

Curriculum Vitae

Name: Safeia Mahmoud Hamasha / Associate professor of atomic Physics

Date of Birth: 3/8/1970

Marital Status: Married

Nationality: Jordanian

Address: Hashemite University
Department of Physics
Zarka 13115
P.O. Box 150459

Education:

Ph.D.	Physics	2004	University of Nevada, Reno/ U.S.A
M.Sc.	Physics	1996	Yarmouk University / Jordan
B.Sc.	Physics	1992	Yarmouk University / Jordan

Dissertation:

Hamasha, S. (2004). Theoretical Modeling of M-Shell Spectra of Heavy Ions.
Ph.D. Dissertation, University of Nevada, Reno, U.S.A.

Thesis:

Hamasha, S. (1996). Magnetic Properties of a fine particles system contains Barium Ferrite. Masters Thesis, Yarmouk University, Jordan.

Professional Interests:

- Atomic Calculation.
- Kinetics Modeling of Heavy Ions
- Atomic Spectroscopy
- X-ray Spectroscopy
- Computational Physics

Position

2013- now	Associate professor of atomic physics, Hashemite University/ Jordan
2004 -2013	Assistant professor of atomic physics, Hashemite University/ Jordan
2008/2009	Chair of the department of physics/ Hashemite university
2007/2008	Dean Assistant/Faculty of science/ Hashemite University
2002 - 2004	Grad. Research Assistant, University of Nevada/ Reno/ USA
1999 - 2002	Teaching Assistant, University of Nevada/ Reno/ USA
1996 - 1997	Part time T.A, Jordan University of Science and Technology.
1993 - 1998	Teacher, Ministry of education/ Jordan

Educational Activates:

1. Teaching Experience (graduate and undergraduate):

general physics (1), general physics (2), general physics, general medical physics, general physics labs, modern physics, mathematical physics (2), quantum mechanics (1), quantum mechanics (2), electricity and magnetism (1), electricity and magnetism (2), atomic and molecular physics, computational physics, special topics: spectroscopy,

undergraduate seminar, graduate seminar, electrodynamics (graduate/ Jackson), atomic and molecular physics (graduate), and quantum mechanics (graduate).

2. Courses Coordinated:

1. General Physics I (16 sections)
2. General Physics II (12 sections)

3. Supervision of Graduate Research:

- 1) Kholoud M. Younes, M. Sc. thesis title: "Theoretical treatment of scattering cross section for localized and short- range potentials", The Hashemite University, May 2009.
- 2) Rania S. Shaieb, M. Sc. thesis title: "Advanced theoretical atomic calculations for Gold and some of its ions", The Hashemite University, April 2010.
- 3) Maher I. Abu Alrous, , M. Sc. thesis title: "Advanced atomic calculations for the atomic structure of Iron ions", The Hashemite University, April 2010.
- 4) Lama M. Fakhreddien, , M. Sc. thesis title: "Optical allowed and forbidden transitions for some Tungsten ions from Na- like W to V-like W", The Hashemite University, April 2011.
- 5) Asma Bzoor, M. Sc. thesis title: "Calculations of Optically allowed and forbidden transitions of Selenium Atom and Some of Its Ions", The Hashemite University, December 2011.
- 6) Ali Qasem, M. Sc. thesis title: "Atomic Structure and Spectra Calculations for Some Highly Ionized Iron Ions", The Hashemite University, August 2012.
- 7) Awwad Al-mashaqba, thesis title: "Fully Relativistic Atomic Calculations For Multipole Transition Rates Of Some Gold Ions", The Hashemite University, August 2014.
- 8) Khaldoon Al-Khateeb, thesis title: "Advanced Atomic Calculations for Atomic Structure and Transition Rates of Argon Ions", The Hashemite University, December 2014
- 9) Boshra Yousef, thesis title: " Calculations of Atomic Structure and Transition Rates of Some Highly Ionized Tungsten Ions" The Hashemite University, March 2015
- 10) Maryam Amarah, thesis title: " Advanced Atomic Calculations for Atomic Structure and Transition Rates of Argon Ions" The Hashemite University, November 2015
- 11) Sanna Mohammad, thesis title: "M-Shell Atomic Structure and Spectra Calculations for Some Tungsten ions" The Hashemite University, December 2016

4. Membership on Examining Committees for Postgraduate Studies

1. Amani Tahat, M. Sc. thesis title: "PIXE analysis shell software: a computer program for the evaluation of PIXE spectra", The Hashemite University, May 2007.
2. Zainab M. Al-Khateeb, M. Sc. thesis title: "Jellium model in the static fluctuation approximation", The Hashemite University, July 2007.
3. Husam A. Al Otaibi, M. Sc. thesis title: "Theoretical study and optimaization of the electron beam transport line of the free electron laser CLIO". The Hashemite University, December 2007.

