

CURRICULUM VITA

Surname: Eghbali-Arani
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EDUCATION

Ph.D programs(September.2010- awaiting defence)

Ph.D. in Physics (Theoretical physics, Condensed matter physics, Opto-mechanics), University of Isfahan, Isfahan, Iran.

Thesis: Investigation of Quantum Properties of Hybrid Systems composed of Superconducting Circuits and BEC

Supervisors: Prof M. A. Shahzamanian, and Dr H. Yavari

Ph.D course work:

Many body physics1, Many body physics2, Superconductivity and superfluids, Quantum optics, Magnetic properties of materials

M.Sc. programs (September. 2006-May. 2009)

M.Sc. in Physics (Condensed Matter Experimental) University of Isfahan, Isfahan, Iran.

Thesis: Preparation of Zn ferrite nanopowder by sol-gel method and investigation magnetic properties (passed with honors; score: 19.66/20)

Supervisors: Prof Jamshid Amighian, and Dr Morteza Mozaffari

M.Sc. course work:

Advanced quantum mechanics, Electrodynamics, Statistical physics, Advanced solid state physics, Magnetic properties of materials

GPA: 18.22/20 graduated with honors

B.Sc. programs (September. 2002-August. 2006)

B.Sc. in Physics (Solid State)

Kashan University, Kashan, Iran

GPA: 17.39/20

VSITING POSITION

Scuola Normale Superiore (SNS) of Pisa under the supervision of V. Giovannetti and R. Fazio, (March 2014-September 2014).

COMPUTER SKILLS

- Computer Languages: Python.
- Scientific Applications: Mathematica.
- Technical Drawing: Adobe Illustrator, PhotoShop.
- Office Applications: LATEX, Microsoft PowerPoint, Access, Excel, Word.
- Database: Microsoft Access.

REFEREED JOURNAL PUBLICATIONS

- 1. V. Amei, M. Eghbali Arani, M. Rafie, Synchronization of a periodic modulation of mirrors in an optomechanical system, QUANTUM INF PROCESS, 2019 10 04, SCOPUS, JCR.
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- 2. H. R. Naderi, S. Pourmasoud, V. Ameri, M. Eghbali Arani, Low Temperature Synthesis and Characterization of Flower Like Ytterbium Molybdate Nanopowders and Investigate Supercapacitor Properties, Analytical & Bioanalytical Electrochemistry, Vol. 11, pp. 1087, 2019 08 31, SCOPUS.
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- 3. M. Rahimi Nasrabadi, A. Ghaderi, H. R. Banafsheh, M. Eghbali Arani, M. Akbari, F. Ahmadi, S. Pourmasoud, A. Sobhani Nasab, Preparation of Co₂TiO₄/CoTiO₃/Polyaniline ternary nano-hybrids for enhanced destruction of agriculture poison and organic dyes under visible-light irradiation, J MATER SCI-MATER EL, Vol. 30, pp. 15854, 2019 08 09, SCOPUS, JCR.
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- 4. H. R. Naderi, A. Ghaderi, Z. Seyedi Mofrad, M. Eghbali Arani, Facile Synthesis and Characterization of CeMoO₄ Nanostructure via Co-precipitation Method and Investigate its Application Supercapacitor, Analytical & Bioanalytical Electrochemistry, Vol. 11, pp. 679, 2019 06 30, SCOPUS.
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- 5. S. M. Peymani Motlagh, N. Moeinian, M. Rostami, M. Fasihi Ramandi, A. Sobhani Nasab, M. Rahimi Nasrabadi, M. Eghbali Arani, M. Ganjali, E. Herman, T. Jesionowski, M. A. Karimi, N. Ajami, Effect of Gd³⁺, Pr³⁺ or Sm³⁺-substituted cobalt-zinc ferrite on photodegradation of methyl orange and cytotoxicity tests, J RARE EARTH, 2019 06 15, SCOPUS, JCR.
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- 6. S. Pourmasoud, M. Eghbali Arani, V. Ameri, M. Rahimi Nasrabadi, F. Ahmadi, A. Sobhani Nasab, Synthesis of some transition MWO₄ (M: Mn,

Fe, Co, Ni, Cu, Zn, Cd) nanostructures by hydrothermal method, J MATER SCI-MATER EL, 2019 04 22, JCR.

