Mu’tah Secondary School

Mu’tah, Al-Karak, Jordan

# Work experience

# September 2016– Now

# Deputy Head of the science faculty

Al-Hussein Bin Talal University

P.O. Box: (20)

Ma'an –Jordan

Tel: +962-3-2179000

# March 2014 – until now (Associate Professor)

# October 2006 – March 2014 (Assistant Professor)

Both in: Department of Physics

Faculty of Sciences

Al-Hussein Bin Talal University

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# September 2011 – October 2013

Deputy Head of the deanship of the student affaire

Al-Hussein Bin Talal University

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Tel: +962-3-2179000

# September 2006 – November 2006

# Visiting Academic,

Physics Department

University of Newcastle

Callaghan NSW 2308, Australia

# March 2002 – August 2006 (Part time)

Teaching Assistant and Laboratory Demonstration in Physics Laboratory

Physics Department

University of Newcastle

Callaghan NSW 2308, Australia

- Instructor general physics labs (mechanics, electricity and magnetism)

- Teaching assistant for computational physics lab.

- Grade assignments for several courses: grad and under grad level.

# July 2001 – February 2002 (Full time)

Laboratory Demonstration for Physics Laboratories

Physics Department

Mu’tah University

Al-Karak, Jordan

- Teach College Physics I and II cources

- Teach Physics labs (Mechanics & Electricity).

- Assistant for Computational Physics lab

- Advising for undergraduate students

# August 2000 – July 2001 (Full time)

Teacher for Science (PHYSICS)

Um-alhashem High School

Al-Karak, Jordan

**Teaching Experience:**

**I have taught the following courses**

General Physics I (mechanics)

General Physics I (electricity)

General Physics for computer students

Thermodynamics

Modern Physics

Advance Modern Physics

Classical Physics I, II

Quantum Physics I, II

Nuclear Physics

Particle Physics

Heat and Waves

Optics physics and advanced Optics physics

Electromagnetic Theory I, II

Solid State

Computational Physics

General Science

Electronics

Digital electronics

**I have taught the following Laboratories:**

General Physics laboratory I (mechanics)

General Physics laboratory II (electricity)

General Physics laboratory for computer students

Optics Laboratory

Electronics Laboratory

Intermediate Laboratory (heat, waves, nuclear)

Advanced Laboratory (nuclear and solid state physics)

**I have write and prepare the manuals of the following Laboratories:**

General Physics laboratory II (electricity)

General Physics laboratory for computer students

Optics Laboratory

**Language of teaching**

**English** - Excellent.

**Arabic** - Excellent.

**Skills**

* Deal good with MATHMATICA and MAT LAB.
* Very good in using Density functional theory (DFT).
* Very good in using Windows application (Excel, Word, Power point)
* Bilingual Language: Arabic and English.

**Achievement**

* Master Scholarship, (2003-2004), AHU Jordan.
* PhD Scholarship, 2004-2006, AHU Jordan.
* Travel and Expense Grant, 2005, institute of physics (UK).
* Visiting scholarship (2010) Newcastle University.

**Research Interests**

# Nano- and molecular physics, molecular electronics, surface physics, electronic structures, adsorption on surfaces.

# Very good in Using Scanning Tunneling microscopy (STM) and get images of nano scale through it.

* Adsorption on metal surfaces, chemical reactions at surfaces, oxidation/corrosion of metal surfaces, surface phase transitions,
* Studying the adsorption of some molecules on some surfaces, molecules such as acetone, water and chloride, while surfaces such as semiconductor surfaces and metal surfaces.
* Studying the electronic structure of different surfaces such as silicon, CuCl2, and Cu2O.
* In order to study the above categories I am using:
* Density functional theory (DFT) calculation using Gaussian and VASP.
* Scanning Tunnelling Microscopy (STM), X-ray Photoelectron Spectroscopy (XPS) and Temperature Program desorption (TPD).

