Ahmad Esmaili Torshabi, PhD

Associate Prof. of Medical Radiation Eng. (Grad. Univ. Adv. Technol. Iran, ١ yrs.), Assistant Prof. of Medical Radiation Eng. (Grad. Univ. Adv. Technol. Iran, ١٠ yrs.), Postgrad., at Centro Nationale di Adrotherapia Oncologica (CNAO center, Italy; ٣yrs.), PhD in Proton Therapy group (Quantum Science and Energy Eng., Tohoku Univ., Japan; ٣yrs), MSc of Medical Radiation Eng. (Shiraz Univ., Iran; ٢,٥ yrs.), BS of Electronics Eng. (Bahonar Univ. of Kerman, Iran, ٤ yrs.)

Ahmad Esmaili Torshabi, PhD

Faculty of Sciences and Modern Technologies,

Graduate University of Advanced Technology,

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Personal Information

Nationality: Iranian

Date of Birth: ٣٠th March, ١٩٧٩

Place of Birth: Rafsanjan, Iran

Marital status: Married, one children

Linguistic proficiency: Persian (mother tongue)

English (Excellent)

French (Intermediate)

Italian (Basic)

Education

٢٠٠٦-٢٠٠٩ **Tohoku University, Sendai, Japan**

Cyclotron and Radioisotope Center (CYRIC)

Department of Quantum Science and Energy Engineering, Graduate School of Engineering,

Thesis: "*Development an Adjustable Beam Flattening System for Proton Therapy*"

Advanced university studies

- Routine QC tests on Proton Beam and monitoring,
- Dose delivery systems,
- Voxel Based Simulations on ٣D dose distribution,
- Collaboration with small animal PET group,

Degree: PhD

٢٠٠٣-٢٠٠٦ **Shiraz University, Shiraz, Iran**

Master of Science at Medical Radiation Engineering, Faculty of Engineering,

Thesis: *"Design and Implementation of a Code to provide MCNP4C Geometry Input File from Tomography Images Using MATLAB Software."*

Lectures (Passed): *The Principles of Radiotherapy, Medical Imaging Systems, Health Physics, Radiation Measurements and Detection, Radiation Shielding at Medicine, Radiation Detector Labs.*

Degree: MSc

۱۹۹۸-۲۰۰۳ Shahid Bahonar University of Kerman, Iran

Bachelor at Electronics Engineering, Faculty of Engineering,

Lectures (Passed): *Mathematics and Physics, Electromagnetic, Electrical circuits and Electronics, Power Electrical Machines, Controls and Communication Circuits, Technique Pulse, Electronics Labs.,*

Degree: BS

۱۹۹۳-۱۹۹۷ Ansari High School, Rafsanjan, Iran

High school

Major Subject: Mathematics and Physics

Work/Teaching History

۲۰۰۹-۲۰۱۲ Centro Nazionale di Adrotherapia Oncologica, (Fondazione CNAO), Pavia Italy

Clinical Bioengineering Unit at Fondazione CNAO,

Marie Curie Fellow of *PARticle Training Network for European radiotherapy*, PARTNER Project (١٠٠٪)
Project Title: *"Inter- & Intra Fractional Tumor Motion Error Compensation Strategies at SBRT*"

Research:

- Performance of Patient Positioning System (PPS), Patient Verification System (PVS) and Optical Tracking System (OTS) at Treatment Rooms of CNAO center
- ٤D Monte Carlo Dose Distribution Simulation by FLUKA
- Tumor motion management at precise RT

٢٠١٢-٢٠٢٣ Graduate University of Advanced Technology, Kerman Iran (Associate Professor ٢٠٢٢-٢٠٢٣, Assistant Professor ٢٠١٢-٢٠٢٢)

Medical Radiation Section, Faculty of Sciences and Modern Technologies,

Lecturer of (for MSc and PhD students)**:**

- The Principles of Radiotherapy (with focus on PT),
- Medical Imaging Systems,
- Health Physics,
- Radiobiology
- Radiation Measurements and Detection
- Radiation Shielding at Medicine,
- Charged Particles Accelerators,
- Seminar,