4. Ghosoun H. Adawi, M. Sc. thesis title: "Imaging of ionization processes in the collision of ions with Nobel gases", The Hashemite University, May 2009.

5. Hala M. A. Edwan, M. Sc. thesis title: "Effect synthetic channel-forming peptides on the phospholipids bilayer membrane structure", The Hashemite University, December 2009.

And many more

5. Supervision of Undergraduate Research Projects:

I supervised about 30 undergraduate students in each semester that I taught the Seminar Course (Phys. 491) on different topics in Physics, quantum physics, atomic physics, plasma and nuclear physics. I taught this course in spring, 2004, in fall 2005.

Training Courses:

1. Teacher training workshop: special teaching skills through the graduate school at university of Nevada Reno/ USA., fall 1999
2. English technical writing training course, fall 1999 , University of Nevada, Reno/USA
3. Technology of Education, January 2004. The Hashemite University, Zarqa, Jordan
4. E- Learning and Blackboard, spring 2005. The Hashemite University, Zarqa, Jordan.

Honors, Awards, Fellowships and Scholarships:

1. Pyladelphia Award for the best software in Jordan, 2009

2. 2000 – 2003, the Hashemite University competitive scholarship toward the Ph.D. degree in Physics in the USA.
3. 1999 - 2001, graduate teaching assistant fellowship, University of Nevada/ Reno/ USA.
4. 2001-2003, graduate research assistant fellowship, University of Nevada/ Reno/ USA.
5. 1990, 1991, Dean's honor list of distinguished student, Yarmouk University, Jordan.
6. September 1988 – September 1992, Ministry of Education competitive scholarship for undergraduate studies, Jordan.

Grants:

1. 2010, Electronic and magnetic properties of strongly correlated electron systems in uranium, cerium and other rare-earth compounds probed with Vibrating Sample Magnetometer. The Hashemite University, Zarqa, Jordan
2. 2009, Construction atomic code for numerical simulation of electron impact ionization, works under windows. The Hashemite University, Zarqa, Jordan.
3. 2004, Theoretical modeling of M-shell X-ray spectra of W ions. . The Hashemite University, Zarqa, Jordan.

Conferences Attendance:

1. Feb 21-26 2000, Sciences 52nd Annual meeting, Reno, NV USA

2. March (19-23) 2000, 12 APS Topical conference on atomic processes in plasmas, Reno, NV USA
3. December (6-8), 2005, fourth SESAME user meeting, Amman Jordan
4. November (17-19), 2007, sixth SESAME user meeting, Amman Jordan

Computer Skills:

1. Sound knowledge in programming languages as: basic, F77, F90, F95, C, C++, and HTML.
2. Sound knowledge in operating systems as: MS Dos, WinNT, win2000/ xp/ 7, 10 Unix and Linux
3. Can deal easily with any software

Registered Computer Programs:

1. "Hamasha-Tahat (HTAC) atomic code" Authers: Safeia Hamasha, Amani Tahat. Jordan National library (ISSN #: 673/2/2009)
2. "HTAC2: Collisional Excitation Program" Authers: Safeia Hamasha, Amani Tahat. Jordan National library (ISSN #: 101/1/2010)
3. "HTAC3: Radiative Recombination & Photoionization Program" Authers: Safeia Hamasha, Amani Tahat. Jordan National library (ISSN #: 103/1/2010)
4. "HTAC4: Autoionization Program" Authers: Safeia Hamasha, Amani Tahat
5. "HTAC5: Electron Impact Ionization Program" Authers: Safeia Hamasha, Amani Tahat. Jordan National library (ISSN #: 102/1/2010)
6. "HTAC6: Collisional Radiative Kinetic Model Program" Authers: Safeia Hamasha, Amani Tahat

Publications:

