

# Azadeh Hekmat

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## Experience

### **2014–Current**

Assistant Professor • Islamic Azad University Science and Research Branch • Tehran, Iran

### **2013–2014**

Postdoctoral in Biophysics • University of Tehran • Tehran, Iran

## Education

### **Ph.D. in Biophysics • Institute of Biochemistry and Biophysics • University of Tehran • Tehran • Iran (2008-2013)**

- **Dissertation:** The synergistic effects of silver and titanium dioxide nanoparticles and doxorubicin on DNA structure and induction of apoptosis in breast cancer cell lines: T47D and MCF7, (Score: Excellent)
- **Supervisor:** Professor Ali Akbar Saboury
- GPA for courses passed (14 units): 4.0/4.0 (First rank)

### **M.Sc. in Biophysics • Institute of Biochemistry and Biophysics • University of Tehran • Tehran • Iran (2005-2008)**

- **Thesis:** The studies of the effects of temperature and pH on the function and structure of Choline oxidase, (Score: Excellent)
- **Supervisor:** Professor Ali Akbar Saboury
- GPA for courses passed (32 units): 3.8/4.0 (First rank)

### **B.Sc. in Biology • Alzahra University • Tehran, Iran (2001-2005)**

- GPA for courses passed (137 units): 3.4/4.0

## Honors & Awards

- Ranked 1<sup>st</sup> among Ph.D. graduates in Biophysics and Biochemistry,



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- Institute of Biochemistry and Biophysics, University of Tehran (2012)
- The best teacher award, Islamic Azad University (2010)
- Winner of Best Graduate Student Award of University of Tehran (2009)
- Ranked 1<sup>st</sup> among M.Sc. graduates in Biophysics and Biochemistry, Institute of Biochemistry and Biophysics, University of Tehran (2008)

## Memberships

- Member of Biophysical Society
- Member of Iran Society of Biophysical Chemistry (ISOBC)
- Board of Directors of Iranian Association for Plant Cell and Tissue Culture

## Linguistic Skills

- Fluent in English
- Fluent in Persian

## Research Interests

Apoptosis, Bioelectromagnetics • Biomaterials • Drug delivery: drugs and Biomacromolecules interactions • Chemotherapy • Microgravity biological effects • Multidrug Resistance (MDR) • Nanotechnology, Molecular dynamic simulations • Stem cells bioengineering

## Laboratory Skills

- **Spectroscopic Techniques:** UV-Visible spectroscopy, Fluorescence spectroscopy, FT-R spectroscopy, Circular Dichroism (CD) spectroscopy, Dynamic Light Scattering (DLS)
- **Differential Scanning Calorimetry (DSC)**
- **Isothermal Titration Calorimetry (ITC)**
- **Surface Tension Measurement**
- **Cell Culture Techniques:** Flow cytometry, Fluorescence Microscopy, Electron Microscopy, Optical Microscopy, MTT Assay
- **Purification Techniques:** DNA purification from Calf thymus and Cell, Protein Electrophoresis, DNA Electrophoresis
- **Molecular Biology Methods:** PCR, ELISA

## Computer Skills

- **Data Analysis: MS Excel, SPSS, Sigma plot**

## Executive Work

- Executive secretary of the 1<sup>st</sup> conference of Nano from synthesis to industry (2016)
- Head of the Committee on Education and Research of Iranian Association for Plant Cell and Tissue Culture (2017-Current)

## Book

- 1- Azadeh Hekmat, Saboura Ashkevarian, Jalil Badraghy, Essential and Fundamentals of Biophysics, (in Persian) The Academic Center for Education, Culture and Research (ACECR) Shahid Beheshti University Press, Iran, 2012, ISBN: 978-964-479-029-4.
- 2- Azadeh Hekmat and Ali Akbar Saboury, Essential and Fundamental of Infra-Red spectroscopy and its Biological applications. (2020)

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## SCIENTIFIC RESEARCH ARTICLES