**Published Papers**

**[1].** **Sherin A. Saraireh**, S. R. Schofield, P. V. Smith, M. W. Radny and B. V. King, "Acetone on the silicon (001) surface: a scanning tunnelling microscopy study", Surface Science, **Vol. 601** (2007) **pp**. 5757–5761. {Impact factor; 1.838}

**[2].** **Sherin A. Saraireh**, P. V. Smith, M. W. Radny, S. R. Schofield and B. V. King, "Interaction of acetone with the Si(0 0 1) surface", Surface Science, **Vol**. **602**, (2008) **pp**. 3484–3498. {Impact factor; 1.838}

**[3].**  S. R. Schofield, **Sherin A. Saraireh**, P. V. Smith, M. W. Radny and B. V. King, “Organic bonding to silicon via a carbonyl group: New insights from atomic-scale images”, "Journal of the American Chemical Society" *J. Am. Chem. Soc. (JACS),* **Vol. 129** (2007) **pp**. 11402. {Impact factor; 10.68}

**[4].** Oliver Warschkow, Irene Gao, Steven R. Schofield, Daniel R. Belcher, Marian W. Radny, **Sherin A. Saraireh**, and Phillip V. Smith, "Acetone on Silicon (001): Ambiphilic Molecule Meets Ambiphilic Surface" *Phys. Chem. Chem. Phys.,***Vol**. 11, (2009) **pp.** 2747 – 2759. {Impact factor; 3.829}

http://pubs.rsc.org/en/content/articlelanding/2009/cp/b815542a/unauth#!divAbstract

**[5]. Sherin A. Saraireh**, P. V. Smith, M. J. Crossley, B. V. King, J. R. Reimers and B. J. Wallace, “Norbornadiene-based Molecules for Functionalising the Si(001) Surface*”,* "*The* *Journal of Physical Chemistry C*", **Vol**. 113 (2009) **pp**. 16094-16103. DOI:10.1021/jp903481w. {Impact factor; 4.814}

**[6].** A-W. Ajlouni, Amin Al-Okour, A. Ajlouni, **Sherin A. Saraireh**, *Int. Journal of Math. Analysis,* "Neutron Thermalization: A Fractional Calculus Theoretical Approach", **Vol**. 6, **No**. 9 (2012) **pp**. 437– 445.

**[7].** A. Al-Okour, **Sherin A. Sareireh**, A. Ajlouni and A-W. Ajlouni, *Journal of Mathematics and Statistics*, "Fractional Calculus Theoretical Evolution for Radiation Quantities", Vol. 8, **No**. (1) (2012) **pp**. 72-76.

**[8]. Sherin A. Saraireh**, M. Tarawneh, "Electronic structure of the CuCl2(100) surface: A first principle study using DFT method", Journal of Nanomaterials  
Volume 2012 (2012), Article ID 767128, 7 pages, <http://dx.doi.org/10.1155/2012/767128>, {Impact factor; 1.547}

**[9].** **Sherin A. Saraireh**, A-W. Ajlouni, M. Al-Wardat, H. Omereen, "Radiation doses due to natural radioactivity in the dead sea, Jordan", Canadian Journal of  
Pure & Applied Sciences, **Vol**. 6(2), **pp**. 2017 (2012). {Impact factor: 2.657}

**[10].** **Sherin A. Saraireh**, Mohammednoor Altarawneh, "Density Functional Theory periodic slab calculations of adsorption and dissociation of H2O on the Cu2O(110):CuO surface", Canadian Journal of Physics. **Vol**. 91, **pp**. 1101–1106 (2013) (DOI:dx.doi.org/10.1139/cjp-2013-0272). {Impact factor: 0.9}

**[11].** Mohammednoor Altarawneh, **Sherin A. Saraireh**, "Theoretical Insight into Chlorine Adsorption on the Fe(100) Surface", [Phys Chem. Chem. Phys.](http://www.ncbi.nlm.nih.gov/pubmed/24671648) Vol. 16(18), 8575-81 (2.14). **DOI:** 10.1039/c4cp00220b. {Impact factor; 3.829}

**[12].** Phillip V. Smith**,** Daniel Belcher, Olena Ponomarenko, **Sherin A. Saraireh**, Marian W. Radny, "Interaction of Acetone with the Ge(001) Surface", RSC Adv**.**, Vol. 4, 12672-12679 (2014). **DOI:** 10.1039/C3RA47591C. {Impact factor; 2.562}.

