Curriculum Vitae

First name: Sadegh
Sure name: Shurche
Gender: Male
Date of birth: August 17th, 1992
Place of birth: Nahavand, IRAN
Nationality: Iranian
Marital Status: Married
First language: Persian
Second language: English
E-mail: sadegh.shurche@kums.ac.ir

Educational Background:

1. B.Sc. in Diagnostic Radiology, Hamedan University of Medical Sciences, Hamedan, IRAN. (2010-2014)
2. M.Sc. in Medical Physics, Tehran University of Medical Sciences, Tehran, IRAN. (2015-2018)

   Title of Thesis: Simulation of capillary hemodynamics and comparison with Experimental results of micro phantom imaging, DWI, and PWI.

3. Ph.D. in Medical Physics, Tarbiat Modares University of medical science, Tehran, IRAN. (2020-2025)

   Title of Thesis: The synergistic effect of dual frequency sonication in the presence of microbubbles on androgenetic alopecia treatment using the administration of platelet-rich plasma and growth factor-rich plasma in the in vivo model of C57BL/6 male mice.

Participated in workshops (With Certificate):

1- Workshop on ***Production and Quality Control of ^{99m}Tc, ^{68}Ga, ^{111}I.*** **Atomic** Energy Organization of Iran, Tehran, Iran, Jan. 18-19, 2016.

2- Workshop on Simulation of Medical Physics and Medical Engineering Devices and Phenomena ***with COMSOL Multiphysics***, Tehran, Iran, Sep. 3-5, 2016.

3- Workshop of ***Advanced MRI Techniques: functional MRI***, Tehran, Iran, December 24-25, 2015.

4- Workshop of ***Advanced PET and SPECT Instrumentation and Imaging***, Tehran, Iran, April 22, 2016.

5- Workshop of ***Intermediate Course on MCNPX Monte Carlo Code***, Tehran, Iran, August 16-17, 2016.

6- Workshop on Geant 4: ***a toolkit for the simulation of the passage of particles through matter***. Tehran, Iran, Sep 6-8, 2016.

7- Workshop of ***Diffusion Magnetic Resonance Imaging,*** Tehran, Iran, January 22, 2016.

8- Workshop of ***Perfusion Magnetic Resonance Imaging,*** Tehran, Iran, January 1-2, 2016.

9- Workshop of Basic ***training course of MRI***, Tehran, Iran, January 6-7, 2016.

10- Workshop of ***Biosafety***, Tehran, Iran, January 28-30, 2017.

11- Workshop of introduction to ***fMRI***, ***DWI***, ***PWI***, Tehran, Iran, January 10, 2017.

12- Workshop of ***Functional Magnetic Resonance Imaging,*** Tehran, Iran, July 22-31, 2017.

13- 13th Workshop on Cell Proliferation and Colony Formation Assays**,** Tehran, Iran, September 16, 2021.

14- Workshop on ***Laboratory Animals***, Kermanshah, Iran, September 18, 2021.

15- Workshop on ***Systematic Review and Meta-Analysis***, Kermanshah, Iran, September 13, 2021.

16- Workshop on ***Plagiarism***, Kermanshah, Iran, September 29, 2021.

17- Workshop on ***Familiarity with the PubMed site***, Kermanshah, Iran, October 6, 2021.

18- Workshop on ***Familiarity with the Scopuse site***, Kermanshah, Iran, October 20, 2021.

19- Workshop on ***Principles of working with laboratory animals*** approved by the

ethics in biomedical research committee of Zanjan University of Medical Sciences, Nov 7, 2021.

20- ***Introductory Certification of Radiation Protection*** approved by the Atomic Energy Organization of Iran, December 19, 2021

21- ***Advanced Certification of Radiation Protection*** approved by the Atomic Energy Organization of Iran, December 21, 2021

22- Workshop on ***CT Angiography***, Kermanshah, Iran, June 20, 2022.

23- Workshop on ***Biological Paradigms Affecting Radiotherapy Outcome***, AFOMP Webinar, April 1, 2021.

24- Workshop on ***New Approaches of Regenerative Medicine with Emphasis on Treatment with Cells and Their Products,*** Ideal Gene and Cell Knowledge Base Company, January 12th,2023

Publications:

A: Full papers in English-language journals:

1. Shurche, Sadegh, and Nader Riahi Alam; ***''Assessment of the Accuracy, Precision and Reproducibility of Apparent Diffusion Coefficient Measurements on a Clinical Magnetic Resonance Imaging System''***. Frontiers in Biomedical Technologies 4.3-4 (2018): 49-58.

