

CURRICULUM VITAE

PERSONAL DETAILS:

Name: **Hatem Saleh Mahmoud Widyan**
Date of Birth: April 1st 1969
Place of Birth: Al-Kharaj-Irbid, Jordan
Nationality: Jordanian
Civil Status: Married

CONTACT INFORMATION:

Present Address: Department of Physics
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(family home)

Academic Record:

Degree/Examination	Subject	Year	Institution	Marks	Remarks
B.Sc.	Physics	1991	Yarmouk University, Irbid, Jordan	74.6 %	Good
M.Sc.	Physics	1994	Aligarh Muslim University, Aligarh, India	67 %	First Class
Ph.D.*	Physics	1999	University of Delhi, India	—	—

* **Thesis Title:** "Phase Transition in Scalar Field Theory and Topological Defects in the Early Universe."

Areas of Interest:

1. Early Universe Physics and Cosmology.
2. Phase Transitions.
3. Astrophysics.

Computing Skills:

1. Languages: FORTRAN;
2. Mathematica;
3. LaTeX;
4. Operating Systems: Unix, Windows;

Scientific Employment:

Institution	From	To	Rank
Jordan University of Science & Technology	2 nd Semester	1999/2000	Part Time Lecturer
Jordan University of Science & Technology	17-9-2000	1-9-2002	Full Time Lecturer
Al-Hussein Bin Talal University	22-9-2002	1-3-2003	Full Time Lecturer
Al-Hussein Bin Talal University	2-3-2003	28-2-2006	Assistance Professor
Al-Hussein Bin Talal University	1-3-2006	13-9-2008	Associate Professor
Tafila Technical University	14-9-2008	13-9-2009	Associate Professor (Sabbatical)
Al-Hussein Bin Talal University	14-9-2009	12-9-2010	Associate Professor
Al al-Bayt University	13-9-2010	19-2-2013	Associate Professor
Al al-Bayt University	20-2-2013	9-9-2018	Full Professor
Jordan University of Science & Technology	10-9-2018	8-9-2019	Full Professor (Sabbatical)
Al al-Bayt University	9-9-2019	date	Full Professor

Teaching Experience:

I have taught the following courses:

1. Remedial Physics.
2. General Physics (1,2).
3. General Physics for Medical Students.

4. Physics Labs.
5. Geometrical Optics.
6. Mathematical Physics (1,2).
7. Physics of Vibrations and Waves.
8. Electronics.
9. Modern Physics.
10. Classical Mechanics (1,2).
11. Quantum Mechanics (1,2).
12. Electromagnetic Theory (1,2).
13. Properties of Matter.
14. Statistical Physics
15. Solid State Physics
16. Astrophysics
17. Elementary Particle Physics
18. Computational Physics (Graduate Level)
19. Mathematical Physics (Gradate Level)
20. Classical Mechanics (Gradate Level)
21. Quantum Mechanics (Gradate Level)

Adminstration Experience:

Institution	Position	From	To
Al-Hussein Bin Talal University	Head of the Physics Department	1-9-2003	10-9-2005
Al-Hussein Bin Talal University	Vice Dean Faculty of Science	11-9-2005	9-9-2006
Al-Hussein Bin Talal University	Dean of the Scientific Research	10-9-2006	9-9-2008
Al al-Bayt University	Head of the Physics Department	11-9-2012	20-9-2014
Al al-Bayt University	Dean of Faculty of Aviation	5-11-2015	4-11-2017
Al al-Bayt University	Head of the Physics Department	3-10-2021	to date

Talks, Seminars etc.

1. *The order of the phase transition in φ^4 theory* — delivered at the Eleventh DAE High energy Symposium, Guwahati, India (December 1996).
2. *A study of the phase transition in φ^4 theory with φ^3 symmetry breaking* — delivered at the 15th International Conference on General Relativity and Gravitation, Pune, India (December 1997).
3. *Treating Quantum Chromo dynamics as Constrained System* — talk delivered at the Annual Scientific Day of the Faculty of Science & Arts, Jordan University of Science & Technology, Jordan (May 2001).
4. *Top Ten Unsolved Problems in Physics* — talk delivered at the Annual Scientific Day of the Faculty of Science & Arts, Jordan University of Science & Technology, Jordan (May 2002).
5. *Finite Temperature Phase Transition in ϕ^6 Potential* – talk delivered at the Cairo International Conference on High Energy Physics (CICHEPII), GUC, Cairo, Egypt (January 2006).