**[13].** **Sherin A. Saraireh**, Mohammednoor Altarawneh, "Thermodynamic stability and structure of Iron chloride surfaces: A first-principles investigation", *The Journal of chemical physics.* 08/2014; 141(5):054709. {Impact factor; 4.814.

**[14].** [Mou'ad A. Tarawneh](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Tarawneh%2C+Mou%27ad+A), [Ruey Shan Chen](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Chen%2C+Ruey+Shan), [Sahrim Hj Ahmad](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Hj+Ahmad%2C+Sahrim), [Musab A. M. Al-Tarawni](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Al-Tarawni%2C+Musab+A+M)h , **Sherin A. Saraireh**, Hybridisation of a Thermoplastic Natural Rubber Composite with Multi-walled Carbon Nanotubes/Silicon Carbide Nanoparticles and the Effects on Morphological, Thermal and Mechanical Properties, Polymer Composites, 2018, DOI: 10.1002/pc.24959

**[15]**. **Sherin A. Saraireh**, Mohammednoor Altarawneh, M. A. Tarawneh "Van der walls correction study of the Methanethoil (CH3SH) on Fe(100) surface" under preparation.

**[16].** **Sherin A. Saraireh**, Mohammednoor Altarawneh, M. A. Tarawneh “Theoretical Insight into Chlorine Adsorption on the Fe(110) Surface" under preparation.

**Conference and work shop attending**

1. The 13th Australian Conference on Nuclear Techniques of Analysis and 7th Vacuum Society of Australia Congress, Lucas Heights, NSW, 2003.
2. The International conference on synthetic metals (ICSM 04) Wollongong, Australia, 2004.
3. Work shop on Gaussian programme, Sydney, NSW, 2005.
4. The 8th International Conference on the Structure of Surfaces , Munich, Germany,  18-22 July  2005 University of Munich http://www.icsos8.uni-muenchen.de/list\_of\_poster.htm.
5. The 16th National Congress 2005 Australian Institute of Physics, Canberra 2005.
6. 30th Annual Condensed Matter and Materials Meeting/Wagga Wagga 2006.
7. International conference for material, Amman, 4-6 march 2009,
8. ICSOS-11: 11th International Conference on the Structure of Surfaces, University of Warwick, Coventry, UK, 21-25 July 2014.
9. The 2nd International Conference on Physics Science and Application (ICPSA 2014).
10. ECOSS'30, The European Conference on Surface Science to be held in Antalya, Turkey, August 31- September 05, 2014. “Theoretical Insight Chlorine Adsorption on the Fe(100) surface”.

[11]. Acetone on Si(001) - An adsorption study for silicon-based molecular electronics, August 2006, DOI: 10.1109/ICONN.2006.340635, Conference: Nanoscience and Nanotechnology, 2006. ICONN '06, Steven Schofield, sherin, saraireh, P. V. Smith, B. V. King.

