

Curriculum Vitae

Dr. Ana Khajehnezhad

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Contact Information

Address: Room 214, Second floor, Building Number 2, Plasma Research Center, Science and Research Branch of Islamic Azad University, Tehran, Iran.

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Education

-Ph.D degree

Department of Physics, Plasma Research Center, Science and Research Branch of Tehran, Islamic Azad University,

Total Average Grade/Max. Grade (GPA): 18.18/20

Ph.D Thesis Title: Formation of oriented magnetic layers of FePt Nanoparticles

Supervisor: Dr. Seyed Ali Sebt

Thesis Grade: 19.80/20

-Master degree

Physics, Department of Physics, Sharif University of Technology (Sep.2005 -Feb.2008),

Total Average Grade/Max. Grade (GPA): 18.36/20

M.Sc.Thesis Title: Synthesis of magnetic superconductors $\text{Ru}(\text{Gd}_{1.5-x}\text{Pr}_x)\text{Ce}_{0.5}\text{Sr}_2\text{Cu}_2\text{O}_{10-\delta}$ and comparative investigate of its physical properties with $\text{Ru}(\text{Ce}_{0.5-x}\text{Pr}_x)\text{Gd}_{1.5}\text{Sr}_2\text{Cu}_2\text{O}_{10-\delta}$

Supervisor: Prof. Mohammad Akhavan

Thesis Grade: 20/20

-Bachelor degree

Physics, Department of Physics, Islamic Azad University Central Tehran Branch (Sep.2000 - June.2004),

The Field of Study: Solid State Physics

Total Average Grade/Max. Grade (GPA): 17.74/20

Research Interest:

-Nano Science Physics

-Condensed matter physics (High Temperature Superconductivity and Strongly Correlated Systems)

Research Experiences and Skills:

- (1) Pelasma Research Center, Islamic Azad University, Science and Research Branch of Tehran:

Synthesizing of FePt nanoparticles by Polyol method and purification of them, Annealing of nanoparticles for transition to hard magnetic phase, Deposition of nanoparticles on substrates by wet chemical method, Deposition of Aluminum on the backside of Si wafer by PVD (Physical Vapor Deposition) method, Fabrication of porous silicon as a substrate of nanoparticles, Applying magnetic field during annealing of nanoparticles, and characterization measurements such as EDX (Energy-Dispersive X-ray Spectroscopy), AFM (Atomic Force Microscopy), TEM (Transmission Electron Microscopy), XPS (X-ray Photoelectron Spectroscopy), FE-SEM (Field Emission Scanning Electron Microscopy), XRD (X-ray Diffraction), VSM (Vibrating Sample Magnetometer)

- (2) Physics Department, Sharif University of Technology:

Synthesizing of High Temperature Superconductors by standard solid state reaction method and characterization measurements such as transport properties (Four Point Probe resistivity measurements), ac susceptibility, VSM (Vibrating Sample Magnetometer), XRD (X-ray diffraction), Rietveld refinement (<http://mrl.sharif.ir/index.html>)

Publications

1. "Order Parameters Of $L1_0$ FePt Nanocrystals". A. Khajehnezhad, S. A. Sebt, *Trans Indian Inst Met* (2014) 67(6):903–907
2. " Oriented FePt Nanocrystals Deposited ON Porous Silicon". A. Khajehnezhad, S. A. Sebt, R. S. Dariani, M. Farle, M. Akhavan, *European Scientific Journal* 9, 333-341 (2013)
3. " $L1_0$ FePt Nanoparticles Processing with Applied Magnetic Field" S. A. Sebt, A. Khajehnezhad, R. S. Dariani, M. Akhavan, *J Inorg Organomet Polym* 23, 881–887 (2013)
4. "The Effect of Chemical Pressure in Rutheno-cuprates" N. Nikseresht, A. Khajehnezhad, H. Hadipour, M. Akhavan, *Physica C*, 470 (2010) 285–290
5. "Electrical and Magnetic Properties of ferromagnetic-superconductor $Ru(Gd_{1/5-x}Pr_x)Ce_{0.5}Sr_2Cu_2O_{10-\delta}$ compound" A. Khajehnezhad, N. Nikseresht, H. Hadipour, M. Akhavan, *Iranian journal of physics* 9, 8 (2009)
6. "Comparing the Physical Properties of Pr/Gd and Pr/Ce Substitution in $Ru(Gd_{1.5}Ce_{0.5})Sr_2Cu_2O_{10-\delta}$ ". A. Khajehnezhad, N. Nikseresht, H. Hadipour and M. Akhavan, *European Physical Journal B*, 63, 461 (2008).
7. "Ruthenocuprats: Playground for superconductivity and magnetism". A. Khajehnezhad, N. Nikseresht, H. Hadipour, M. Akhavan, *Iranian journal of physics* 8, 6 (2008).