### FULL PAPER

1. A. Hekmat, A.A. Saboury, A. Divsalar, and M. Khanmohammadi. Conformational and structural changes of choline oxidase from *Alcaligenes* species by changing pH values. *Bulletin of the Korean Chemical Society* 29, 1510-1518 (2008)
2. A. Hekmat, A.A. Saboury, A.A. Moosavi-Movahedi, H. Ghourchian, and F. Ahmad. Effects of pH on the activity and structure of choline oxidase from *Alcaligenes* species. *Acta Biochimica Polonica* 55, 549-557 (2008)
3. G. Rezaei-Behbehani, A. Divsalar, A.A. Saboury, and A. Hekmat. A thermodynamic study on the binding of PEG-stearic acid copolymer with lysozyme. *Journal of Solution Chemistry* 38, 219-229 (2009)
4. A. Hekmat. The University Senate. *Rahyaf Journal* 19 (44), 18-20 (2009)
5. A. Hekmat and A.A. Saboury. The effects of size and crystal phases of TiO<sub>2</sub> nanoparticles on the cytotoxicity of cells: The importance of standardization. *Nanotechnology Newsletter* 155, 45-47 (2011)
6. H. Derakhshankhah, A.A. Saboury, R. Bazl, H.A. Tajmir-Riahi, M. Falahati, D. Ajloo, H. Mansoori-Torshizi, A. Divsalar, A. Hekmat, and A.A. Moosavi-Movahedi. Synthesis, cytotoxicity, and spectroscopy studies of a new copper (II) complex: calf thymus DNA and T47D as targets. *Journal of the Iranian Chemical Society* 9, 737-746 (2012)

7. A. Hekmat, A.A. Saboury, and A. Divsalar. The effects of silver nanoparticles and doxorubicin combination on DNA structure and its antiproliferative effect against T47D and MCF7 cell lines. *Journal of Biomedical Nanotechnology* 8, 968-982 (2012)
8. A. Hekmat, A.A. Saboury, and A.A. Moosavi-Movahedi. The toxic effects of mobile phone radiofrequency (940 MHz) on the structure of calf thymus DNA. *Ecotoxicology and Environmental Safety*, 88, 35–41 (2013)
9. A. Hekmat, A.A. Saboury, A. Divsalar, and A. Seyedarabi. Structural Effects of TiO<sub>2</sub> Nanoparticles and Doxorubicin on DNA and their Antiproliferative Roles in T47D and MCF7 cells. *Anti-Cancer Agents in Medicinal Chemistry*, 13, 932-951 (2013)
10. P. Boronous, S. Sadeghi, A. Hekmat, M. Arjmand, F. Vahabi, M. Mohammadi. Metabolomic Study the Effect of Intravenous Laser Irradiation Using Red Light in Patients with Type 2 Diabetes. *Journal of Lasers in Medicine*, 13, 42-49 (2016)
11. Hekmat, Z. Hajebrahim, and A. Motamedzade. Structural Changes of Human Serum Albumin (HSA) in Simulated Microgravity. *Protein & Peptide Letters*, 24, 1030-1039 (2017)
12. K. Babaei Sheli, M. Ghorbani, A. Hekmat, B. Soltanian, A. Mohammadian, R. Jalalirad, Structural characterization of recombinant streptokinase following recovery from inclusion bodies using different chemical solubilization treatments. *Biotechnology Reports*, 19, e00259 (2018)
13. Y. Mosavi, A. Hekmat, and M. Alijanianzadeh. The effects of Oxalate and Ethylenediamine on Carbonic Anhydrase activity. *Applied Biology* 8 (31), 1-11 (2018)
14. Z. Pashah, A. Hekmat, S. Hesami. Structural effects of Diamond nanoparticles and Paclitaxel combination on calf thymus DNA. *Nucleosides, Nucleotides and Nucleic Acids*, 38(4), 249-278 (2019)
15. A. Hekmat, M. Rabizadeh, M. Safavi, Z. Hajebrahimi. The comparison of the apoptosis effects of Titanium dioxide nanoparticles into MDA-MB-231 cell line in microgravity and gravity conditions. *Nanomedicine Journal*, 6(2), 120-127 (2019)
16. A. Valizadeh, A. Hekmat, Z. Hajebrahimi, F Ahmad. Modulation of DNA Structure After Treatment with Titanium Dioxide Nanoparticles in Different Gravity Regimes: Nanoscience in Microgravity. *Advanced Science, Engineering and Medicine*, 11(9), 796–806 (2019)
17. A. Hekmat, The Iranian Biological Scientific Associations at a Glance. *Science Cultivation*, 9(1), 38-47 (2019)
18. N. Mehrdadi, M.R. Deyhim, A. Hekmat. The Effect of N-acetyl cysteine (NAC) on red blood cell oxidative damage and red blood cell metabolism during storage in blood bank condition. *Medical Journal of Tabriz University of Medical Science and Health Services* accepted (2020)
19. M.S. Heidari Tekyeh, M. Shahani, H.S. Tehrani, A. Hekmat. The Effect of Radio Frequency (RF) on Proteomics Pattern of Brain Tissue in male Wister Rats. *Trends in Peptide and Protein Sciences*, 4, 25396-25396 (2019)
20. H. Akramia, B.F. Mirjalili, O. Firuzi, A. Hekmat, A.A. Saboury, R. Miri, O. Sabzevari, M. Pirali-Hamedani, F. Jeivad, S. Moghimi, S. Emami, A. Foroumadi, Mehdi Khoobi, Cytotoxic activity and DNA binding property of new aminopyrimidine derivatives. *Letters in Drug Design & Discovery*, 16 (2019)

