

**C.V**  
**Prof. Sami M. AL-Jaber**  
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**AN-Najah National University**  
**Nablus, West Bank, Palestine.**

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**Birth :** January, 26, 1959, Nablus, Palestine  
**Position:** Professor, Theoretical Physics, Physics Department  
vice president for academic affairs, AN-Najah National University  
Nablus, Palestine.

**Education:**

**Ph.D** Theoretical Physics, August 1991.  
SIU-C, Carbondale, Illinois, USA.  
**M.A** Theoretical Physics, May, 1985.  
SIU-C, Carbondale, Illinois, USA.  
**B.Sc** Physics, AN-Najah National University  
Nablus, West Bank, Palestine.

**Experience:**

Vice President for Academic Affairs: August 18, 2013 – Aug. 2014.

Dean of Sciences: July 2012 – August 17, 2013.

Dean of scientific research, Jan. 2012 – July 2012.

**Professor: 2009-2010** , Sabbatical leave to Palestine Technical university-  
Kadoorie, Palestine , Dean of Scientific Research & Graduate Studies.

Dean of scientific research: 2007 – 2009, An-Njah National University.

Dean of faculty of sciences: 2004 – 2007, An-Njah National University.

Dean of graduate studies: 2002 – 2004, An-Njah National University.

**Professor:** from 2003 to present, Physics Department.  
AN-Najah National University, Nablus, Palestine.

**Associate Prof.:** 1998 – 2003, Physics Department, AN-Najah National University, Nablus, Palestine.

**Assistant Prof.:** 1991 – 1992 , Physics Department, SIU-C, Illinois, USA.

1992 – 1998 , Physics Department, AN-Najah National University, Nablus, West Bank, Palestine.

**Teaching Assistant:** 1986 – 1991 , Physics Department, SIU-C, Illinois, USA.

**Lecturer :** 1985 – 1986, Physics Department, AN-Najah National University, Nablus, West Bank, Palestine.

## **Publications:**

1. Sami M. AL-Jaber and Walter C. Henneberger (1990). The restricted rotor: the effect of topology on quantum mechanics. *J. Phys.A: Math. Gen.* 23, 2939.
2. Sami M. AL-Jaber, Xingshu Zhu, and Walter C. Henneberger (1991). Interaction of a moving magnetic dipole with a static electric field. *Eur. J. Phys.*12, 268.
3. Sami M. AL-Jaber and Walter C. Henneberger (1992). Topological considerations in quantum theory. *IL. Nuovo Cimento*, 107B, No.1, 23.
4. Sami M. AL-Jaber and Walter C. Henneberger (1992). Momentum conservation in the Aharonov – Bohm effect. *IL. Nuovo Cimento*, 107B, No.4,485.
5. Sami M. AL-Jaber (1995). Momentum conservation in the Aharonov – Casher effect. *IL. Nuovo Cimento*, 110B, No.8, 993.
6. Sami M. AL-Jaber and Walter C, Henneberger (1995). Decay of the charged harmonic oscillator. *AN-Najah J. Res.* 3, No.9,
7. Sami M. AL-Jaber (1995). Quantization of angular momentum in the N-dimensional space. *IL. Nuovo Cimento*, 110B, No.8, 1003.
8. Sami M. AL-Jaber (1996) . Origin of the Darwin term. *AL-Manarah*, 1, No.3, 47.
9. Sami M. AL-Jaber (1997). On the radial part equation of the wave function in N dimensions. *IL. Nuovo Cimento*, 112B, No. 5, 761.
10. Sami M. AL-Jaber (1998). The fine structure of the hydrogen atom in N dimensions. *IL-. Nuovo Cimento*, 113B, No. 5, 651.
11. Sami M. AL-Jaber (1998) . Hydrogen atom in N dimensions. *International J. Theor. Phys.* 37, No.4, 1289.
12. Sami M. AL-Jaber (1999). Fermi gas in D – dimensional space. *International J. Theor. Phys.*, 38, No. 3, 919.
13. Sami M. AL-Jaber (2000). N – Dimensional bound states for an inverse fraction power potential. *AN-Najah J. Res.*, 14, 53.
14. Sami M. AL-Jaber ( 2000). The second derivative of a delta – function potential: An exactly solvable model. *IL. Nuovo Cimento*, 115B, No. 12, 1397.