Proceedings:

1. A. Khajehnezhad, S.A. Sebt, R.S. Dariani, and M. Akhavan, *ISOLATED AND EASY AXIS ORIENTED $L1_0$ FePt NANOPARTICLES*, 9th Int'l Conf. on Magnetic and Superconducting Materials 2013 (MSM13), 2-5 september 2013, Hammamet, Tunisia.
2. A. Khajehnezhad, S.A. Sebt, R.S. Dariani, and M. Akhavan, *The Effect of Magnetic Field on FePt Nanoparticles During Annealing Process*, 19th International conference on Magnetism 2012 (ICM12), 8-13 July, Busan, Korea.
3. A. Khajehnezhad, S.A. Sebt, R.S. Dariani, and M. Akhavan, *FePt, $L1_0$ magnetic nanoparticles with orientated and uniform surface distributions*, 7th Int'l Conf. on Magnetic and Superconducting Materials 2011 (MSM11), 10-13 October . 2011, Port Dickson, Negeri Sembilan, Malaysia.
4. N. Nikseresht, A. Khajehnezhad, H. Hadipour, H.M. Ronnow, M. Akhavan, *Effect of chemical pressure on superconductivity in Pr-doped Ru-1222 (Gd) compounds*, TICS, WLTP, WMSM08 Int'l Conference/Workshop, 7-10 July, 2008, National Chung Hsing University, Taiwan.
5. A. Khajehnezhad, N. Nikseresht, H. Hadipour, M. Akhavan, *The electrical and magnetic properties of ferromagnetic-superconducting compound $Ru(Gd_{1.5-x}Pr_x)Ce_{0.5}Sr_2Cu_2O_{10-\delta}$* , the First National Conference on Advances in Superconductivity, June 30-31 (2008), Tehran, Iran.
6. A. Khajehnezhad, N. Nikseresht, H. Hadipour, M. Akhavan, *Electrical and magnetic properties of $RuGd_{1.5-x}Ce_{0.5-y}Pr_{x+y}Sr_2Cu_2O_{10-\delta}$* , 5th Int'l Conf. on Magnetic and Superconducting Materials 2007(MSM07), 25-30 Sept. 2007, Khiva, Uzbekistan.
7. N. Nikseresht, A. Khajehnezhad, H. Hadipour, M. Akhavan, *Effect of Pr substitution on competition between magnetism and superconductivity in $RuGd_{1.5}Ce_{0.5-x}Pr_xSr_2Cu_2O_{10-\delta}$ (Ru-1222) rutheno-cuprate compounds*, 5th Int'l Conf. on Magnetic and Superconducting Materials (MSM07), 25-30 Sept. 2007, Khiva, Uzbekistan.
8. N. Nikseresht, A. Khajehnezhad, H. Hadipour, M. Akhavan, *Two-transition superconducting in $RuGd_{1.5}Ce_{0.5-x}Pr_xSr_2Cu_2O_{10-\delta}$ (Ru-1222) ferromagnetic superconductor compounds*, 12th Annual Iranian conference of Physics, 27-30 Aug. (2007), Yasuj, Iran.