21. A. Hekmat and A.A. Saboury. Structural effects of the synthetic cobalt–manganese-zinc ferrite nanoparticles ( $\text{Co}_{0.3}\text{Mn}_{0.2}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$  NPs) on DNA and its antiproliferative effect on T47D cells. *BioNanoScience*, 9(4), 821-832 (2019)
22. A. Hekmat, B. Hajati, Z. Hajebrahimi. The comparison of the binding parameters of silver nanoparticles to DNA in gravity and microgravity conditions. *Journal of Space Science and Technology*, 13(1), 61-70 (2020)
23. S Alijani, A Hekmat, S Khavarynejad. The effects of Saponin derived from *Tribulus Terrestris* on the activity and structure of  $\alpha$ -Glucosidase. *Applied Biology*, 9(36), 1-18 (2020)
24. A Hekmat and Z Roshani. The Effects of Silver Nanoparticles Coatings in Effective Drug Delivery: Human Serum Albumin Interaction. *Journal of Fasa University of Medical Sciences* 10 (2), 1-14 (2020)
25. A Hekmat, F Salavati, S Hesami Tackallou. The effects of paclitaxel in the combination of diamond nanoparticles on the structure of Human Serum Albumin (HSA) and their antiproliferative role on MDA-MB-231 cells. *The Protein Journal*, 1-16 (2020)
26. A Hekmat, M Afrough, S Hesami Tackallou, F Ahmad. Synergistic effects of Titanium dioxide nanoparticles and Paclitaxel combination on the DNA structure and their antiproliferative role on MDA-MB-231 cells. *Journal of Nanoanalysis*, 7(2) 152-165 (2020)
27. A Hekmat, Z Fahimi, SA Haeri Rohani. The effects of noise pollution on blood serum protein of Wistar male rats. *Nova Biologica Reperta*, 7(1) 19-29 (2020)
28. A Hekmat, K Larijani, R Bromand Gohar. The investigation into the interaction of Saponins extracted from *Tribulus Terrestris* with human serum albumin. *Journal of Herbal Drugs*, accepted (2020)
29. A Dezhakam, P Hassani Abharian, A Hekmat. Evaluating of BDNF Expression in Blood Cells of Opium Recovering Patients with a New Treatment Method: A Molecular Marker. *Research in Karyotic Cell & Tissue*, 1 (1), 16-25 (2020)
30. R Golafshan, S Khavarynejad, A Hekmat. Structural alterations induce by Lead(II) nitrate in Bovine Liver Catalase invitro study. *Journal of Environmental Sciences Studies (JESS)*, 5 (3), 2830-2837 (2020)
31. A Hekmat, K Mohsenpour, SM Atyabi, H Bakhshandeh. The Effects of Titanium dioxide Nanoparticles Coatings in Effective Drug Design: DNA Interaction. *New Cellular and Molecular Biotechnology Journal* 10 (39) (2020)
32. A Hekmat, Mojtaba Sadeghi Manesh, Zahra Hajebrahimi, Shadie Hatamie. Microgravity-induced alterations in the H3.3B (H3F3B) gene expression and the Histone H3 structure. *Advanced Science, Engineering and Medicine* 12 (6), 1084–1094 (2020)
33. A Hekmat, Shadie Hatamie, Elham Bakhshi. Probing the effects of synthesized Silver nanowire/reduced Graphene Oxide composites on the structure and esterase-like activity of Human Serum Albumin and its impacts on humans. *Nanomedicine Journal* (online published 2020)
34. A Hekmat. The Role of Aptamers in Diagnosis of Human Coronaviruses. *Science Cultivation* 11 (1), 69-75 (2020)
35. A Hekmat. Aptamers as a new approach in detection, diagnosis, and therapy of deadly Viruses. *Research in Karyotic Cell & Tissue* 2 (1), 6-14 (2020)