Supervisor of more than ٣٠ MSc Theses mainly at:

- Different ions species at hadron therapy,
- Beam delivery strategies at proton therapy,
- Range assessment at proton therapy using PET
- Tumor motion error compensation strategies at RT,
- Developing various correlation models at SBRT,
- Motion behavior of thorax tumors and data optimization,
- Internal-external markers effect at RT,
- ٤D simulation of motion effect on dose distribution,

- Patient setup and positioning issues at RT,
- Dosimetry impact of Bladder/rectum at prostate PT
- Image processing and registration applicable at RT,
- Cardiac arrhythmia treatment using RT
- The effect of various X-ray Filters at DSCT
- Simulation of Boron impact at BNCT of Brain Tumor
- Micro-dosimetry simulation of semiconductor detector
- Nano-particle based interface for scintillation detectors
- Gamma-ray densitometer for petroleum products
- Natural Environmental dosimetry on soil sample

❖ **١٤ articles: Published, from MSc theses**
❖ **١ articles: Accepted, In-Press, from MSc thesis**
❖ **٣ articles: Under-revision, from MSc theses**
❖ **١ article: Submitted, from MSc thesis**

Head of Medical Radiation section (٢ yrs.):

- Students Lectures & laboratories arrangement,
- MSc theses defenses, Seminars and journal club Monitoring
- Attending at routine meetings for taking financial supports

Head of Virtual Education Group of University (٣،٥ yrs.):

- E-Learning management of University
- Workshops arrangement for industries and factories
- Workshops arrangement for students and lecturers

Head of University Health Physics (٢ yrs.)

- Monitoring of all ionizing radiation sources at University
- Providing radiation-based instructions
- Monitoring the duties of persons involved in irradiations
- Routine environmental dosimetry,
- Recording dose of persons involved in radiation by TLD-based personnel dosimetry
- Implementing radiation protection instructions
- Organizing radiation protection workshops

Member of Scientific cooperation and International affairs of University (١ yr.)

- Updating the instruction of University International affairs
- Promoting scientific cooperation with abroad universities

٢٠١٢-٢٠١٤ Kerman University of Medical Sciences, Kerman Iran

Radiology Division, faculty of Paramedical Sciences, Radiotherapy & Oncology Center, Shafaa Hospital

Visiting Lecturer of (undergraduate students**):**

- The Physics of Diagnostic Radiology,
- Computed Tomography,
- The Principles of Ultrasound Based Imaging Systems,
- Radiation Dosimetry
- Quality Control and Quality Assurance of Medical Imaging Systems

١.٢٠١٤-٥.٢٠١٤ Bahonar University of Kerman, Kerman Iran

Faculty of Physics,

Visiting Lecturer of (PhD students**):**

- Charge Particles accelerators

٢٠١٢-٢٠١٣ Technical and Vocational Training Organization (TVTO), Iran

TVTO Unit of Bardsir, Kerman Iran

Visiting Lecturer of (TVTO Trainees**):**

- Basic Physics
- Physics of Electricity
- Electrical Circuits

٢٠٠٥-٢٠٠٦ Rafsanjan University of Medical Sciences, Kerman Iran,

Radiology Division, faculty of Paramedical Sciences
Faculty of Dentistry

Visiting Lecturer of (Undergraduate Students**):**

- Laboratory of Basic Physics

Research on:

- Collaborating with PhD thesis of dentistry student on: “Face *skin dosimetry at dental radiography using TLD”*.

٥,٢٠٠٢-٩.٢٠٠٢ Sarcheshmeh Copper Complex, Iran

Instrumentation Unit.