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- 7. Synthesis of novel Fe₃O₄@SiO₂@Er₂TiO₅ superparamagnetic core-shell and evaluation of their photocatalytic capacity, Journal of Materials Science: Materials in Electronics, 2020 7 1.
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- 8. Ali Sobhani Nasab et al., Eco-friendly preparation and characterization of CuMn₂O₄ nanoparticles with the green capping agent and their photocatalytic and photovoltaic applications, Iranian Journal of Catalysis, 2020 6 1.
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- 9. CdTe quantum dots prepared using herbal species and microorganisms and their anti-cancer, drug delivery and antibacterial applications; a review, Ceramics International, 2020 6 1.
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- 10. Sajad Ghaemifar et al., Preparation and characterization of MnTiO₃, FeTiO₃, and CoTiO₃ nanoparticles and investigation various applications: a review, Journal of Materials Science: Materials in Electronics, 2020 5 1.
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- 11. Preparation of Fe₃O₄/SiO₂/TiO₂/CeVO₄ Nanocomposites: Investigation of Photocatalytic Effects on Organic Pollutants, Bacterial Environments, and New Potential Therapeutic Candidate Against Cancer Cells, Frontiers in pharmacology, 2020 1 1.
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- 12. Vahid Ameri , Mohammad Eghbali Arani , Morteza Rafiee, Synchronization of a periodic modulation of mirrors in an optomechanical system, Quantum Information Processing, 2019 11 1.
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- 13. Seyed Morteza Asgarian, Saeid Pourmasoud, Zohreh Kargar, Ali Sobhani Nasab, Mohammad Eghbali Arani, Investigation of positron annihilation lifetime and magnetic properties of Co_{1-x}Cu_xFe₂O₄ nanoparticles, Materials Research Express, 2019.
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- 14. Hamid Kooshki, Ali Sobhani Nasab, Mohammad Eghbali Arani, Farhad Ahmadi, Vahid Ameri, Mehdi Rahimi Nasrabadi, Eco-friendly synthesis of PbTiO₃ nanoparticles and PbTiO₃/carbon quantum dots binary nano-hybrids for enhanced photocatalytic performance under visible light, Separation and Purification Technology, pp. 873-881, 2019.
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- 15. Hamid Naderi, Hossein Sobati, Ali Sobhani Nasab, Mehdi Rahimi Nasrabadi, Mohammad Eghbali Arani, Mohammad Reza Ganjali, Hermann Ehrlich, Synthesis and Supercapacitor Application of Cerium Tungstate Nanostructure, ChemistrySelect, 2019.
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- 16. Seyed Mahdi Peymani Motlagh, Ali Sobhani Nasab, Mojtaba Rostami, Hossein Sobati, Mohammad Eghbali Arani, Mahdi Fasihi Ramandi, Mohammad Reza Ganjali, Mehdi Rahimi Nasrabadi, Assessing the magnetic, cytotoxic and photocatalytic influence of incorporating Yb³⁺ or Pr³⁺ ions in cobalt–nickel ferrite, Journal of Materials Science: Materials in Electronics, 2019.
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- 17. Mohammad Eghbali Arani, Ali Sobhani Nasab, Mehdi Rahimi Nasrabadi, Farhad Ahmadi, Saeid Pourmasoud, Ultrasound-assisted synthesis of YbVO₄ nanostructure and YbVO₄/CuWO₄ nanocomposites for enhanced photocatalytic degradation of organic dyes under visible light, Ultrasonics Sonochemistry, 2018.
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- 18. M. Eghbali Arani, A. Sobhani Nasab, M. Rahimi Nasrabadi, S. Pourmasoud, Green Synthesis and Characterization of SmVO₄ Nanoparticles in the Presence of Carbohydrates As Capping Agents with Investigation of Visible-Light Photocatalytic Properties, Journal of Electronic Materials, 2018.
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- 19. Mohammad Eghbali Arani, Saeid Pourmasoud, Farhad Ahmadi, Mehdi Rahimi, & Nasrabadi, Vahid Ameri, Ali Sobhani Nasab, Optimization and detailed stability study on coupling of CdMoO₄ into BaWO₄ for enhanced photodegradation and removal of organic contaminant, Arabian Journal of Chemistry, 2018.
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- 20. Mehdi Rahimi Nasrabadi, Farhad Ahmadi, Mohammad Eghbali Arani, Different morphologies fabrication of NiAl₂O₄ nanostructures with the aid of new template and its photocatalyst application, Journal of Materials Science: Materials in Electronics, 2017.
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- 21. Farhad Ahmadi, Mehdi Rahimi Nasrabadi, Mohammad Eghbali Arani, The synthesis of CuWO₄ nano particles by a new morphological control method, characterization of its photocatalytic activity, Journal of Materials Science: Materials in Electronics, 2017.
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- 22. Vahid Ameri, Mohammad Eghbali Arani, Saeid Pourmasoud, New route for preparation of cerium vanadate nanoparticles with different morphology and investigation of optical and photocatalytic properties, *Journal of Materials Science: Materials in Electronics*, 2017.
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- 23. Vahid Ameri, Mohammad Eghbali Arani, The effect of rotation on the heat transfer between two nanoparticles, *The European Physical Journal D*, 2017.
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- 24. Saeid Pourmasoud, Mohammad Eghbali Arani, Farhad Ahmadi, Mehdi Rahimi Nasrabadi, Synthesis, characterization, and morphological control of PbWO₄ nanostructures through precipitation method and its photocatalyst application, *Journal of Materials Science: Materials in Electronics*, 2017.
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- 25. Mehdi Rahimi Nasrabadi, Mohammad Eghbali Arani, The effect of sugars on the morphology of MnWO₄ nanoparticles, and evaluating the product as photocatalysts, *Journal of Materials Science: Materials in Electronics*, 2017.
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- 26. F Ahmadi, M Rahimi Nasrabadi, MA Daneshmehr, M Eghbali Arani, Synthesis, characterization, and investigation of magnetic, photocatalytic and antibacterial properties of TbVO₄ nanoparticles, *Journal of Materials Science: Materials in Electronics*, 2017.
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- 27. Mohammad Eghbali Arani, Vahid Ameri, Entanglement of two hybrid optomechanical cavities composed of BEC atoms under Bell detection, *Quantum Information Processing*, 2017.
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- 28. Vahid Ameri and Mohammad Eghbali Arani, Rotational synchronization of two noncontact nanoparticles, *Journal of Optical Society of America B*, 2017.
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- 29. Mehdi Rahimi Nasrabadi, Farhad Ahmadi, Mohammad Eghbali Arani, Novel route to synthesize nanocrystalline nickel titanate in the presence of amino acids as a capping agent, *Journal of Materials Science: Materials in Electronics*, 2016.
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- 30. Mehdi Rahimi Nasrabadi, Farhad Ahmadi, Mohammad Eghbali Arani, Simple morphology-controlled fabrication of CdTiO₃ nanoparticles