15. Sami M. AL-Jaber and Subhi K. Salih ( 2000 ). Energy consideration in the two- capacitor problem. *Eur. J. Phys.*, 21, No. 6, 341.
16. Sami M. AL-Jaber ( 2001). Evaluation of the product of a finite sum of associated Legendre Polynomials. *AL – Manarah*
17. Sami M. AL-Jaber ( 2001). Ground – state energy of the N – dimensional atoms. *IL. Nuovo Cimento*, 116B, No. 5, 593.
18. Sami M. AL-Jaber ( 2001). Photoionization of a one – electron N – dimensional atom. *International J. Theor. Phys.*, 40, No. 11, 2045.
19. Sami M. AL-Jaber ( 2002). Some aspects of an infinite N – dimensional spherical potential well. *Pakistan J. of Applied Sciences*, 2, No. 2, 228.
20. Sami M. AL-Jaber ( 2003). Planck's spectral distribution law in N dimensions. *International J. Theor. Phys.*, 42, No. 1, 111.
21. Sami M. Al-Jaber (2002). Harmonic oscillator in an impenetrable spherical well. *IL. Nuovo Ciminto*, 117B, No. 4, 433.
22. S.M. AL-Jaber and R.J. Lombard (2005). Connection Between the Moments of the Ground-Stage Density in N-Dimensional Space. *J. Phys. A: Math. Gen.* 38, 4637.
23. S. M. AL-Jaber (2005). Strongly Singular Potentials in One dimension *Najah. J. Res.* 19.
24. A. M. Abu-Labdeh and S. M. AL-Jaber, 2008. Energy consideration from non-equilibrium to equilibrium state in the process of charging a capacitor. *Journal of Electrostatics*, Vol. **66**, 190 – 192.
25. S.M. AL-Jaber (2008). A confined *N*-Dimensional Harmonic Oscillator. *Int. J. Theor. Phys.*, Vol. 47, no.7, 1853-1864.
26. S. M. AL-Jaber (2008). Harmonic Oscillator in an Impenetrable, *N*-Dimensional Spherical Well. *Union Arab Journal.*, Vol.6, p.1-13.
27. S. M. AL-Jaber (2008). Ideal Bose Gas in Higher Dimensions. *AN-Najah J. Res.*, vol. 22, p. 167-180.
28. S. M. AL-Jaber (2008). Degenerate Electron Gas and Star Stabilization in D Dimensions. *Nuovo cimento* Vol. 123B, no. 1, 17-2
29. M. Shaqqoor and Sami M. AL-Jaber (2009). A confined hydrogen atom in higher space dimensions. *International Journal of Theoretical Physics*, Vol. 48, no.8, 2462-2472.
30. S. M. AL-Jaber (2010) Energy and Momentum Considerations in an Infinite Solenoid. *JEMAA*, vol. 2, 169-172.
31. S. M. AL-Jaber (2010) Multidimensional Electrostatic Energy and Classical Renormalization. *J. Natural Science*, Vol. 2, no. 7, 760-763.
32. S. M. Al-Jaber (2010) Variational Methods for Ground State energy of Helium Atom in Higher Space Dimensions. *IL-Nuovo Comento B*, Vol. 125, no. 9, 1099-1108.
33. S. M. AL-Jaber (2010) Some Remarks on approximation methods for quantum systems in higher space dimensions. *JAAUBAS*, Vol. 9, 18-22.