Trainee

- Calibration measurement devices
- QC routine tests
- Design and repair of electrical control circuits

Honors

٢٠٢٢ Top Lecturer of Graduate University of Advanced Technology, Kerman Iran (With formal certified)

٢٠٢٢ Top Researcher of Faculty of Sciences and Modern Technologies at Graduate University of Advanced Technology, Kerman Iran (With formal certified)

Scholarships & Grants

۲۰۰۶-۲۰۰۹	Ph.D. Monbukagakusho Governmental Scholarship, Tohoku University, Japan
۲۰۰۹-۲۰۱۲	EU Marie Curie fellowship, PARTNER Project of CERN, Fondazione CNAO, Italy
۲۰۱۲-۲۰۲۲	Research grants, Graduate University of Advanced Technology, Iran

Memberships

- **Technical Program Committee (TPC)** member of *International Conference on Biomedical Engineering and Biotechnology [http://www.icbeb.org/TPC]*
- **Official Reviewer** at *Iranian Journal of Medical Physics* (IJMP)-SINCE ۲۰۱٤
- **Official Reviewer** of *International Conference on Biomedical Engineering and Biotechnology (ICBEB)*- SINCE ۲۰۱۷
- **Reviewer** at *Multi-disciplinary Cancer Investigation* (MCI)
- **Reviewer** at *Journal of Biomedical Research* (JBR)
- **Reviewer** at *Journal of Frontiers at Biomedical Technologies* (FBT)
- **Reviewer** at *Journal of Applied Sciences* (Appl. Sci.)
- **Reviewer** at *Journal of Diagnostics* (Diag.)
- **Reviewer** at *Technology in Cancer Research and Treatment Journal* (TCRT)
- **Reviewer** at *International Journal of Radiology and Imaging Technology* (IJRIT)
- **Reviewer** at *International Journal of Radiation Oncology Biology Physics* (IJROBP)
- **Reviewer** at *Medical and Biological Engineering and Computing* (MBEC)

Programming Skills

- Proficient at: MATLAB software package
- Proficient at: Monte Carlo FLUKA Simulation code
- Experienced at: Micro-dosimetry simulations
- Experienced at: LABVIEW software package
- Familiar with: FORTRAN code
- Proficient at: medical images Processing, Registration and Monitoring softwares

Experimental & Personal Skills

- Experienced to teach the scientific concepts and manage the class **as Lecturer**
- Experienced to manage scientific proposals and supervising the students theses or projects **as Mentor**
- Experienced to challenge with scientific updating projects **as individual or team-involved Researcher**
- Proficient to find proper solution for possible issue at critical conditions **as Problem Solver**
- Experienced in contact with different persons, students or staffs **as Communicator**
- Familiar with using mechanical and electrical machines for repairing, modulating or constructing passive or active devices at laboratory or facility **as Technician**

Network and collaboration

- My connections with PARTNER (Particle Training Network for European Radiotherapy) Members at the Worldwide in the follow (Proton Therapy facilities & Univs.)

Other

- ***Hobbies*:** Sport, playing volleyball, reading historical books & watching movies

Publications, Conferences, Meetings and Book chapters:

Publications:

A. Esmaili Torshabi, Andrea Pella, Marco Riboldi and Guido Baroni, "Targeting Accuracy in Real-Time Tumor Tracking via External Surrogates: a Comparative Study," *Technology in Cancer Research and Treatment;* vol. ٩(٦), pp. ٥٥١-٥٦٢, Dec. ٢٠١٠

A. Esmaili Torshabi, "Investigation of the Robustness of Adaptive Neuro-Fuzzy Inference System for Tracking Moving Tumors in External Radiotherapy" *Australasian Physical & Engineering Sciences in Medicine*, vol. ٣٧(٤), pp. ٧٧١-٧٧٨, Nov. ٢٠١٤

A. Esmaili Torshabi, "Investigation of Tumor Motion Influence on Applied Dose Distribution in Conventional Proton Therapy vs. IMPT; a ٤D Monte Carlo simulation Study **"** *International Journal of Radiation Research, vol. ١١(٤), pp. ٢٢٥-٢٣١, Oct.* ٢٠١٣