with the aid of different capping agents, Journal of Materials Science: Materials in Electronics, 2016.

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- 31. Vahid Ameri, Mohammad Eghbali Arani, Morteza Soltani, Perturbative approach to dynamical Casimir effect in an interface of dielectric mediums, The European Physical Journal D, 2016.
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- 32. V. Ameri, M. Eghbali Arani, A. Mari, A. Farace, F. Kheirandish, V. Giovannetti, and R. Fazio, Mutual information as an order parameter for quantum synchronization, Physical Review A, 2015.
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- 33. M Eghbali Arani, H Yavari, MA Shahzamanian, V Giovannetti, Sh Barzanjeh, Generating quantum discord between two distant Bose–Einstein condensates with Bell-like detection, Journal of Optical Society of America B, 2015.
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- 34. M. Eghbali Arani, H. Yavari, Sh. Barzanjeh, M. A. Shahzamanian, Cooling of a nanomechanical resonator in presence of a single diatomic molecule, Annals of Physics, 2015.
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- 35. M Eghbali Arani, M Ghazvi, MA Shahzamanian, Thermal Conductivity of Superconductor Sr_2RuO_4 at Low Temperatures and Magnetic Fields, Journal of Superconductivity and Novel Magnetism, 2012.
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- 36. M. Mozaffari, M. Eghbali Arani, J. Amighian, The effect of cation distribution on magnetization of ZnFe_2O_4 nanoparticles, Journal of Magnetism and Magnetic Materials, 2010.
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- 37. Mohammad Eghbali Arani, Mohammad Javad Nasr Isfahani, Mohammad Almasi Kashi, Preparation and magnetic studies of nickel ferrite nanoparticles substituted by Sn^{4+} and Cu^{2+} , Journal of Magnetism and Magnetic Materials, 2010.
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- 38. Mohammad Javad Nasr Isfahani, Maxym Myndyk, Mohammad Eghbali Arani, Jan Šubrť, Vladimír Šepelák, Structural and Magnetic Properties of $\text{NiFe}_{2-2x}\text{Sn}_x\text{Cu}_x\text{O}_4$, Journal of Magnetism and Magnetic Materials, 2010.

CONFERENCES ATTENDED

- Annual physics conference of Iran, September 2008, Department of Physics, Kashan University.
- 3th Conference of Physics, December 2008, Payam-e-Nour University, Ahvaz, Iran.
- 9th Conference of condensed matter physics, February 2009, Shahid chamran university, Ahvaz, Iran.
- The 5th Conference of Nanoscience and Nanotechnology, June 2009, Tehran University of Medical Science, Tehran, Iran.
- 3th Conference of Superconductivity, Kashan University, Kashan, Iran.
- International Conference of Physics Students 2014, Heidelberg University, Germany

TEACHING Experience

- General Physics Laboratory, University of Isfahan 2013, Iran.
- General Physics, Quantum mechanics, Statistical physics, Payam-e-Nour Aran&Bidgol University, Aran&Bidgol 2010-2013, Iran.
- Basic Physic, Modern Physics, Superconductivity, Crystallography, Quantum Mechanics, University of Kashan , 2016-2018, Iran.