**Conference proceedings**

1. S. A. Saraireh, M. J. Crossley, B. V. King, P. V. Smith and B. J. Wallace, in proceedings of 13th Australian Conference on Nuclear Techniques of Analysis and 7th Vacuum Society of Australia Congress, Lucas Heights, NSW, 2003, p 288.
2. S. A. Saraireh, M. J. Crossley, B. V. King, P. V. Smith and B. J. Wallace, in proceedings of The International conference on synthetic metals (ICSM 04) Wollongong, Australia, 2004.
3. S. A. Saraireh, M. J. Crossley, B. V. King, P. V. Smith and B. J. Wallace, in proceedings of The 16th National Congress 2005 Australian Institute of Physics, Canberra 2005.
4. S. A. Saraireh, S. R. Schofield, P. V. Smith, M. W. Radny and B. V. King, 30th Annual Condensed Matter and Materials Meeting/Wagga Wagga 2006.
5. S. R. Schofield, S. A. Saraireh, P. V. Smith, M. W. Radny and B. V. King, 10 Aug 2006 Oral, 6th Rencontres du Vietnam: Nanophysics, from fundamentals to applications, Hanoi, Vietnam .
6. S. R. Schofield, S. A. Saraireh, P. V. Smith, M. W. Radny and B. V. King, 30 Jul-4 Aug 2006 Oral, International conference on Nanoscience and technology (ICNT), Basel, Switzerland.
7. S. R. Schofield, S. A. Saraireh, P. V. Smith, M. W. Radny and B. V. King, 7 Jul 2006 Oral, 2006 International Conference on Nanoscience and Nanotechnology (ICONN2006), Brisbane, Australia.
8. S. R. Schofield, S. A. Saraireh, P. V. Smith, M. W. Radny and B. V. King, 26 Jan 2006 Poster, Frontiers in Quantum Nanoscience, A Sir Mark Oliphant Conference, Noosa, Australia.
9. S. R. Schofield, S. A. Saraireh, P. V. Smith, M. W. Radny and B. V. King, 22 Nov 2005 Oral, the 14th AINSE Conference on Nuclear and Complementary Techniques of Analysis and Vacuum Society of Australia Congress, Wellington, New Zealand.
10. S. R. Schofield, S. A. Saraireh, P. V. Smith, M. W. Radny and B. V. King, 18 Nov 2005 Colloquium, the Institute of Physical and Chemical Research, RIKEN, Saitama 351-0198, Japan.
11. S. A. Saraireh, S. R. Schofield, P. V. Smith, M. W. Radny, B. V. King, Oliver Warschkow and Irene Gao, "Towards hybrid silicon-organic molecular electronics the interaction of acetone [(CH3)2CO] with the Si(001) surface, STM and DFT studies", international conference for material, Amman, 4-6 march 2009.
12. ECOSS'30, The European Conference on Surface Science helds in Antalya, Turkey, August 31- September 05, 2014. “Theoretical Insight Chlorine Adsorption on the Fe(100) surface”.
13. ICSOS-11: 11th International Conference on the Structure of Surfaces, University of Warwick, Coventry, UK, 21-25 July 2014

**Refereed Conference Papers**

**[1].** “Organic Adsorbates on Semiconductor Surfaces: A Scanning Tunnelling Microscopy/ Density Functional Study”, Schofield, S.R., Saraireh, S.A., Radny, M.W., Smith, P.V., and King, B.V., Proceedings of the 14th Australian Conference on Nuclear and Complementary Techniques and Analysis & 8th Vacuum Society of Australia Congress, Wellington, New Zealand, November (20-22) 2005, p.114.

**[2].** “Acetone on Si(001) - an Adsorption Study for Silicon-based Molecular Electronics”, Schofield, S. R., Saraireh, S. A., Smith, P. V., Radny, M. W., King, B. V., Proceedings of the 2006 International Conference on Nanoscience and Nanotechnology, Brisbane, Australia, 391-394 (2006) – ISBN 1-4244-0453-3

**Membership in Institutes and groups**

**[1].** Newcastle Nanomaterials and Devices Group, which is made up of some number of Academics, Post doctors and PhD students all of whom are highly active experimental researchers in the field of surface science. (<http://nano.newcastle.edu.au/twiki/bin/view/NNDG/WebHome>).

**[2].** Theoretical group in the physics department which is interesting in doing theoretical studies and calculations for some physical systems.