36. M. Hamidinasa, A. Ameri, A. Hekmat, A. Mobinikhaledi, M. Khoobi. Mono- and bis-pyrazolophthalazines: Design, synthesis, cytotoxic activity, DNA/HSA binding and molecular docking studies. *Bioorganic & Medicinal Chemistry* 30, 115944 (2021)
37. M. Adamian, A. Hekmat, Z. Hajebrahimi. The impacts of simulated microgravity on the cell viability and Claudin-1 and Claudin-3 expression of MCF-7 breast cancer cells. *Journal of Sciences* (2021)
38. K. Mohsenpour, A. Hekmat, S. M. Atyabi, H. Bakhshandeh. A comparative study of three types of titanium dioxide nanoparticles effects on including cell growth inhibition in T47-D breast cancer cells and DNA Interaction. *Nanoscale* 8, 132-148 (2021)
39. A. Hekmat, A. Gheisari, A. Divsalar. Structural properties of Human Chorionic Gonadotropin (hCG) affected by Ultrasonic Irradiation: an in vitro study. *Physical Chemistry Research* 9, 467-482 (2021)
40. S. Beigoli, A. Hekmat, F. Farzanegan, M. Darroudi, Green synthesis of amorphous calcium phosphate nanopowders using Aloe Vera plant extract and assessment of their cytotoxicity and antimicrobial activities. *Journal of Sol-Gel Science and Technology* 1-9 (2021)
41. S. Marouzi, M. Darroudi, A. Hekmat, K. Sadri, R. Kazemi Oskuee. One-pot hydrothermal synthesis of carbon quantum dots from *Salvia hispanica* L. seeds and investigation of their biodistribution, and cytotoxicity effects. *Journal of Environmental Chemical Engineering* 105461 (2021)

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## ABSTRACTS in ISI JOURNALS

1. A. Hekmat, A.A. Saboury, and H. Ghourchian. The effect of pH on the structure and function of choline oxidase. *Archives of Iranian Medicine* 10 (Suppl 1), S82 (2007)
2. A. Hekmat, A.A. Saboury, A. Divsalar, and H. Ghourchian. Effects of pH on the structure of choline oxidase from *Alcaligenes* species. *FEBS Journal* 275 (Suppl 1), 166 (2008)
3. A. Hekmat, A.A. Saboury, and H. Ghourchian. Biotechnological application of choline oxidase, a glycine betaine synthesis enzyme, to inhibit human pathogens at the hyperosmotic infection site. *Journal of Biotechnology* 136, S543 (2008)
4. A. Hekmat, A.A. Saboury, and A. Divsalar. pH-induced conformational and structural alterations on choline oxidase. *Biophysical Journal* 96 (3), 582a (2009)
5. A. Hekmat, A. Divsalar, G. Rezaie-Behbehani, and A. A. Saboury. Investigation of the interaction between silver nanoparticles and doxorubicin. *Journal of the Iranian Chemical Society* 6 (Suppl), S239 (2009)
6. A. Hekmat and A.A. Saboury. The biophysical chemistry interaction of silver nanoparticles and doxorubicin. *Journal of The Iranian Chemical Society* 7 (Suppl), S23 (2010)
7. A. Hekmat and A.A. Saboury. The effects of TiO<sub>2</sub> nanoparticles and doxorubicin complexes on the structure of ct DNA. *Journal of The Iranian Chemical Society* 8 (Suppl. 2), A43 (2011)
8. A. Hekmat and A.A. Saboury. The effects of TiO<sub>2</sub> nanoparticles and doxorubicin complexes on the structure of DNA and inducing of apoptosis in MCF7 cell line. *Clinical Biochemistry* 44 (Suppl), S77–S78 (2011)