2. Shurche, Sadegh, and Nader Riahi Alam; ***"Investigating the Geometric Distortion in 3 Tesla MRI Images Based on the Phantom Studies."*** Frontiers in Biomedical Technologies 4.1-2 (2018): 42-48.

3. Shurche, Sadegh, and Nader Riahialam; ***"Diffusion Phantom Assessment in 3 Tesla MRI Scanner."*** Frontiers in Biomedical Technologies 3.1-2 (2017): 34-40.

4. Shurche, Sadegh, and Nader Riahialam; ***''Simulation of Capillary Hemodynamics and Comparison with Experimental Results of Micro phantom Perfusion Weighted Imaging''***. Journal of Biomedical Physics & Engineering, Accepted Submission 2018-05-08.

5. Shurche, s., and M. Yousefi sooteh, ''Fabrication of New 3D Phantom for Measuring Geometric Distortion in Magnetic Resonance Imaging System. Iranian Journal of Medical Physics, 2018: p. -.

6. Shurche, Sadegh, and Sooteh, Mohammad Yousefi (2019) "***Computational simulations of nanoparticle transport in a three-dimensional capillary network".*** Nano Medicine Journal, 6 (4). pp. 291-300.

7. Shurche, Sadegh and Sooteh, Mohammad Yousefi (2023) "***An Anthropomorphic Head Phantom Prototype for the Measurement of Geometric Distortion in Magnetic Resonance Imaging System"***. Iranian Journal of Medical Physics, 6 (4). pp. 291-300.

8. Shurche, Sadegh, Tinoosh Almasi, Maryam Tima, Nima Rostam Pour (2023) "***Evaluation of Patients' Received Doses in Chest CT Scan Protocols: A Retrospective Study".*** Frontiers in Biomedical Technologies 3.1-2 (2023): 34-40.

9. Sadegh Shurche, Nima Rostam Pour, Tinosh Almasi, Roghiye Bodaghi HosseinAbadi, Omid Sadeghi, Maryam Tima (2023) "***Determination of Effective Dose and Local Diagnostic Reference Level for Abdomen and Pelvis Computed Tomography with and Without Contrast Media".*** Frontiers in Biomedical Technologies 3.1-2 (2023): 34-40.

10. Sadegh Shurche, Akram Shahidani, Roghiye Bodaghi HosseinAbadi, (2023) "***Characterizing the Flow and Interaction of Microbubbles in a 2D Capillary Network for Targeted Drug Delivery: A Simulation Study".*** Frontiers in Biomedical Technologies 3.1-2 (2023): 34-40.

11. Sadegh Shurche, Manijhe Mokhtari-Dizaji, Mansoureh Movahedin, Mohammad Ali Nilforoshzade, Ehsan Taghiabadi, (2025) "***Assessing Dihydrotestosterone-Induced Skin Alterations in C57BL/6 Mice: Implications for Androgenetic Alopecia through High-Resolution Ultrasound Imaging".*** Frontiers in Biomedical Technologies 3.1-2 (2025): 34-40.

12. Sadegh Shurche, Manijhe Mokhtari-Dizaji, Mansoureh Movahedin, Mohammad Ali Nilforoshzade, Ehsan Taghiabadi, (2025) "***Mechanical index – guided low intensity ultrasound therapy for hair regeneration: insights from finite element modeling and in vivo experiments".*** Physics of Fluid. 3.1-2 (2025): 34-40.

B: Full papers in Persian-language journals (abstracts in English):

1- Shurche, Sadegh, and Nader Riahialam; *''**Measurement of Radio Frequency Non-Homogeneity in MRI**''*. Paramedical Sciences and Military Health. 2018; 12 (4):62-69

2- Shurche, Sadegh, and Farzaneh Esna-Ashari, Safoora Nikzad; '***Comparative Study of Level of Knowledge, Attitude and Performance of Radiologists, Medical Physicists and Radiographers Regarding Quality Control of Magnetic Resonance Imaging'***. Paramedical Sciences and Military Health. 2021; 12 (4):62-69

C: Publications at scientific congresses:

1. Shurche Sadegh, Riahi Alam Nader; **''Fabrication of Micro Phantom to Study Perfusion Imaging Models in Magnetic Resonance Imaging Scanner''.** Second National Microfluidic Conference and its Applications in Medical and Engineering. Tehran, Iran, March 1-2, 2018. Full paper published in the conference book. (Poster)