Schools/Conferences/Workshops

1. *School on Large Scale Structure Formation in the Universe*, Mysore, India, November 1994.
2. *X SERC School in Theoretical High Energy Physics*, Banaras, India, Feb-March 1995.
3. *XI SERC School in Theoretical High Energy Physics*, Chandigarh, India, April 1996.
4. *Conference-cum-Workshop on High Energy Physics & Computational Physics*, Delhi, India, October 1996.
5. *XII DAE-symposium on High Energy Physics*, Guwahati, India December, 1996.
6. *School on Gravitation & Cosmology*, Kochi, India, October, 1998.
7. *Workshop on High Energy Physics Phenomenology V*, Pune, India, 1998.
8. *Summer School in High Energy Physics and Cosmology*, Trieste, Italy, 1998.
9. *Workshop on Cosmology : Observation Confronts Theories*, Kharagpure , India, 1999.
10. *International Symposium on Many Body Problem*, New Delhi, India, 1999.
11. *Cosmo 99*, Trieste, Italy, 1999.
12. *Workshop on Physics Beyond the Standard Model*, Ain Sham University, Cairo, Egypt, 2003.
13. *Summer School on Particle Physics*, Trieste, Italy, 2003.
14. *Workshop on Physics Beyond the Standard Model*, Ain Sham University, Cairo, Egypt, 2004.

15. Visiting Abdus Salam ictp, Trieste, Italy, July 2–August 20, 2005
16. *Workshop on Recent Developments in Astronuclear and Astroparticle Physics*, Trieste, Italy, 19-23 November 2012.

Theses

I have supervised and co-supervised many graduate students. Some of them are the following:

Title	Degree	Institution	Year
Complex Study of the Binary Stellar System HD 25811	M.Sc.	Al al-Bayt	2011
Time Dependent Decay Rate for Metastable Vacuum in ϕ^4 Field Theory	M.Sc.	Al al-Bayt	2011
Heavy Quarkonia Properties from Different Potential Models	M.Sc.	Al al-Bayt	2012
Co-doping carbon nanotubes for toxic gas sensors applications: Ab initio simulation	M.Sc.	Al al-Bayt	2015
Physical and orbital properties of the stellar system HIP 43766	M.Sc.	Al al-Bayt	2020
Trigonometric Parallax discrepancies in space telescopes measurements; the case of the binary star Hip 84976	M.Sc.	Al al-Bayt	2020
Fundamental Parameters of Some Stellar Systems	M.Sc.	Al al-Bayt	2021

Published Books

1. *Al-Kindi & His Treatise On Light Rays*, **Vijaya Varma, Hatem Widyan**, Published by Indian Institute of Advanced Study, Shimla, 2019

Research Papers:

1. *Atmospheric and Fundamental Parameters of Eight Nearby Multiple Stars*, **Abdallah M. Hussein, Mashhoor A. Al-Wardat, Ahmad Abushattal, Hatem S. Widyan, Enas M. Abu-Alrob, Oleg Malkov, and Martin A. Barstow**, *The Astronomical Journal* (2022).
2. *Physical and geometrical parameters of CVBS XIV: The two nearby systems HIP 19206 and HIP 84425*, **M. A. Al-Wardat, E. Abu-Alrob, A. M. Hussein, M. Mardini, A. Taani, H. S. Widyan, Z. T. Yousef, H. M. Al-Naimiy, and N. Yusuf**, *Research in Astronomy and Astrophysics*, Vol. 21, No. 7 (2021) 161.
3. *Physical and orbital properties of the stellar system HIP 43766*, **Hatem Widyan and Hussam Aljboor**, *Research in Astronomy and Astrophysics*, Vol. 21, No. 5 (2021) 110.
4. *Various Properties of Heavy Quarkonia From Flavor-Independent Coulomb Plus Quadratic Potential*, **Anood Al-Oun, Ahmed Al-Jamel, H. Widyan**, *Jordan Journal of Physics*, Vol. 8, No. 4 (2015) 199.

