

## CURRICULUM VITAE

**Name:** Profesor Dr. Wa'el SALAH

**Rank:** professor of Linear Accelerator and Free Electron Laser

**Nationality:** Jordanian

**Marital Status:** Married

**Number of children:** 5 ( Hamzah, Majid, Sarah, Myriam and Yasm)



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**Domain of research:**

- Linear Accelerator
- Theoretical Free Electron Laser Physics (FEL)
- Experimental Atomic Laser Spectroscopy
- Experimental and Theoretical X-Ray Fluorescence
- Beam Optics

**Education:**

- 1992- 1995: Doctoral dissertation in Physics (major in Free electron Laser Physics) at Joseph Fourier University, Grenoble I, France.  
" Champ de sillage d'un faisceau d'électron accéléré dans un Photoinjector"
- 1990 - 1992: Master in Physics of Matter and Radiation, at Joseph Fourier University, Grenoble I, France  
" Effets de contraintes uni axiales et de pression hydrostatique sur des couches minces. Relation entres les effets de pression et l'épitaxie"
- 1989 - 1990 French Language at the University of Caen, France.
- 1984 - 1988: Bachelor of Physics at Yarmouk University, Irbid - Jordan.
- 1983 - 1984: General secondary education examination (scientific stream) at Zarqa - Jordan.

## **Professional Experience:**

- December 7, 2009-Present: Professor of Physics, Physics Department, The Hashemite University, Zarqa, Jordan.
- December 7, 2009: Promotion to professor grade in Physics, Physics Department, The Hashemite University, Zarqa, Jordan
- October 23, 2009-December 5, 2009: Associate Professor Rank A, Physics Department, The Hashemite University, Zarqa, Jordan.
- Jun1 1<sup>st</sup>., 2009-October 22 2009: Beamline Optics Scientist at Synchrotron SESAME, Jordan
- October 29, 2007-Mai 31, 2008: Associate Professor Rank A, Physics Department, The Hashemite University, Zarqa, Jordan.
- October 29, 2007: Promotion to Associate Professor Rank A of Physics, The Hashemite University, Zarqa, Jordan
- September 17, 2006 –September 16 2007: Head of the Physics Department, The Hashemite University, Zarqa, Jordan.
- September 1, 2003-October 28,2007: Associate professor of physics, The Hashemite University, Zarka- Jordan
- September 1, 2003: Promotion to associate professor of Physics, The Hashemite University, Zarka-Jordan
- February 2000 – August 31, 2003: Assistant professor of physics (rank A), The Hashemite University, Zarka-Jordan
- September 1998 – January 2000: Assistant professor of physics, Al-Balqa Applied University, Amman College for engineering Technology, Jordan
- October 1995 – September 1998: Assistant Professor of Physics, Al al-Bayt University, Mafraq - Jordan.
- 1st July 95 - October 95: Postdoctoral position Joseph Fourier University, Grenoble I, pursue my research on Free Electron Laser.
- January 92 - June 92: Research to produce high quality thin magnetic films by several techniques such as Laser evaporation at Louis Neel Laboratory of magnetism, CNRS, Grenoble-France.
- February 91-June 91: Research on Atomic Laser Spectroscopy and Laser Physics at Atomic Spectroscopy Laboratory, Caen University, Caen, France.

**Research Visits:**

- July 14-December 24, 2008: IAEA Fellow at SRF Daresbury, Warrington, UK
- June 1-July 6, 2008: Visiting Professor, Laboratory of Interaction of X-Ray with Matter (LIXAM), Centre Universitaire Paris-Sud, Orsay, France
- June 1 –August 30, 2007: Occasional Researcher, Cockcroft Institute for Accelerator science and Technology, Daresbury Laboratory, Daresbury, Warrington, WA4 4AD, UK.
- June 1 – September 30, 2006 Associate Researcher, Laboratoire de Chimie-Physique, Centre Universitaire Paris-Sud, Free Electron Laser CLIO.
- June 1 – September 30, 2005 Associate Researcher, Laboratoire Lure, Centre Universitaire Paris-Sud, Free Electron Laser CLIO.

