

ACADEMIC TEACHING AND RESEARCH CURRICULUM VITAE

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Google scholar:

https://scholar.google.com/citations?user=0H0BfVAAAAAJ&hl=en

Experience:

September 2022–March 2024: Medical Physicist, Harandi Medical Center, Isfahan, Iran

March 2024– present: Professor assistant in Department of Medical Physics, Faculty of Medicine, Hamadan university of medical physics, Hamadan, Iran

Education:

PhD: Medical Physics, Department of Medical Physics, Faculty of Medical Sciences, Isfahan University of Medical Sciences (2018-2023)

MSc: Medical Physics, Department of Medical Physics, Faculty of Medical Sciences, Isfahan University of Medical Sciences (2015-2018)

BSc: Physics, Department of Physics, Faculty of Basic Sciences, Bu-Ali Sina University, Hamadan, Iran (2011-2015)

PhD Thesis:

Prediction of the probability of radiation-induced rectal tissue injury in pelvic radiotherapy based on rectal dosimetric parameters and changes in vascular endothelial growth factor expression

Master Thesis:

Investigation of the Synergistic Effects of 1 MHz Ultrasound Waves at Different Intensities in the Presence of Gold Nanoparticles on the Viability of 4T1 Cell Line, and an in Vivo Study on a Breast Tumor Model.

Skills:

- Radiotherapy dosimetry systems
- Radiotherapy treatment planning
- Certified Medical Physicist in Nuclear Medicine- Iranian Medical Physics
- Certified Medical Physicist in Radiation Therapy- Iranian Medical Physics
- Various cell lines culture and their preservations
- MTT assay
- Using nanoparticles in treatment of cell and animal's tumors

Research field of Interest:

- Application of Artificial Intelligence and Machine Learning in Medical Diagnosis and Treatment
- Dosimetry and treatment planning in radiotherapy clinics

COURSES TAUGHT

1. Residency and Clinical Education

- Radiation Therapy Physics for Radiation Oncology Residents
- X-ray Physics and Mechanisms of X-ray Imaging for Radiology Residents

2. Graduate-Level Courses (M.Sc.)

- Radiation Therapy Physics
- Radiation Protection (Ionizing Radiation)
- Non-Ionizing Radiation Protection
- Specialized English for Physics
- Atomic and Nuclear Physics

3. Medical and Pharmaceutical Physics

- Medical Physics for Medical Students
- Pharmaceutical Physics

4. Undergraduate-Level Courses (B.Sc.)

Specialized Physics I

Specialized Physics II

Acoustics (Physics of Sound)

Ultrasound Physics for Radiologic Technology Students

General Physics Laboratory

Publications:

1. Evaluation of variability of dosiomics features with varying prescribed dose in prostate cancer, Marziyeh Mirzaeiyan, Simin Hemati, Ali Akhavan, Mahnaz Etehadtavakol, Zahra Sharifonnasabi, Alireza Amouheidari, Atoosa Adibi, Hossein Khanahmad, Parvaneh Shokrani, Journal of Biomedical Physics & Engineering, 2026

2. Comparison of Dosiomics Features and Dosimetric Parameters for Detecting Variations in Dose Distribution in Breast Cancer Radiotherapy, Marziyeh Mirzaeiyan, Ali Akhavan, Parvaneh Shokrani, Zahra Sharifonnasabi, Mahnaz Etehadtavakol, Journal of Medical Physics, 2025

3. Dosimetric and Radiobiological Comparison of Three-Dimensional Conformal Radiotherapy and Helical Tomotherapy in Whole Pelvic Radiotherapy of Prostate Cancer, Marziyeh Mirzaeiyan, Ali Akhavan, Alireza Amouheidari, Atoosa Adibi, Simin Hemati, Mahnaz Etehadtavakol, Hossein Khanahmad, Parvaneh Shokrani, Journal of Biomedical Physics & Engineering, 2025

4. Evaluating the Predictive Value of the Dose-volume Parameters and Vascular Endothelial Growth Factor Expression on Rectal Toxicity in Prostate Cancer Patients, Marziyeh Mirzaeiyan, Hossein Khanahmad, Simin Hemati, Mahnaz Etehadtavakol, Zahra Sharifonnasabi, Parvaneh Shokrani, Journal of Medical Physics, 2024

5. Dosiomics-based detection of dose distribution variations in helical tomotherapy for prostate cancer patients: influence of treatment plan parameters, Marziyeh Mirzaeiyan, Ali Akhavan, Simin Hemati, Mahnaz Etehadtavakol, Alireza Amouheidari, Atoosa Adibi, Hossein Khanahmad, Zahra Sharifonnasabi, Parvaneh Shokrani, Physical and Engineering Sciences in Medicine, 2024

6. Dosiomics-based comparison of dose distributions in nasopharyngeal cancer patients: 3D-CRT versus Tomotherapy, M Mirzaeiyan, N Najafizadeh, M Saeb, D Shahbazi-Gahrouei, International Journal of Radiation Research, 2024

7. Destructive effects of therapeutic ultrasound and gold nanoparticles on a breast carcinoma tumor model in BALB/c mice, Ahmad Shanei, Marziyeh Mirzaeiyan, H Hejazi, International Journal of Radiation Research, 2020

8. The therapeutic effect of acoustic cavitation on breast carcinoma tumor model in BALB/c mice in the presence of gold nanoparticles, Marziyeh Mirzaeiyan, Ahmad Shanei, Hossein Hejazi, 2019

9. Cancerous cell destruction using low level ultrasound in the presence of gold nanoparticles: An in vitro study on 4T1 cells, Ahmad Shanei, Neda Attaran, Marziyeh Mirzaeiyan, Mohammad R Salamat, Hossein Hejazi, Current Nanoscience

10. The effect of ultrasound parameters on the destruction of 4T1 cells in the presence of gold nanoparticles, Ahmad Shanei, Mohammad Reza Salamat, Hossein Hejazi, Marziyeh Mirzaeiyan, Journal of Isfahan Medical School, 2018