9. A. Hekmat, A.A. Saboury, A.A. Moosavi-Movahedi, and R. Faraji-Dana. The effects of Radiofrequency Electromagnetic Fields (RF-EMFs) on the structure of DNA. *Journal of The Iranian Chemical Society* 9 (Suppl. 1), A51 (2012)

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## ABSTRACTS IN INTERNATIONAL and NATIONAL CONFERENCES

1. A. Hekmat. The Effects of TiO<sub>2</sub> Nanoparticles and Doxorubicin Complexes on the Structure of DNA and Inducing of Apoptosis in T47D Cell Line. *The First United Arab Emirates Conference on Pure and Applied Chemistry (ECPAC11)*, (2011)
2. A. Hekmat, A.A. Saboury, and H. Ghourchian. The effects of hydrogen ions on the activity and structure of choline oxidase. *The First Regional Symposium on Bioelectrochemistry*, (2008)
3. A. Hekmat and A.A. Saboury. The study of the interaction between silver nanoparticles, DNA and Doxorubicin. *3<sup>rd</sup> International Conference on Nanostructures (NS2010)*, (2010)
4. A. Hekmat and A.A. Saboury. The effects of silver nanoparticles and doxorubicin complexes on the structure of DNA and inducing of apoptosis in T47D cell line. *Proceeding of The 2<sup>nd</sup> International Conference on Drug Discovery & Therapy (ICDD2010)*, (2010)
5. A. Hekmat, A.A. Saboury, and E. Sadrodiny. The Effects of TiO<sub>2</sub> Nanoparticles on Inhibition and Stimulation of MCF7 Cells and Human Endometrial Adult Stem Cells. *The 4<sup>th</sup> International Conference on Nanoscience & Nanotechnology (ICNN2012)*, (2012)
6. A. Hekmat, A.A. Saboury, and H. Ghourchian. Biotechnological application of choline oxidase, a glycine betaine synthesis enzyme, to inhibit human pathogens at hyperosmotic infection site. *13<sup>th</sup> International Biotechnology Symposium, Dalian, China*, (2008)
7. A. Hekmat, A. Divsalar, G. Rezaie-Behbehani and A. A. Saboury. Investigation of the interaction between silver nanoparticles and doxorubicin. *3<sup>rd</sup> International Congress of Biochemistry and Molecular Biology & 10<sup>th</sup> Iranian Congress of Biochemistry*, (2009)
8. A. Hekmat and A.A. Saboury. The effects of TiO<sub>2</sub> nanoparticles and doxorubicin complexes on the structure of DNA and inducing of apoptosis in MCF7 cell line. *12<sup>th</sup> Iranian Congress of Biochemistry & 4<sup>th</sup> International Congress of Biochemistry & Molecular Biology*, (2011)
9. A. Hekmat, A.A. Saboury, A.A. Moosavi-Movahedi, and R. Faraji-Dana. The effects of Radiofrequency Electromagnetic Fields (RF-EMFs) on the structure of DNA. *The 1<sup>st</sup> International & 11<sup>th</sup> Iran Biophysical Chemistry Conference*, (2012)
10. A. Hekmat and A.A. Saboury. The interaction between Cobalt–Zinc Ferrite nanoparticles and DNA and inducing of apoptosis in T47D cell line. *13<sup>th</sup> conference on biophysical chemistry* (2015)
11. Z. Pashah and A. Hekmat\*. The interaction of DNA and diamond NPs. *14<sup>th</sup> national congress on biochemistry* (2016)
12. M. Afrogh and A. Hekmat\*. The interaction of DNA and paclitaxel. *14<sup>th</sup> national congress on biochemistry* (2016)
13. F. Salavati and A. Hekmat\*. The interaction of human serum albumin and diamond NPs. *14<sup>th</sup> national congress on biochemistry* (2016)