34. S. M. AL-Jaber and Abdel-Rahman Abu-Labdeh (2011) Effect of a magnetic field on atomic orbital. J. Modern Phys., Vol.2, 1-4.
35. S. M. Al-Jaber and A. R. Abu-Labdeh (2011) Energy Consideration in Process of Transition Equilibrium State. J. Natural Science, Vol. 3, No.2, 136-140.
36. S. M. AL-Jaber (2011) Path Integral Approach to Faraday's Law of Induction, JEMAA, Vol.3, No.6, 184-186.
37. S. M. AL-Jaber (2013) , Solution of the Radial N-Dimensional Schrödinger Equation Using Homotopy Perturbation Method, Romanian J. Physics, Vol. 58, Nos. 3-4, P. 247-259.
38. S. M. AL-Jaber (2013) Role of Angular Impulse Exerted on a Moving Electron in a Magnetic field, N. J. Res. Vol. 27, Issue 1, 151 – 158.
- 39.

### **Research Interest:**

1. N – dimensional problems in quantum theory and mathematical physics.
2. Confined quantum systems
3. Aharonov – Bohm and Aharonov – Casher effects and their applications.
4. Point interactions or the so called zero – range potentials.
5. Fundamental problems in the foundations of quantum mechanics.

### **Conferences and workshops:**

1. APS March Annual Meeting, St Louis, MO, USA, 1989.
2. Summer School of High Energy Physics and Cosmology, International Center for Theoretical Physics (ICTP), Trieste, Italy, 1989.
3. Illinois Physics Teacher Association, St. Louis, MO, USA, 1990.
4. Condensed matter workshop, International Center for Theoretical Physics (ICTP), Trieste, Italy, 1994.
5. DAAD sponsored visit, Invited by Prof. Beckmann, University of Mainz, Mainz, Germany, summer 1995.

6. Second Symposium on Magnetism and Magnetic Materials, Yarmouk University, Irbid, Jordan, 1996.
7. British Council sponsored visit, Invited by Sir Prof. Michael Berry, Bristol university, Bristol, United Kingdom, 1998.
8. Fourth International Conference on Condensed Matter Physics, University of Jordan, Jordan, 2000.
9. Seventh Petra School in Physics, University of Jordan, Jordan, 2000.
10. International Conference on Condensed Matter Physics, AN-Najah National University, Nablus, West Bank, Palestine.
11. University of Paris sponsored visit, Invited by Prof. Roland Lombard, University of Paris Sud XI, Orsay, France, 2003.
12. University of Paris sponsored visit, Invited by Prof. V. Rivasseau, University of Paris Sud XI, Orsay, France, 2005.
13. Aleppo University, Syria, College of sciences Dean's meeting, Nov., 2006.
14. Electrostatic Conference 2007, Oxford, U.K, March 25-29, 2007.
15. Second Physics conference, An-Najah National University, May 7-8, 2007.
16. CICUP meeting 2007, Paris, France, Nov.6, 2007.
17. Research Development. March Meeting 2008, Ministry of Higher education, Ramallah.
18. Research Development. June meeting 2008, Ministry of Higher education, Ramallah.
19. Invited speaker at International conference on modern trends in mathematics and physics, July 28-30, 2008. Birzeit university, Ramalla, Palestine.
20. Nanotechnology conference, Nov. 10-13, 2008, Jordan university.
21. Cairo Conference on FP7 calls, May 18 – 19, 2009.
22. CMMP IOP conference, University of Warwick, UK, Dec. 16-18, 2009.
23. International workshop on advanced materials. Ras AL-Khaimah, UAE, Feb.16-18, 2010.
24. DAAD sponsored visit, Invited by Prof. A. Hujeirat, University of Heidelberg, Heidelberg, Germany, Summer 2011.
25. Modern Trends in Mathematics & Physics: Summer 2012.
26. EPIC Scholarship visit, Technique University of Berlin, June 3 – July 3, 2013.
27. Vice Chancellor's Forum, Sept. 2013 Islamabad, Paikstan.
28. Solution of Partial Differential Equations by Technique Transformations Conference. Islamabad, Jan. 30-Feb.1, 2014.
29. Erasmus Mundus Avempace II project. Visit to TU-Berlin, May 29 – June 29, 2014.
30. Visit Geneva – Switzerland, June 12 – June 15, 2014.
31. ICPST conference – Doha, Jan. 7-9, 2015.