**Graduate Studies:**

Direct Supervision of Several M. Sc. Students and Member on Examining Committees of Many Graduate Students at the Hashemite University.

**Languages Known:**

Arabic, English and French.

**Favorite courses to teach to under graduate and graduated students:**

- |                           |                       |                      |
|---------------------------|-----------------------|----------------------|
| -Quantum Physics          | -Atomic Physics       | -Solid State Physics |
| -Optics and Laser Physics | -Mathematical Physics | -Statistical Physics |
| -Group Theory             | -Electrodynamics      |                      |

**Computer Knowledge's:**

- Programs: TRANSPORT (Beam Transport Code), SHADOW VUI
- Systems: MS DOS, VMS, UNIX and MAC.
- Languages: FORTRAN, Basic.
- Software: Mathematica, Khaliedagraph, Macdrawpro and Desktop software.

**International Conferences:**

- 19-22 November 2009: Eighth SESAME user meeting, PETRA, Jordan
- 24 February- 25 February 2009: Simulation Methods for X-Ray Optics System, European Synchrotron Radiation Facility (ESRF), Grenoble, France
- 29 September-3 October 2008: 24<sup>th</sup>. International Linear Accelerator Conference, LINAC08, Victoria, British Colombia, Canada.
- 17 Novemver-19 November 2007: Sixth SESAME user meeting, Amman, Jordan
- 27 November-29 November 2006: Fifth SESAME user meeting, Alexandria, Egypt.

26 June-30 June 2006: Tenth European Particle Accelerator Conference, EPAC 2006, Edinburgh, UK

6 december-8 December 2005: Forth SESAME user meeting, Amman, Jordan

11October -13 October 2004: Third SESAME user meeting, Antalya, Turkey.

19 October-28 October 2002: First SESAME user meeting, Amman, Jordan

1st May - 5th May 1995: Particle Accelerator Conference, PAC 95, Dallas USA.

27th June-1st July 1994: 4th European Particle Accelerator Conference, EPAC 94, London, England

**Publications:** See list attached at the end of CV.

**References:**

**Prof. Roger M. Jones**

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## List of Publications

**23- W. Salah, M. S. del Rio**

Geometrical layout and optics modeling of the surface science beamline station at the SESAME synchrotron radiation facility

**J. Synchrotron Radiation, 18, (2011) 515**

**22- A. Tahat, W. Salah**

Designing of an Electronic Comprehensive Atomic Database accessible via WWW, for Peaceful Uses of Atomic Energy, With an Online Highly Qualified Computing Capabilities

**International Journal of Data Database Management System (IJDMS), Vol. 3(2) (2011) 1**

**21- A. Tahat, M. Tahat, W. Salah**

Python GUI Scripting Interface for Running Atomic Physics Applications

**The Python Paper Source Codes, Volume 3 (2011) 3**

**20- A. Tahat, W. Salah, A. B. Hallak**

PASS (Pixe Analysis Shell Software): "A computer utility program for the evaluation of PIXE spectra".

**International Journal of Particle Induced X-Ray Emission (PIXE), 20 (2010) 63**

**19- W. Salah, , M. S. del Rio, H. Hoorani**

Ray Tracing Flux Calculation for the Small and Wide angle X-Ray Diffraction (SAXS/WAXS) Station at the SESAME Synchrotron Radiation Facility

**Rev. Sci. Instrum. 80(9) (2009) 095106**

**18- W. Salah, Roger M. Jones**

Analysis of space charge fields using Lienard-Wiechert potentials and Method of Images in the RF-Free Electron Laser Photoinjector

**Nucl. Instr. & Meth. A 607 (2009) 498**

**17- W. Salah, Roger M. Jones, J.-L. Coacolo**

Analysis of the Transverse Kick to Beams in Low-Frequency Photoinjectors Due to Wakefield Effects