14. KH. Babaie, R. Jalali Rad, M. Ghorbani, A. Hekmat, and A. Mohamadian. The effect of downstream situation on recombinant *streptomycin kinase*. *14<sup>th</sup> national congress on biochemistry* (2016).
15. A. Motamedzade, A. Hekmat\* and Z. Hajebrahimi. The effects of microgravity on human serum albumin (HSA) structure. *The 14<sup>th</sup> conference on Biophysical chemistry* (2016)
16. A. Valizadeh, A. Hekmat\* and Z. Hajebrahimi. The effects of microgravity on TiO<sub>2</sub> NPs and DNA binding. *The 14<sup>th</sup> conference on Biophysical chemistry* (2016)
17. B. Hajat, A. Hekmat\*, F. Semsarha, and Z. Hajebrahimi. The effects of microgravity on silver nanoparticles and DNA binding. *The 14<sup>th</sup> conference on Biophysical chemistry* (2016)
18. A. Hekmat. The interaction between diamond nano particles and DNA and inducing of apoptosis in T47D cell line. *7<sup>th</sup> International Conference on Nanotechnology (ICN-2017), Tbilisi, Georgia* (2017)
19. S. Salmazadeh Zehkesh, N. Mohamadpour Donighi, and A. Hekmat. Preparation and Characterization of Agkistrodon halys snake venom containing sodium. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
20. A. Valizadeh, A. Hekmat\* and Z. Hajebrahimi. The effects of microgravity on TiO<sub>2</sub> NPs and ct-DNA binding. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
21. Z. Pashah, A. Hekmat\* and S. Hesami Takalou. The interaction of DNA and diamond NPs. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
22. B. Hajat, A. Hekmat\*, F. Semsarha, and Z. Hajebrahimi. The microgravity effects on Ag NPs-DNA interaction. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
23. M. Heidary and A. Hekmat\*. The application of Au NPs in protein biotechnology. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
24. M. Afrogh, A. Hekmat\* and S. Hesami Takalou. The DNA-Taxol interaction. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
25. F. Salavati, A. Hekmat\* and S. Hesami Takalou. The HSA-NDs interaction. *The 1<sup>st</sup> conference of nano from synthesis to industry* (2017)
26. N. Mehrdadi, M. Deyhim, and A. Hekmat. The Effect of N-acethyl cysteine (NAC) on red blood cell oxidative damage and red blood cell metabolism during storage in blood bank condition. *The 11<sup>th</sup> International Congress and 16<sup>th</sup> National Congress on Quality Improvement in Clinical Laboratories* (2018)
27. A. Manafi, R. H. Sajedi, T. Tohidi Moghadam, and A. Hekmat. Development of a Colloidal Gold-Based Immunoassay for the determination of Human Serum Albumin based on Spectrofluorimetry. *The 3<sup>rd</sup> Conference on Protein and Peptide Science* (2018)
28. A. Hekmat. Molten Globule Formation in the Microgravity. *The 3<sup>rd</sup> Conference on Protein and Peptide Science* (2018)
29. A. Hekmat. Molten Globule in the Microgravity: Role of Gravity on Protein Folding Process. *15<sup>th</sup> CBC conference on Biophysical Chemistry* (2018)
30. R. Boroumand Gohar, A. Hekmat\*, M. Monsef Shokri, and K. Larijani. Extraction of saponins from *Tribulus Terrestris* and evaluation of its effects on Human Serum Albumin (HSA) structure by UV-Visible and FT-IR spectroscopies. *20<sup>th</sup> National & 8<sup>th</sup> International Congress of Biology* (2018)



