# Curriculum Vitae

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## *Personal Information*


**First Name :** Mehrzad

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**Date of Birth :** January 1, 1972

**Place of Birth :** Masjedsolyman, Iran

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## *Education*

**2009-2013: Ph.D in Fundamental Physics, Shahid Chamran University of Ahvaz, Ahvaz, Iran.**
**1997-1999: MS in Fundamental Physics, Shahid Chamran University of Ahvaz, Ahvaz, Iran.**
**1991-1994: BS in Physics, Shahid Chamran University of Ahvaz, Ahvaz, Iran.**
**1988-1991: High School Diploma in Mathematics & Physics, 17 sharivar High School, Masjedsolyman, Iran.**

## *Research Interests*

**Linear and Nonlinear Oscillators**

**Coherent States**

**Measures of Entanglement**

**Entanglement**

**Entangled Coherent States**

**Dynamics of Entanglement**

**Quantum Computing and Quantum Information**

## *Papers*

1- M. Jafarpour, G Khalafi, A. R. Latifi and M. Ashrafpour,"Classical and quantum sextic anharmonic oscillators: Second-order solutions and the classical limit", *IL Nuovo Cimento*, Vol. 118 B, No. 5, 513-523 (2003).
2- Mojtaba Jafarpour, Ali Niroubakhsh and Mehrzad Ashrafpour, "Generalized Intelligent States for Arbitrary Spin", *Adv. Studies Theor. Phys*., Vol. 4, no. 12, 599 – 608 (2010).
3- Mojtaba Jafarpour and Mehrzad Ashrafpour, "An Entanglement Study of Superposition of Qutrit Spin-Coherent States", *Journal of Sciences*, Islamic Republic of Iran Vol. 22(2): 165-169 (2011).
4- Mojtaba Jafarpour and Mehrzad Ashrafpour, "Entanglement dynamics of a two-qutrit system under DM interaction and the relevance of the initial state", *Quantum Inf Process*, DOI 10.1007/s11128-012-0419-2 (2012).
5- Abbass Sabour, Mojtaba Jafarpour and Mehrzad Ashrafpour, "Dynamics of localizable entanglement in a qutrit chain with Dzyaloshinskii–Moriya interaction", *Quantum Inf Process*, DOI 10.1007/s11128-012-0470-z (2012).
6- Mehrzad Ashrafpour , Mojtaba Jafarpour, Abbass Sabour, "Entangled Three Qutrit Coherent States and Localizable Entanglement", *Commun. Theor. Phys*, 61, 177–180 (2014) .
7- Mehrzad Ashrafpour, Hamdollah Salehi, Mehdi Khanzadeh, "Bipartite nonorthogonal systems and their entanglement dynamics under XX Hamiltonian and DM interaction", *Iranian Journal of Applied Physics*, DOI: 10.22051/jap.2020.30526.1157 (2020).

8- Mehrzad Ashrafpour , Mojtaba Jafarpour, Morteza Ahmadi, "Analytical solutions for entanglement a superposition of spin coherent states with non-phase coherence parameters", *Journal of Sciences*, *Islamic Republic of Iran,* DOI: 10.22059/JSCIENCES.2020.298214.1007503(2020).

## *Conferences*

1- Mojtaba Jafarpour and Mehrzad Ashrafpour,"Quantum perturbation solution of sextic nonlinear oscillator and its classical limit", *Annual Iranian Physics Conference Proc*. 10-12 (2000).

2- Mehrzad Ashrafpour and Mojtaba Jafarpour,"Maximum entanglement in superposition of qutrit spin-coherent states", *Annual Iranian Physics Conference Proc*. 2341-2344 (2012).
3- Mehrzad Ashrafpour and Mojtaba Jafarpour, "Superposition of two qutritspin-coherent states and their entanglement dynamics under DM intraction", *Annual The First National Conference on Quantum Information and Quantum Computation*, Iran (2013).
4- Mehrzad Ashrafpour and Mojtaba Jafarpour, "Entanglement dynamics of two-qutrit pure states under XX Hamiltonian", *Annual Iranian PhysicsConference Proc*. 272-275 (2013).
5- Mehrzad Ashrafpour and Roza Mokhtarbaf , "Investigation of entanglement for superposition of bipartite spin coherent states with geometric measure", *First National Conference on Modern Aplied Researches of Basic Science Proc*.195-203 (April 2017).
6- Mehrzad Ashrafpour and Morteza Ahmadi, "superposition of spin coherent states with non-phase coherence parameters and their entanglement properties", *8th National Conference on PHYSICS , Proc*. 444-447 (May 2017).
7- Zahra Saghi and Mehrzad Ashrafpour, "Geometric Measure of Mixing of Quantum State for Bipartite and Tripartite Systems",*3th Iranian Conference on Mathematical Physics*, *Proc*.1-4 (January 2019).
8- Mehrzad Ashrafpour and Zahra Saghi,"Analytic Calculation of Entanglement for Tripartite States via Geometric Measure", *4th Iranian Conference on Mathematical Physics*, *Proc*.1-4 (January 2020).
9- Zahra Saghi and Mehrzad Ashrafpour, "A Quantitative Investigation of the Bipartite and Tripartite Mixed Spin Coherent Systems using the Geometric Measure of Mixing of Quantum States", *Annual Iranian Physics Conference Proc*. 1-4 (22-25 August 2020).

10- Mehrzad Ashrafpour and Zahra Saghi," Analytic Calculation of Entanglement for a Superpositions of GHZ+ and GHZ- states via Geometric Measure ", *Annual Iranian Physics Conference Proc*. 1-4 (22-25 August 2020).
11- Mehrzad Ashrafpour, Abbas Kouhzar , Abdolmohammad Ghalambor Dezfuli, Investigation of distributed entanglement in quasi-bell cat states ", *Annual Iranian Physics Conference Proc*. 1-4 (22-25 August 2020).

## *taught courses*

**The philosophical foundations of Quantum Mechanics,**
**Theoretical Foundations of Quantum Mechanics,**
**Special topics ,**
**Electromagnetic Theory,**
**Quantum Mechanics (1,2),**

**Modern Quantum Mechanics (1,2),**
**General physics (1,2,3)**
**Optics Lab.,**
**Computing and Quantum Information**