## **Professional Positions :**

1. Chairman of Physics Department, AN-Najah National University, (Oct. 1999 – Oct.2000).
2. Chairman of Department of Natural Sciences for graduate studies, AN – Najah National University, (Oct. 2000 – Oct.2002).
3. Dean of Graduate School, AN-Najah National University, (Oct.2002 – Aug.2004).
4. Dean of College of Sciences, AN-Najah National University, (Aug. 2004 – Aug. 2007).
5. Dean of Scientific Research, AN-Najah National University, (Aug. 2007 – 2009).
6. Dean of Scientific Research & Graduate studies, Palestine Technical University, Tulkarm, Palestine, 2009-2010), on Sabbatical leave.
7. Dean of Scientific Research: Jan 2012-July 2012, An-Najah N. University.
8. Dean of Sciences: July 2012 –August 17, 2013, An-Najah N. University.
9. Vice President for Academic Affairs: August 18 2013 – Present, An-Najah National University.
10. Member in Higher council of Excellence & Innovation, 2012 – present.
11. Signing agreement between An-Najah National University and Atlas Experiment at CERN, June 13, 2014.

## **Professional Activities:**

1. Member of the Institute of Physics (IOP), London, United Kingdom.
2. Physics graduate committee member, Physics department, AN-Najah National University, Nablus, West Bank, Palestine, (1996 – present).
3. Physics research committee member, Physics department, AN-Najah National University, Nablus, West Bank, Palestine.
4. Member of the college of sciences council, AN-Najah National University, Nablus, West Bank, Palestine, (1995 – 1996, 1998 – 2000, Aug. 2004 - present).
5. Member of the graduate school council, AN-Najah National University, Nablus, West Bank, Palestine, (2000 – 2004).
6. Editorial Board member, AN-Najah J. Res., AN-Najah National University, 1999 – 2001.

7. Chairman of organization committee for physics conference, AN-Najah National university, Nablus, West Bank, Palestine, 2000.
8. Chairman of promotion committee in physics, AN-Najah National University, Nablus, West Bank, Palestine, ( 1998 – present ).
9. Member of Dean's Council, AN-Najah National University, Nablus, Palestine, (2002 – present).
10. Member of University Council, An-Najah National University, Nablus, West Bank, Palestine, ( 1999 – present).
11. Member of organization committee for the second physics conference, An-Najah National university, Nablus, 2007.
12. Member of the organization committee of mathematics and physics conference at Bir Zeit university, Ramallah, July, 2008.
13. Chairman of PCMTMP II, An-Najah National University, Nablus, Palestine, 2-4 Aug. 2010.
14. Editorial Board member – J. Modern Physics, 2011-present.
15. Academic Editor – Phys. Rep. & Res., 2012 – present.

### **Awards & Prizes**

1. Amideast Scholarship, Washington D.C., USA, 1983 – 1985.
2. Dissertation Research Award, graduate school, SIU – C, Carbondale, Illinois, USA, 1990.
3. The Islamic bank Award in Physics and Chemistry, 2005. Participant.
4. AN-Najah Research Prize in natural Sciences, 2007.
5. PFDP teaching excellence award 2010.
6. Best oral presentation certificate, ICPST conference, Doha, Jan. 7-9, 2015.

### **A statement of Teaching Philosophy**

**Sami M. AL-Jaber**

***Department of Physics, An-Najah National University, Nablus.***

As a professor of theoretical physics, I am interested in teaching students to develop critical and creative thinking ability, which is consistent with university mission. Critical thinking and problem-solving skills are some of the most important assets that physics has to offer students regardless of their major field. This necessarily requires teaching effectiveness which implies the ability to instill in students the love of learning and teach them that the real value in their education is not found in their grade point average, but in knowledge and way of thinking that

they take away when they graduate. It is imperative that I do everything I can to see that they leave classroom with critical thinking and problem-solving skills to face future challenges, as well as an appreciation of the beauty and wonder of physics and the natural universe.