31. A. Gheisari, A. Hekmat\* and A. Divsalar. The structural changes of hormone Human Chorionic Gonadotropin (hCG) in Ultrasound exposure. *20th National & 8th International Congress of Biology* (2018)
32. Z. Roshani, A. Hekmat\* and M. Yousefi. The effect different coating surface on Silver nanoparticles interaction with Human Serum Album (HSA). *20th National & 8th International Congress of Biology* (2018)
33. S. Montazery, A. Hekmat\*, A. Divsalar, and A. Iranbakhsh. The magnetic  $\text{Co}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$  nanostructure interaction with DNA molecule study by multiple spectroscopies. *20th National & 8th International Congress of Biology* (2018)
34. S. Alijani, A. Hekmat\* and S. Khavarynejad. The effect of Saponin derived from *Tribulus Terrestris* on the activity of  $\alpha$ -glucosidase. *The 3<sup>rd</sup> national conference on Biology of Payam Noor University* (2019)
35. Kosar Mohsenpour, Azadeh Hekmat\*, Seyed Mohammad Atyabi, Haleh Bakhshandeh. The effect of  $\text{TiO}_2$  nanoparticles with different coating on the structure of DNA. *The 27<sup>th</sup> Conference on Organic Chemistry* (2019)
36. A. Hekmat\* and A. Hekmat. Choosing the best silver nanoparticles coating by Analytical Hierarchy Process (AHP). *11<sup>th</sup> Conference on Data Envelopment Analysis* (2019)
37. Z. Akbarkashani, A. Hekmat\*, S. M. Atyabi. Investigation of the interaction of diamond nanoparticles with human chorionic gonadotropin (hCG). *8<sup>th</sup> International Conference on Nanostructures (ICNS8)* (2020)
38. M. Sadeghimanesh, A. Hekmat\*, Z. Hajebrahimi. Simulated Microgravity Condition Alters the Histone Gene Expression in MDA-MB-231. *4<sup>th</sup> International Genetic Congress* (2020).
39. A. Hekmat. Aptamers as a new approach in detection, diagnosis and therapy of deadly Viruses. *International Virtual Symposium on the Biological, Clinical and Basic Science Approaches to Covid-19.* (2020)
40. F. Kiaee, A. Hekmat\*, Haleh Bakhshandeh. Structural effects of Diamonds nanoparticles on the Histone H3 structure. *6<sup>th</sup> IASBS Symposium in Biological Science and 16<sup>th</sup> Conference of Iranian Society of Biophysical Chemistry (ISOBC)* (2021)
41. N. Rahmanian, A. Hekmat\*, Z. Hajebrahimi. Effect of simulated microgravity condition on mouse myoblast (C2C12) cells growth. *21<sup>st</sup> National & 9<sup>th</sup> International Congress on Biology* (2021)
42. D. Motamedi, A. Hekmat\*, M. Ghiaci. Paclitaxel-loaded  $\beta$ -lactoglobulin nanoparticles for drug delivery. *8<sup>th</sup> International E-congress on Nanosciences and Nanotechnology (ICNN 2021)* (2021)
43. S. Marouzi, M. Darroudi, A. Hekmat, K. Sadri, R. Kazemi Oskuee. Bio-distribution comparison between synthesized carbon quantum dots and nanodiamonds. *8<sup>th</sup> International E-congress on Nanosciences and Nanotechnology (ICNN 2021)* (2021)
44. A. Hekmat. Consequences of Simulated Microgravity in Biosystems: Structural Effects and Cellular morphology. *21<sup>st</sup> National & 9<sup>th</sup> International Congress on Biology* (2021)

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## WORKSHOP ATTENDED

- 1<sup>st</sup> e-Workshop on Biomaterials application, Biomaterials Research Center (BRC), University of Tehran, Tehran, Iran (3-17 June 2006)
- Workshop on General Methods in Cancer Stem Cell Research, Ardabil University of Medical Sciences, Ardabil, Iran (14 June 2012)
- Workshop on International Patent, International Campus of Sharif University of Technology, Kish Island, Iran (13 March 2012)
- Workshop on Research and Scientific Publishing, Springer, University of Tehran, Tehran, Iran (19 February 2013)

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## TEACHING EXPERIMENTS

1. Biophysics, BSc (2008- Current)  
Shahr-Qods University
2. Radiation Biophysics, BSc (2008- Current)  
Shahr-Qods University
3. Biology of Cancer, MSc (2014- Current)  
Science and Research University
4. Biophysical chemistry, MSc (2014- Current)  
Science and Research University
5. Physical Pharmacy, MSc (2014- Current)  
Science and Research University
6. Research Method, MSc (2014- Current)  
Science and Research University
7. Research Methods, Ph.D. (2014- Current)  
Science and Research University
8. Cellular Biophysics, Ph.D. (2014- Current)  
Science and Research University
9. Theoretical Biophysics, Ph.D. (2014- Current)  
Science and Research University