1. A.S. Shlyaptseva, D. A. Fedin, **S. Hamasha**, S. Hansen, C. Harris, V. L. Kantsyrev, P. Neill, N. Quart, P. Beiersdorfer, U. Safronova. *X-ray Spectroscopy and Spectropolarimetry of high energy density plasma complemented by LLNL electron beam ion trap experiments*. Review of Scientific Instruments. 74, 1947 (**2003**).
2. U.I. Safronova, W.R. Johnson, A. Shlyaptseva, **S. Hamasha**, *Relativistic many-body calculations of excitation energies and transition rates from core-excited states in copperlike ions*, Physical Review A, 052507 (**2003**).
3. A. S. Shlyaptseva, S. M. Hamasha, S. B. Hansen, J. E. Bailey, P. W. Lake, D. S. Nielsen, W. A. Stygar, P. D. Lepell, T. J. Nash, C. Deeney, U. I. Safronova, A.S. Shlyaptseva, V.L. Kantsyrev, D.A. Fedin, **S. Hamasha**, S.B. Hansen, N. Quart. *X-ray spectropolarimetry as a new diagnostic of anisotropy plasma sources*. SPIE Conf. Proc., v. p 5196,. (**2004**).
4. P. Neill, C. Harris, A.S. Safronova, **S. Hamasha**, S. Hansen, U.I. Safronova, and P. Beiersdorfer. *The study of X-ray M-shell spectra of W ions from the Lawrence Livermore National Laboratory Electron Beam Ion Trap*. Canadian Journal of Physics 82: 931–942 (**2004**).

5. A. Shlyaptseva, D. Fedin, **S. Hamasha**, C. Harris, V. Kantsyrev, P. Neill, N. Quart, and U. I. Safronova, P. Beiersdorfer, K. Boyce, G. V. Brown, R. Kelley, C. A. Kilbourne, and F. S. Porter. *Development of M-shell x-ray spectroscopy and spectropolarimetry of z-pinch tungsten plasmas*. Review of Scientific Instruments 75, 3750. (2004).
6. **S.M. Hamasha**, A.S. Shlyaptseva, and U.I. Safronova. *E1, E2, M1, and M2 transitions in the nickel isoelectronic sequence*, Canadian Journal of Physics. Vol. 82: 331-356. (2004).
7. M. Abu-Allaban, **S. Hamasha** and Alan Gertler. *Road Dust Resuspension in the Vicinity of Limestone Quarries in Jordan*. J. Air & Waste Management Association. 56:1440–1444. (2006).
8. U.I. Safronova, A.S. Safronova, **S.M. Hamasha**, and Beiersdorfer, P. Relativistic many-body calculations of multipole (E1, M1, E2, M2, E3, and M3) *transition wavelengths and rates between 3l-4l' excited and ground states in nickel-like ions*. Atomic Data and Nuclear Data Tables. V. 92: 47-104.(2006).
9. **S. Hamasha**, M. Abu-Allaban and A. Abu-Allaban. *Modeling Atmospheric Turbidity over Zarqa using metrological data*. Jordan Journal of Physics. V 1: 53-60. (2008).
10. **S. Hamasha**, A. Tahat, HTAC: *An atomic multiplet code for the calculation of various atomic properties*, The Python Papers, 5(1) :3 (2010)
11. **S. Hamasha**, M. Abu-Allaban, A. Tahat, *Developing a New Atomic Physics Computer Program (HTAC) to Perform Atomic Structure and Transition Rates in Three Advanced Methods*. Journal of applied sciences. 11 (15): 2699-2699 (2011).
12. **S. Hamasha**, A. Naser, *Developing a Comprehensive Atomic Utility Program Enhanced with a Hydrogenic Model for Plasma and Astrophysics Applications*. Journal of applied sciences. 11: 3413-3420 (2011).
13. **S. Hamasha**, R. Alshaiub. *Constructing Theoretical M-Shell Spectra for Mg-Like Au through Cl-Like Au Ions in Gold Plasma Diagnostics*. Pyhsica Scripta 86: 65302 (2012).
14. **S. Hamasha**. *Energy levels, wavelengths, and transition rates of multipole transitions (E1, E2, M1, M2) in Au⁶⁷⁺ and Au⁶⁶⁺ ion*. Atomic Data and Nuclear Data Tables journal. 99; 595-632 (2013).
15. **Z. Khatari, S. Hamasha**. *The interaction effects on the adsorption properties of an alternating copolymer chain at liquid–liquid interface*. International Journal of Modern Physics B; 28(32):1450229 (2014).
16. **F. Afaneh, R. Ali, R. Qasem, N. Balasmeh, S. Hamasha, R. Dörner**. *First results from the Jordan COLTRIMS imaging system*”, Nuclear Instruments and Methods in Physics Research Section B; 380, 84–89 (2016).
17. **F. Afaneh, S. Hamasha, Kh. Al Khateeb**. *Relativistic Configuration Interaction Calculations of Multi-Pole Transitions Rates and Spectra of ArI and ArII*. Advanced Studies in Theoretical Physics, 10, 5, 235 – 266 (2016).