

Curriculum Vitae

First name: Maryam

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Date of birth: 1978

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Academic degree: Assistant professor (in Medical Physics)

Educational Background:

1. **Ph.D.** in Medical Physics: Radiotherapy, Dosimetry and Monte Carlo simulation, Isfahan University of Medical Sciences, February 2008 - February 2013.

Title of Thesis: Comparison of the risk of secondary cancer after conventional radiotherapy, 3D-CRT and IMRT using Monte Carlo models and virtual phantoms.

2. **M.Sc.** in Medical Physics, Isfahan University of Medical Sciences, September 2001 – Jul 2003.

Title of Thesis: Fetal dose estimation in radiotherapy of brain and breast cancer and Hodgkin's diseases.

3. **B.Sc.** in Atomic Physics, Isfahan University, Isfahan, October 1996- July 2000.

Current academic activities

1. Teaching medical and radiological Physics courses.
2. Research in radiotherapy, dosimetry and Monte Carlo simulations.

Experiences:

- 1- Jul 2013 - present, as an assistant professor: Dept. of Medical Physics, School of Medicine, Shahrekord University of Medical Sciences, Shahrekord.
- 2- September 2003-2013, as a tuition trainer: School of Medicine, Islamic Azad University-Najafabad.
- 3- 2003-2005, as a tuition trainer: Payame Noor University, Najafabad.
- 4- 2005-2008, as a physicist at Radiotherapy Dept. and Nuclear Medicine Dept. of Seyedoshohada (Omid) hospital, Isfahan. Skills gained during that period:
 - QC and calibration of treatment machines (Linac and Cobalt)
 - Treatment Planning and patient simulation (different treatment techniques: conventional, 3D CRT and IMRT)
 - QC of Gamma Camera and environmental monitoring
 - Dosimetry using chambers (Farmer, PP), TLD and Radiochromic films

Teaching Experience:

- 1- Medical Physics (for G.P. students)
- 2- General Physics (for B.Sc. Radiographer and Environment Health students)
- 3- The physics of diagnostic radiology (for B.Sc. Radiographer students)
- 4- Physics of laboratory instruments (for Laboratory Sciences)
- 5- Biophysics (for B.Sc. Laboratory Sciences, Biology and Health students)
- 6- Radiobiology (for B.Sc. Biology students)
- 7- Physics of Computed Tomography (for B.Sc. Radiographer students)
- 8- MATLAB in image processing (for B.Sc. Radiographer students)
- 9- Repair and maintain of radiography equipment's (for B.Sc. Radiographer students)

- 10- QC of imaging equipment's (for B.Sc. Radiographer students)
- 11- Radiobiology, Radiation Protection and Dosimetry (for radiation workers)

Scientific awards:

- 1- Encouragement letter (regarding to 1st ranking in Ph.D entrance exam in 2008) from the Educational Vice Chancellor of Minister of Health, Treatment and Medical Education, Iran, Tehran, 2008.
- 2- Selected student (among Ms.C and Ph.D students) in Isfahan University of Medical Sciences.

Participated congresses, workshops, and courses:

- 1- Workshop of Methods: Learning, Shahrekord, Iran, January, 2014.
- 2- Workshop of Teaching Methods: Formative Assessment & Multiple Choice Questions, Shahrekord, Iran, December, 2013.
- 3- Training on End note & End note web, Shahrekord, Iran, January 3, 2013.
- 4- Workshop of BEAMnrc simulation software (as assistant), Isfahan, Iran, September, 23, 2013.
- 5- Workshop of Geant4 simulation software, Isfahan, Iran, September, 19-23, 2011.
- 6- Workshop of BEAMnrc simulation software, Isfahan, Iran, March, 11, 2010.
- 7- Workshop of Teaching Methods, Isfahan, Iran, May 20, 2009.
- 8- Workshop of medical cares in nuclear accidents (as lecturer, Isfahan, Iran, November 13-14, 2008.
- 9- Teaching Methods, Isfahan, Iran, October 17-18, 2002.
- 10- Workshop of Scientific Writing, Isfahan, Iran, 10-12, November, 2010.
- 11- Training on ICDL skills, Isfahan, Iran, 2006.
- 12- 1th MEFOMP international conference of medical physics, Shiraz, Iran, 2-4, November, 2011.
- 13- 7th ICMP (Iranian Medical Physics Congress), Ahvaz, Iran, January 24-26, 2006.
- 14- 11th ICMP (Iranian Medical Physics Congress), Tehran, Iran, November 6-7, 2014.
- 15- 1st International Congress of Artificial Intelligence in Medical Sciences, Kish Island, Iran, May 2023.

Publications:

A: Full papers in international journals:

1. Out-of-field beam characteristics of a 6 MV photon beam: Results of a Monte Carlo study M. Atarod, P. Shokrani, A. Azarnoosh, *Applied Radiation and Isotopes*, 72, 2013: 182–194.
2. Monte Carlo study of fetal dosimetry parameters for 6 MV photon beam
M Atarod, P Shokrani *Journal of signals and sensors* 3(1), 2013:12-17.
3. Design of a generally applicable abdominal shield for reducing fetal dose during radiotherapy of common malignancies in pregnant patients M. Atarod, P. Shokrani, A. Pourmoghaddas *Iran. J. Radiat. Res.*, 10(3-4), 2012:151-156.
4. Felfeliyan F, Atarod M, Amouheidari A, Noshadi S, Shokrani P. Design and Implementation of a Monte Carlo Framework for Assessment of Spoiler Applications in Abutting Electron Fields. *Journal of Biomedical Physics & Engineering*. 2020 Jun;10(3):341.
5. Development and implementation of a Monte Carlo frame work for evaluation of patient specific out- of - field organ equivalent dose, M Atarod, P Shokrani, A Amouheidari, *Int. J. Radiat. Res.*, Vol. 15 No. 3, July 2017, 289-294.