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## RESEARCH POSTGRADUATE STUDENTS SUPERVISED

### **M.Sc Students:**

1. Ms. Farideh Firouzi (Biophysics, 2016)

- The study of changing in the expression of proteins associated with breast cancer operative radiotherapy via proteomics techniques
2. Ms. Masoumeh Afrough (Biophysics, 2017)  
The structural effects of nanoparticles of titanium dioxide (TiO<sub>2</sub> NPs) and paclitaxel drug for breast cancer treatment on ctDNA macromolecules
  3. Ms. Talie Sadat Esmaeeli (Biophysics, 2017)  
The structural studies of Albumin protein extracted from Rat male mouse exposed to stimulated sound pollution
  4. Ms. Zeinab Fahimi (Biophysics, 2017)  
The investigation of the effects of grand Tehran bazar and sadeqieh subway sound pollution on Blood serum from vistar male mouse: chemomethrics and proteomixis point of view
  5. Ms. Bahar Hajaty (Biophysics, 2017)  
The study of the effects of gravity and microgravity on thermo dynamical parameters of binding of AgNPs to DNA macromolecules
  6. Mr. Yoones Moosavi (Biophysics, 2017)  
The Study of the Activity Assay of carbonic anhydrase in the present of sodium oxalate and Regenerative Ethylendiamine
  7. Mr. Amir Motamedzade (Biophysics, 2017)  
The Study of microgravity on Human Serum Albumin (HSA) structure in different time
  8. Ms. Zahra Pashah (Biophysics, 2017)  
The Structural Effects of Diamond Nanoparticles (Diamond NPs) and Paclitaxel Drug for Breast Cancer Treatment on ct-DNA Macromolecule
  9. Ms. Fariba Salavati (Biophysics, 2017)  
The study of structural changes of Human serum albumin (HSA) in present of Diamond Nanoparticles and Paclitaxel, drug for breast cancer treatment
  10. Ms. Asma Valizadeh (Biophysics, 2017)  
The study of the effects of microgravity on TiO<sub>2</sub> nanoparticles binding to ct-DNA in space simulation condition
  11. Ms. Sahar Salmanzadeh Zehkesh (Biophysics, 2018)  
Preparation and Characterization of Agkistrodon halys snake venom containing sodium alginate Nanoparticles
  12. Ms. Mohaddeseh Rabizadeh (Biophysics, 2018)  
The comparison of the apoptosis effects of TiO<sub>2</sub> NPs into MDA-MB-231 breast adenocarcinoma cell line in microgravity and gravity conditions
  13. Ms. Zahra Roshani (Biophysics, 2018)  
The study of the effect of silver nanoparticles in different coating surface on Human serum album

- structure (as a protein model)
14. Ms. Roya Boromand Gohar (Biochemistry, 2018)  
Extraction of saponins from *Tribulus terrestris* and evaluation of its effects on Human serum Albumin (HSA) structure
  15. Ms. Samaneh Montazeri (Biophysics, 2018)  
Investigating the effects of  $\text{Co}_{0.3}\text{Mn}_{0.2}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$  nanoparticles on DNA structure
  16. Ms. Elham Bakhshi (Biophysics, 2018)  
Synthesis of silver wire/graphen nanostructure and its interaction study on Human Serum Albumin (HSA) structure
  17. Ms. Atieh Gheisari (Biophysics, 2018)  
The investigation of the effects of sound pollution on hCG hormone structure
  18. Ms. Sama Alijani (Biochemistry, 2019)  
The effect of saponin derived from *Tribulus terrestris* on the activity and structure of  $\alpha$ -glucosidase
  19. Ms. Kosar Mohsenpour (Biophysics, 2019)  
Study of the effect of  $\text{TiO}_2$  nanoparticles with three different coating on the structure of DNA
  20. Ms. Setareh Zahedian (Biophysics, 2019)  
Comparative study of cold-plasma treated medium cultured and doxorubicin treated MCF-7 cell-line using flow cytometric assay
  21. Mr. Mojtaba Sadeghi Manesh (Biophysics, 2020)  
The effects of microgravity simulation on Histone structure and Histone gen regulation in breast cancer cell line (MDA-MB-231)
  22. Ms. Zeinab Akbarkashani (Biophysics, 2020)  
Nanodiamonds and Human chorionic gonadotropin (hCG) interaction investigation
  23. Ms. Margerita Adamian (Biophysics, 2020)  
The effect of microgravity on the expression of claudin genes in MCF-7 and MDA-MB-231 breast cancer cell lines.
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