2. Shurche Sadegh, Riahi Alam Nader; ***''Evaluation of Temperature Increase During Magnetic Resonance Imaging''***. The First National Conference of Bioelectromagnetic: Opportunities & Challenges, Tehran, Iran, 2018. (Presentation)

3. Shurche Sadegh, Riahi Alam Nader; ***''3 Tesla MRI scanner Quality Control and Designing Required Phantoms''***. National Conference of Radiological Sciences: The Role of Radiation in Diagnosis and Treatment, Rafsanjan, Iran, 2018. (presentation)

4. Shurche Sadegh, Riahi Alam Nader; ***''Measurement of RF non-homogeneity in MRI"***. National Conference of Radiological Sciences: The Role of Radiation in Diagnosis and Treatment, Rafsanjan, Iran, 2018. (poster)

5. Shurche Sadegh, Riahi Alam Nader; ***''Evaluation of Geometric Distortion Artifacts in Echo Planar Imaging''***. National Conference of Radiological Sciences: The Role of Radiation in Diagnosis and Treatment, Rafsanjan, Iran, 2018. (poster)

6. Shurche Sadegh, Riahi Alam Nader; **''*Fabrication of New 3D Phantom for Measuring Geometric Distortion in Magnetic Resonance Imaging System''***. 12th Iranian congress of medical physics. Tehran, Iran, 2018. (poster)

7. Shurche Sadegh, Riahi Alam Nader; '' ***Development and Characterization of Synthetic Tissue-Equivalent Material for CT Imaging Applications''***. 12th Iranian congress of medical physics. Tehran, Iran, 2018. (poster)

8. Shurche Sadegh, Riahi Alam Nader; '' Design, Construction and Evaluation of an Anthropomorphic Head Phantom for Assessment of Image Distortion in Stereotactic Radiosurgery Planning Systems''. 12Th Iranian congress of medical physics. Tehran, Iran, 2018. (poster)

9. Shurche Sadegh, Riahi Alam Nader; **'' *Studying Changes in Sugar Beet Tissues by Advanced Diffusion Magnetic Resonance Imaging Techniques***''. 3rd International Conference on Applied Research in Agriculture, National Resources, and Environment, Tehran, Iran, 2019. (Poster).

10. Shurche Sadegh, Riahi Alam Nader; '' ***Studying Changes in Sugar Beet Tissues by Computed Tomography Imaging Techniques***''. 3rd International Conference on Applied Research in Agriculture, National Resources, and Environment, Tehran, Iran, 2019. (Poster).

11. Shurche Sadegh; ‘’***The Role of Linear Accelerators in Radiosurgery: Treatment of Vascular Malformations***. Second National Conference on Particle Accelerators and Their Applications, Tehran, Iran, 2015. (Poster).

12. Sadegh Shurche, Roghiye Bodaghi Hossein Abadi, Maryam Tima; “***Radiation Dose of Computed Tomography Pulmonary Angiography Examinations using Size-Specific Dose Estimate***”. Third International Congress for Radiology Students, October 3-4, 2023, Sabzevar University of Medical Sciences, Sabzevar, Iran. (Oral).

13. Shurche Sadegh, Manijhe Mokhtari-Dizaji, Mansoureh Movahedin, Mohammad Ali Nilforoshzade, Ehsan Taghiabadi; “***The effect of administration of platelet-rich plasma on the treatment of androgenetic alopecia in the in vivo model of C57BL/6 male mice***”. The 14th National Congress of Anatomical Sciences of Iran, October 24, 2024, Tarbiat Modares University, Tehran, Iran. (Poster).

14. Shurche Sadegh, Manijhe Mokhtari-Dizaji, Mansoureh Movahedin, Mohammad Ali Nilforoshzade, Ehsan Taghiabadi; “***High-resolution ultrasound imaging for non-invasive characterization of androgenetic alopecia on male c57bl/6 mice skin tissue***”. 7th International Conference on Preclinical Imaging Applications, October 24, 2024, Tehran University of Medical Science, Tehran, Iran. (Oral presentation).

15. Shurche Sadegh, Manijhe Mokhtari-Dizaji, Mansoureh Movahedin, Mohammad Ali Nilforoshzade, Ehsan Taghiabadi; “***Investigation of the Effects of Low-Intensity Ultrasound Radiation in the Treatment of Androgenetic Alopecia in Male C57BL/6 Mice***”. 13th International Conference on Medical Physics, February ۱۹, 202۵, Iran University of Medical Science, Tehran, Iran. (Oral presentation).