The pedagogy of teaching physics presents unique challenges. For undergraduate students, great effort must be made to engage them in the learning process. For graduate students, topics are far more specialized and focused, so students do not need to be convinced for the value of experience since they are there because they choose to be. I strongly believe that to be an effective professor, I need to be current in literature and research. Scholarly research and teaching effectiveness are intertwined and inseparable. For example, I have some publications that deal with basic concepts and fundamentals in physics at the freshman students level and others at senior level in the field of quantum mechanics. I usually touch the results of these publications in teaching relevant courses and my observation tells that this stimulates the awareness and curiosity of students. Therefore, my approach in teaching is a reflection of my approach to physics research. It gives a pleasure in attacking complex problems, not because they are complex, but because by breaking them down and systematically unraveling the mysteries they hold I can hope to gain insight into the fundamental physical principles at their core.

Active teaching techniques and interaction in the classroom are great tools when used in an appropriate and effective manner. So as a physics professor, I implement different teaching styles to meet different learning styles of students, e.g lecturing, solving home work style problems, asking peer-instruction questions, and demonstrations. Learning is a journey with a professor and students walking together through the material. The journey is easier to follow if there are clear objectives and goals and boundaries laid out at the beginning of the semester. These form the basis of the journey, same as the road map of a tour journey in a big crowded city like Chicago.

Since physics is about mastering concepts, students need to be challenged by throwing less information and formulas but more understanding. To keep students engaged, starting with my own enthusiasm for the subject, exciting demos, and humorous examples. Physics is built on the notion that a few physical laws govern the world around us, students respond favorably when I connect physics to real-life situations. Challenging students to think about what they observe in everyday situation is a great way to open their mind. I spend most of class time discussing and applying major results rather than detailed derivation. My focus on ideas and concepts and understanding extends beyond classroom. On home works and exams, I require students to



explain and illustrate their work. All the exams I give (except introductory physics courses) are open book ones. This allows enough time for students to spend on understanding the ideas, concepts, and the mathematical formulas, and to learn how and when to use them for solving problems. Students always come to my office and express their appreciation for my strategy of lecturing and open book exams, rather than just memorizing formulas for the exam and forgetting them afterwards. I also noticed that students subjected to this learning strategy feel and taste the beauty of physics and they acquire high self-confidence in what they learn.

It is important for the professor to be well prepared for class with well-thought-out lesson plans and materials. A successful professor makes objectives clear and breaks down concepts into pieces being small enough to digest, but contain enough substance to remain interesting. This keeps students engaged and continues to be motivated.

I feel very strongly that to be an effective professor, I need to treat students with respect. I must attempt to know each student's strengths and weaknesses, and accommodate comments and questions at any time. My job is not to show them what I know, but to teach them what they need to know and above all to facilitate their learning.

I must mention here that this teaching philosophy is in part founded during my graduate study for the M.Sc and Ph.D degrees in Illinois in the United States. There I met some great professors who had their impact and influence on my vision of teaching philosophy.

## **References:**

1. Prof. Rami Hamdullah, University president, AN-Najah National University, Nablus, West Bank, Palestine.
2. Prof. Michael V. Berry, H.H. Wills Physics Laboratory, Royal Fort, Tyndall Avenue, Bristol University, Bristol, United Kingdom.
3. Prof. Roland Lombard, IPN, Physics Department, University of Paris Sud XI, Orsay, Paris, France.
4. Prof. Walter C. Henneberger, Physics Department, Southern Illinois University, Carbondale, IL., USA.
5. Prof. Ruedi Sieller, Department of Mathematics, TU-Berlin, Berlin, Germany.