Lectures:

1. *Pressure measurement and how to produce vaccume*, Department of Physics, Sharif University of Technology (2006).
2. *Fabrication of superconducting tape and wire*, Department of Physics, Sharif University of Technology (2007).
3. *Superfluidity and Fluid Helium*, Department of Physics, Sharif University of Technology (2007).

4. *Ruthenocuprates High T_c Superconductors Fabrication, Department of Physics, Sharif University of Technology (2008).*
5. *superconducting and magnetic properties of Ru-1212 and Ru-1222 compounds, Department of Physics, Sharif University of Technology (2008).*

Conferences, Schools and Workshops Participated:

1. *The 9th Int'l Conf. on Magnetic and Superconducting Materials 2013 (MSM13), 2-5 september 2013, Hammamet, Tunisia.*
2. *The 19th International conference on Magnetism 2012 (ICM12), 8-13 July, Busan, Korea.*
3. *The 7th Int'l Conf. on Magnetic and Superconducting Materials 2011 (MSM11), 10-13 October . 2011, Port Dickson, Negeri Sembilan, Malaysia.*
4. *TICS, WLTP, WMSM08 Int'l Conference/Workshop, 7-10 July, 2008, National Chung Hsing University, Taiwan.*
5. *The First National Conference on Advances in Superconductivity, June 30-31 (2008), Sarif University of Technology, Tehran, Iran.*
6. *The 5th Int'l Conf. on Magnetic and Superconducting Materials 2007, Sep. 25-30 (2007), Khiva, Uzbekistan.*
7. *12th Annual Iranian conference of Physics, Aug. 27-30 (2007), Yasuj University, Yasuj, Iran.*

Graduate Courses

- { Condensed Matter 1 (Grade : 18/20) – Dr. S. A. Sebt – Fall 2008.
- { Condensed Matter 2 (Grade : 17/20) – Dr. S. A. Sebt – Spring 2009.
- { Special Topics in Mathematical Physics (Grade : 17.5/20) – Dr. M. Elahi – Spring 2009.
- { Liquid Crystals Physics (Grade : 17/20) – Prof. H. Savaloni – Fall 2009.
- { Advanced Topics in Magnetism (Grade : 19/20) – Dr. S. A. Sebt – Fall 2009.
- { Seminar on Nanomagnetism (Grade : 19/20) - Dr. S. A. Sebt – Fall 2009.
- { Seminar on Nanomaterials (Grade : 19/20) - Dr. S. A. Sebt – Fall 2009.
- { Seminar on Magnetic Recording Media (Grade : 20/20) - Dr. S. A. Sebt – Fall 2009.

Computer Skills

- ICDL 1
- ICDL 2
- Photo shop

Teaching

- { Optic Laboratory, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2009 up to now.
- { Physics 1 Laboratory, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2009 up to now..
- { Superconductivity, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Fall 2012, Fall 2013, Spring 2014.
- { Magnetism, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2012 , Spring 2013, Spring 2014.

{ Analytical Mechanics 1, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2014, Fall 2014.

{ Analytical Mechanics 2, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2015, up to now.

{ Solid State Laboratory, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2014, up to now.

{ Solid State, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University*, Spring 2014, up to now.

Occupation:

1. Assistant Professor, Dept. of Physics, Science and Research Branch, Islamic Azad University of Iran, Tehran. October 2013-Present.

References:

1- Prof. Mohammad Akhavan, *Physics Department, Sharif University of Technology, Tehran 11155-9161, Iran. E-mail: akhavan@sharif.edu*

2- Prof. Seyed Ali Sebt, *Department of Physics, Pelasma Research Center, Science and Research Branch of Tehran, Islamic Azad University, Tehran 11155-9161, Iran. E-mail: drsebt@yahoo.com*

3- Prof. Reza Sabet Dariani, *Physics Department, Alzahra University, Tehran 19938, Iran. E-mail: dariani@alzahra.ac.ir, sabetdariani@gmail.com , dariani@physics.queensu.ca*