D: Published books:

1. *Quality Control of Magnetic Resonance Imaging ‘’ Structural and Functional’’*

   Authors: Nader Riahi Alam, Sadegh Shurche, Mohammad Yousefi Sooteh

   Publisher: Book Golden

   Language: Persian

   Year of publication: 2018

   Pages: 150

ISBN: 6002488499

2. *Perfusion Weighted Imaging and Diffusion Weighted Magnetic Resonance Imaging '' From Physics to Clinic''*

   Authors: Nader Riahi Alam, Sadegh Shurche

   Publisher: Book Golden

   Language: Persian

   Year of publication: 2018

   Pages: 372

   ISBN: 6002488340

3. *Step-by-Step CT scan*

   Authors: Sadegh Shurche, Roghaye Bodaghi Hoseinabai, Masoume Farsi Zaban

   Publisher: Arshadan

   Language: Persian

   Year of publication: 2022

   Pages: 372

   ISBN: 6002488340

4. *Step-by-Step Ultrasound*

   Authors: Sadegh Shurche, Roghaye Bodaghi Hoseinabai, Masoume Farsi Zaban

   Publisher: Arshadan

   Language: Persian

   Year of publication: 2022

   Pages: 372

ISBN: 6002488340

5. *Step-by-Step MRI*

Authors: Sadegh Shurche, Roghaye Bodaghi Hoseinabai, Masoume Farsi Zaban

Publisher: Arshadan

Language: Persian

Year of publication: 2022

Pages: 372

ISBN: 6002488340

6. *Artificial Intelligence in Medical Imaging*

Authors: Sadegh Shurche, Roghaye Bodaghi Hoseinabai, Masoume Farsi Zaban

Publisher: Arshadan

Language: Persian

Year of publication: 2022

Pages: 372

ISBN: 6002488340

E: Research Project:

1- *Comparative Study of Level of Knowledge, Attitude and Performance of Radiologists, Medical Physicists and Radiographers Regarding Quality Control of Magnetic Resonance Imaging* (Hamedan University of Medical Science- IR.UMSHA.REC.1399.070)

2- *Design and development of educational software for quality control of MRI machine for students and hospital staff* (Hamedan University of Medical Science- IR.UMSHA.REC.1400.218)

3- *Evaluation of dose received by patients using low-dose chest CT scan protocol in the diagnosis of coronavirus in Kangavar city of Kermanshah province in 1400* (Kermanshah University of Medical Science- IR.UMSHA.REC.1400.218)

4- *Investigating the synergistic effect of high-intensity focused ultrasound in combination with radiofrequency waves on the release of VEGF growth factor from platelets in platelet-rich plasma (*Kermanshah University of Medical Science - *IR.KUMS.MED.REC.1402.311)*

F: Clinical work experience:.

1- Radiotechnologist at Priepical Shohada Hospital, Hamedan (2018-2019).

2- Radiotechnologist at Chamran Hospital, Kermanshah (2019-2025).

3- CT Scan technologist at Chamran hospital, Kermanshah (2019-2025).

4- Health physics of Medical Imaging Center at Chamran hospital, Kermanshah (2019-2025).

5- Health physics of the Operation Room Center at Chamran hospital, Kermanshah (2022-2025).

G: Educational experience:

1- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science, 2018).

2- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science, 2019).

3- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science, 2020).

4- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science, 2021).

5- Familiarity with general radiological images common in the operating room- (Hamedan University of Medical Science, 2022).

6- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science, 2022).

7- Familiarity with general radiological images common in the operating room- (Hamedan University of Medical Science, 2023).

8- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science 2023).

9- Familiarity with general radiological images common in the operating room- (Hamedan University of Medical Science, 2024).

10- Medical physics, electricity, robotics, and their application in the operating room- (Hamedan University of Medical Science 2024).

11- Familiarity with general radiological images common in the operating room- (Hamedan University of Medical Science, 2025).

H: Patents:

1- Advanced imaging phantom of blood circulation (perfusion) and diffusion magnetic resonance imaging system. Registration number: 109467 (2023).

2- Collimator of the radiology device with a double diaphragm and independent and movable rail plates. Registration number: 109687 (2023).

F: Membership in forums:

1- Inventors Association of Iran.