**Nucl. Inst. & meth. A 601 (2009) 264**

**16- J. P. Berthet, F. Glotin, J. M. Ortega, W. Salah**

Beam Adaptation at the Infrared FEL CLIO

European Particle Accelerator Conference, **EPAC 2006, 56-59, Edinburgh, UK**

**15 W. Salah, J. L. Coacolo, A. B. Hallak, M. Al. Obaid**

Time Dependent Formulation of the Energy Loss by an Accelerated Intense Electron Beam just Emitted by the Cathode of RF-FEL Photoinjector

**Nucl. Inst. & meth. A 564 (1) (2006) 66**

- 14- W. Salah, J. Al-Jundi,**  
Measurement of L X-Ray Cross-Sections and Relative Intensities of Heavy Elements  
by 15.2 keV Photons  
**J. Quant. Spectrosc. Radiat. Transfer, 94 (3) (2005) 325.**
- 13- W. Salah, A. B. Hallak**  
Analysis of a Ultra Short Accelerated Electron Beam Using the short range Monopole  
Wake Fields Driven by the Beam During its Penetration in the Drift Tube of the Laser-  
Driven RF-Electron Gun.  
**J. Phys. D, Applied Physics. 38 (2005) 2292.**
- 12- J. Al-Jundi, W. Salah, M. S. Bawa'aneh, and F. Afaneh**  
Exposure to Radiation from the Natural Radioactivity in Jordanian Building Materials.  
**Radiation Protection Dosimetry Journal. 118(1) (2005) 93.**
- 11- W. Salah**  
Analytical and numerical investigations of the evolution of wake fields of accelerated  
electron beam encountering cavity discontinuities in laser-driven RF-Free electron  
laser photoinjector.  
**Nucl. Inst. & meth. A 533(3) (2004) 248.**
- 10- W. Salah**  
L-x-ray Fluorescence Cross Sections of Heavy Elements in the Atomic Region  $57 \leq Z$   
 $\leq 71$   
**X-Ray Spectrom. 33(5) (2004) 372.**
- 9- W. Salah**  
Perturbation of the Energy Loss Spectra for an Accelerated Electron Beam  
Due to the Photo injector Exit Aperture  
**Eur. Phys. J. AP., 21 (1) ( 2003 ) 53.**
- 8- W. Salah**  
Modal Analysis of the Energy Loss for an Accelerated Electron Beam passing  
Through a Laser Driven RF-Gun  
**Europhys. Lett. 58(5) (2002) 673.**
- 7- W. Salah**  
Experimental Measurements of the Landé  $g_J$  Factor of Some Levels in Argon Atom  
Situated Near the First Limit of Ionization  
**Nucl. Inst. & meth. B, 196 (2002) 25.**
- 6- W. Salah**  
L-Shell Fluorescence Cross-Sections and relative intensities for La, Pr, Nd, Sm, Eu,  
Gd, Tb, Dy, Ho, Tm, Yb, and Lu at 16.9 keV"  
**Eur. Phys. J. AP.,19 ( 2002 ) 69.**
- 5- A. B. Hallak, W. Salah, J. Al-Jundi, and M. Jaghoub,**  
L- Subshell Ionization of Lutetium by  $^4He^{2+}$  Ion Bombardment  
**X-Ray Spectrom,31 (5) (2002) 391.**

**4- W. Salah**

Time Dependant Analysis of the Short-Range Monopole Wake Fields Driven by Accelerated Electron Beams

**Nucl. Inst. & meth. A 480 (2002) 398.**

**3- W. Salah, J.-M. Dolique,**

Emittance growth due to the wake field driven by an electron beam accelerated in a RF-gun of Free Electron Laser ‘‘ELSA’’

**Nucl. Inst. & meth. A 452 (2000) 18.**

**2- W. Salah, J.-M. Dolique,**

Theoretical approach of the Photo injector exit aperture influence on the wake field driven by an electron beam accelerated in a RF gun of Free Electron Laser ‘‘ELSA’’

**Nucl. Inst. & meth. A 447 (2000) 309.**

**1- W. Salah, J.-M. Dolique,**

Wake field of an electron beam accelerated in a RF-gun of Free electron laser ‘‘ELSA’’

**Nucl. Inst. & meth. A431 (1999) 27.**