6. Noshadi S, Atarod M, Amouheidari A, Felfeliyan F, Shokrani P. Evaluation of Therapeutic Properties of a Low Energy Electron Beam Plus Spoiler for Local Treatment of Mycosis Fungoides: A Monte Carlo Study. *Journal of Biomedical Physics & Engineering*. 2020 Aug;10(4):441.
7. Evaluation of the photon dose calculation accuracy in radiation therapy of malignant pleural mesothelioma, Mahmoudi G, Farhood B, Shokrani P, Amouheidari A, **Atarod M**, *Journal of Cancer Research and Therapeutics*(2018).
8. Estimation of the thyroid secondary cancer risk on the patient of standard breast external beam radiotherapy, Momeni, Z., Tavakoli, M.B., Atarod, M. *Journal of Medical Signals and Sensors*, 8(4): 238-243
9. Shami N, **Atarod M**, Shokrani P, Najafizade N. Sensitivity Analysis of a 6 MeV Photon Beam Monte Carlo Model. *Journal of Medical Signals & Sensors*. 2023 Apr 1;13(2):144-52.
10. Atarod M, Doosti IM. Improvement of Clinical Education of Radiography Skills with a Participatory Approach: An Action Research.
11. Momeni Z, Tavakoli MB, Atarod M. Estimation of the thyroid secondary cancer risk on the patient of standard breast external beam radiotherapy. *Journal of medical signals and sensors*. 2018 Oct;8(4):238.

B: Full papers in Persian Language Journals (abstracts in English):

- 1- **The Effect of Physical Characteristics of Spinal Implants on Spinal Cord Dose Distribution** M. Alinejad, P. Shokrani, A. Amouheidari, **M. Atarod**, *J Isfahan Med Sch* 2014; 31(262): 1919-31.
- 2- An investigation of dose distribution calculation accuracy in match photon-electron radiation therapy for malignant pleural mesothelioma by Monte Carlo simulation, *Journal of Sabzevar University of Medical Sciences*, Volume 22, Number 3, July & August 2015. Golshan Mahmoudi., Parvaneh Shokrani., Alireza Amouheidari., **Maryam Atarod**.
- 3- Investigation of factors influencing the accuracy of Monte Carlo simulation of a Siemens linear accelerator. *J Radio biol*. Mahmoudi G, Shokrani P, Amouheidari A, **Atarod M**, Hosseinzadeh A. 2015;2(2):30-35.
- 4- Measurement of Collimator Scatter Factor for Photon Fields Using Gafchromic EBT2 Film and Ion Chamber, Z Asgarian Dehkordy, M Atarod, F Eini, SM Hoseini, 2016; *Jundishapur Scientific Medical Journal*, 14 (6).

C: Conferences

1. **Atarod M**, Shokrani P. Evaluation of the effect of abdomen thickness on estimating fetal dose during radiotherapy. 1th MEFOPM international conference of medical physics, Shiraz, Iran, 2-4, November, 2011.
2. **Atarod M**, Shokrani P. Fetal dose estimation in radiotherapy of brain and breast cancer and Hodgkin's diseases. 7th ICMP (Iranian Medical Physics Congress), Ahvaz, Iran, January 24-26, 2006.
- 16- **Atarod M**, Shokrani P, Amouheidari A. Development and implementation of a

- Monte Carlo-based computational framework for estimation second cancer incidence risk, 11th ICMP (Iranian Medical Physics Congress), Tehran, Iran, November 6-7, 2014.
3. Parvaneh Shokrani, Golshan Mahmoudi, Alireza Amouheidari., **Maryam Atarod**. An investigation of dose distribution calculation accuracy in match photon-electron radiation therapy for malignant pleural mesothelioma by Monte Carlo simulation. 11th ICMP (Iranian Medical Physics Congress), Tehran, Iran, November 6-7, 2014.
 4. M. Alinejad, P. Shokrani, A. Amouheidari, **M. Atarod**, The accuracy of dose calculation using CTCREATE/DOSXYZnrc code in phantom with Spinal Implants. 11th ICMP (Iranian Medical Physics Congress), Tehran, Iran, November 6-7, 2014.
 5. Effect of CT image metallic artifact on accuracy of organ delineation and dose calculations in treatment planning of spinal radiation fields. Swiss Congress of Parvaneh Shokrani, 2016 Radiology, Basel, Switzerland. 2015. Shokrani P, Alinejad M, Amooheidari A, **Atarod M**, A Pourmoghadas
 6. Shokrani P, Felfelian F, **Atarod M**, Amouheidari A, Noshadi S, Application of beam spoilers for dose uniformity in abutting low energy electron fields: a monte carlo simulation study. 15th International Conference on Radiation and Applications in Various Fields of Research (RAD 2017).
 - 17- Atarod M, Rostami B, Potential challenges of incorporating artificial intelligence (AI) solutions into workflows of breast imaging departments". 1 st International Congress of Artificial Intelligence in Medical Sciences, Kish Island, Iran, May 2023.

D: Book (in Persian)

1. Physics of ultrasound, **Atarod M.**, Abdollahi M., Saberi H., and Dr. Tavakoli MB, as supervisor. Tehran, Iran, Hakim Press, May 2010.