5. *Modified Physical and Geometric Parameters of the Eclipsing X-Ray Binary System Centaurus X-3*, **M. A. Al-Wardat, H. Al-Naimiy, A. Taani, A. Khasawneh, O. Al-Banawi, and H. S. Widyan** , Astrophysical Bulletin, Vol. 69, No. 3, pp. 247–251 (2014).
6. *Comment on Maxwells equations and electromagnetic Lagrangian density in fractional form [J. Math. Phys. 53, 033505 (2012)]* **Eqab M. Rabei, A. Al-Jamel, H. Widyan, and D. Baleanu** , JOURNAL OF MATHEMATICAL PHYSICS 55, 034101 (2014).
7. *Complex Analysis of the Stellar Binary HD25811; A Subgiant System*, **Mashhoor A. Al-Wardat, Hatem S. Widyan and Ahmed Al-thyabat**, Publications of Australian Astrophysical Society (PASA), Vol. 31, e005, (2014). (arXiv:1311.5721 (November 2013 .)
8. *Heavy quarkonium mass spectra in a Coulomb field plus quadratic potential using Nikiforov-Uvarov method*, **Ahmed Al-Jamel and Hatem Widyan**, Applied Physics Research 4 (2012) 94 .
9. *The octupole field effect on the H atom spectrum in noncommutative space*, **Ahmed Al-Jamel, Hatem Widyan and Eqab M. Rabei**, Adv. Studies Theor. Phys. 6 (2012) 887.
10. *Oscillating bounces in ϕ^6 potential*, **Hatem Widyan**, Adv. Studies Theor. Phys. 6 (2012) 797.
11. *Time dependent action in ϕ^6 potential*, **Hatem Widyan and Mashhoor Al-Wardat**, Comm. Theor. Phys. 58 (2012) 19.
12. *Classical Solution for the Bounce Up to Second Order*, **Hatem Widyan, Mashhoor Al-Wardat**, Chin. J. Phys. 48 6 (2010) 736.
13. *Parameters of the Visually Close Binary System Hip11253 (HD14874)* , **M. A. Al-Wardat and H. Widyan**, Astrophysical Bulletin 64 (2009) 365.
14. *Finite-temperature phase transition in ϕ^6 potential*, **Hatem Widyan**, Can. J. Phys. 86 (2008) 1313.
15. *Atmospheric Modeling of the Stellar Binary System 9Cyg*, **Al-Wardat M. and Widyan H.**, The International Conference on Modelling and Simulation (MS08 JORDAN), pp. 184-194 (2008).
16. *Bubble formation in ϕ^6 potential*, **Hatem Widyan**, Can. J. Phys. 85 (2007) 1055.
17. *Treating 'tHooft-Polyakov monopole as a constrained system*, **Hatem Widyan**, Hadronic Journal Supplement, 19 (2004) 207.
18. *A scenario for neutrino oscillations in a nonuniversal gauge interaction model*, **Hatem Widyan, Ehab Malkawi and M.B. Altaia**, Hadronic Journal, 25 (2002) 91.

19. *Application of fractional calculus to gravity*, Akram R. Rousan, Ehab Malkawi, Eqab M. Rabei, **Hatem Widyan**, fractional calculus & applied analysis, 5 (2002).
20. *Treating quantum chromodynamic as constrained system*, Eqab M. Rabie, **Hatem Widyan**, Ehab Malkawi, Hadronic Journal, 20 (2001) 507.
21. *Light sterile neutrino in the top - flavor model*, Ehab Malkawi, E. I. Lashin, **Hatem Widyan**, Phys. Rev. D62 (2000) 033005.
22. *Analytical approach to the transition to thermal hopping in the thin- and thick - wall approximation*, **Hatem Widyan**, A. Mukherjee, N. Panchapakesan, R.P. Saxena, Phys. Rev. D62 (2000) 025003.
23. *Topological defects in the left- right symmetric model and their relevance to cosmology*, U.A. Yajnik, **Hatem Widyan**, Shobhit Mahajan, Amitabha Mukherjee, Debajyoti Choudhari, Phys. Rev. D59 (1999) 103508.
24. *Bounce solutions and the transition to thermal hopping in ϕ^4 theory*, **Hatem Widyan**, A. Mukherjee, N. Panchapakesan and R.P. Saxena, Phys. Rev. D59,(1999) 045003.