**[3].** Institute of physics (United Kingdom) as associate member (<http://www.iop.org>).

**[4].** Institute of physics (Jordan) as associate member.

**Reviewer in the following journals**

* Thin Solid Films.
* [British Journal of Applied Science & Technology](http://www.sciencedomain.org/journal-home.php?id=5).
* Pinnacle pure and applied chemistry.
* Journal of Applied Chemical Science International.
* International Research Journal of Public and Environmental Health

**Reviewer in the following conferences**

* The 6th Global Conference on Materials Science and Engineering (CMSE 2017)

لجنة تحكيم ومناقشة رسالة الماجستير

* **عضو لجنة تحكيم ومناقشة رسالة الماجستير للطالبة وجد عبدالرحمن الحباشنة, قسم الفيزياء - جامعة مؤتة, الاحد 19/11/2017.**
* **عضو لجنة تحكيم ومناقشة رسالة الماجستير للطالب عبدالله محمود الضلاعيين, قسم الفيزياء - جامعة مؤتة, الاحد 6/4/2017.**
* **عضو لجنة تحكيم ومناقشة رسالة الماجستير للطالبة علا البشابشبة, قسم الفيزياء - جامعة مؤتة, الاربعاء 6/4/2016.**
* **عضو لجنة تحكيم ومناقشة رسالة الماجستير للطالبة عبير القرالة, قسم الفيزياء -جامعة مؤتة, الاحد 6/4/2017.**
* **عضو لجنة تحكيم ومناقشة رسالة الماجستير للطالب محمد البطوش, قسم الفيزياء -جامعة مؤتة, الثلاثاء 26/4/2018.**

لجان

* **رئيس لجنة التحقيق بقضايا الطلبة, عمادة شؤون الطلبة , جامعة الحسين بن طلال, 2012/2013**
* **رئيس لجنة التحقيق بقضايا الطلبة, عمادة شؤون الطلبة , جامعة الحسين بن طلال 2013/2014.**
* **عضو لجنة التحقيق بقضايا الطلبة, كلية العلوم, جامعة لحسين بن طلال, 2015/2016.**
* **رئيس لجنة التحقيق بقضايا الطلبة, كلية العلوم, جامعة لحسين بن طلال, 2016/2017.**
* **رئيس لجنة التحقيق بقضايا الطلبة, كلية العلوم, جامعة لحسين بن طلال, 2017/2018.**
* **لجان التحكيم ولجان التوجيه والاشراف على تأليف كتب الفروع المهنية في المملكة الاردنية الهاشمية 2016/2017.**

ورشات عمل محلية

* **البرنامج الوطني عكس هجرة العقول الاردنية, جامعة جرش الاهلية 14/7/2016.**

**واقع وطموحات الاكاديميات الاردنيات, جامعة مؤتة, 29/3/2016.**

* **التبادل الدولي الاكاديمي برنامج ايراسمس بلس الاوروبي, البحر الميت, 24/4/2017.**
* **L’Oreal UNICCO for woman in science, Amman, 2018**

**Referees**

**Dr. Mohammednoor Altarawneh**

Associate prof. of Chemical Engineering.

Chemical Engineering department, Faculty of Engineering, Al-Hussein bin Talal University, Ma'an, Jordan.

Priority Research Centre for Energy, Faculty of Engineering and Built Environment, the University of Newcastle, Callaghan NSW 2308, Australia

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**Dr Steven Schofield**London Centre for Nanotechnology  
University College London (UCL), 17-19 Gordon St London, WC1H 0AH, UK  
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**Dr. Mashhoor Ahmad Al-Wardat**Associate prof. of Astrophysics,  
 Associate prof. of Astrophysics, Dep. of  Physics, Al-Hussein Bin Talal University   
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**Fax**: 00962-2-7211117, (<http://faculty.yu.edu.jo/mwardat/>)

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**Prof. John O’Connor**

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**Dr. Marian W. Radny**

Team Leader, theoretical group and surface science

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### Assoc. Prof. Phil Smith

#### Conjoint Associate Professor

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### Prof. Bruce King

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