A. Esmaili Torshabi, Marco Riboldi,Abbasali Imani Fooladi, Seyed Mehdi Modarres and Guido Baroni., "An adaptive fuzzy prediction model for real time tumor tracking in radiotherapy via external surrogates," *Journal of Applied Clinical Medical Physics;* vol. ١٤, pp. ١٠٢-١١٤, ٢٠١٣

A. Esmaili Torshabi, Atsuki Terakawa, Keizo Ishii, et al., "Development of an Adjustable Beam Flattening System for modification of Passive Beam Delivery in Proton therapy," *Nuclear Instruments and Methods in Physics Research, Section A*, vol. ٦١٥, pp. ١٣٨-١٤١, March ٢٠١٠

A. Esmaili Torshabi, A. Terakawa, K. Ishii, et al., "A fundamental study on beam flattening based on compact double scatterer applicable to rotational beam irradiation system in the Proton therapy facility at CYRIC, Tohoku University," proceeding of ISORD-٥ conf. *Prog. Nucl. Sci. Technol.,* vol. ١, pp. ٥٠٩-٥١٢, Kyushu Japan, July ١٥-١٧, ٢٠٠٩

A. Esmaili Torshabi, L. Ghorbanzadeh**, "**A study on stereoscopic X-ray imaging dataset on the accuracy of real time tumor tracking at external surrogates radiotherapy" *Technology in Cancer Research & Treatment,* vol. ١٦(٢), pp. ١٦٧-١٧٧, Apr. ٢٠١٧

A.Esmaili Torshabi, "Investigation the efficacy of fuzzy logic implementation at image-guided radiotherapy" *Journal of Medical Signals & Sensors,* vol. ١٢(٢), pp. ١٦٣-١٧٠, ٢٠٢٢

L. Ghorbanzadeh, **A. Esmaili Torshabi**, J. Soltani Nabipour, M. Ahmadi Arbatan, "Development of a Synthetic Adaptive Neuro-fuzzy Prediction Model for Tumor Motion Tracking in External Radiotherapy by Evaluating Various Data Clustering Algorithms" *Technology in Cancer Research and Treatment;* vol. ١٥(٢), pp. ٣٣٤-٣٤٧, ٢٠١٦ [Extracted from MSc thesis]

A. Esmaili Torshabi, M. Taghipour, "The perturbation effect of fiducial marker on ٣D dose distribution at external surrogate's radiotherapy" *Iranian Journal of Medical Physics* vol. ١٨(٢), pp. ٩٦-١٠٥, ٢٠٢١ [Extracted from MSc thesis]

G. Barzgarneghad, **A. Esmaili Torshabi,** "The response of CZT compound semi-conductor detector against gamma photons by efficiency calculation; a micro dosimetry simulation study" *Iranian Journal of Medical Physics,* Vol. ۱۷(٦), pp. ۳٥۹-۳٦٥, Nov. ۲۰۲۰ [Extracted from MSc thesis]

S.A. Dastyar, **A. Esmaili Torshabi**, "Investigating motion data selections based on patient-specific respiration pattern at external surrogates radiotherapy" *Iranian Journal of Medical Physics* (Submitted at June ۲۰۲۳, Under-revision) [Extracted from MSc thesis]

M.A. Bijari, **A. Esmaili Torshabi**, "Chest Wall Motion Tracking By Contactless Optical Camera-Based Method Using Virtual Markers" *Iranian Journal of Medical Physics* (Submitted at June ۲۰۲۳, Under-revision) [Extracted from MSc thesis]

S. Nankali, **A. Esmaili Torshabi**, P. Samadi Miyandoab, A feasibility study on ribs as anatomical landmarks for motion tracking of lung and liver tumors at external beam radiotherapy, *Technology in Cancer Research and Treatment,* vol. ١٦(١), pp. ۹۹-۱۱۱, Feb. ۲۰۱۷ [Extracted from MSc thesis]

Z. Pedrami, **A. Esmaili Torshabi**, M.A. Bijari, A. Negarestani, Y. Hamidi, A feasibility study on gamma-ray densitometer utilization for petroleum products density measurement at Shahid Ahmadi-Roshan petroleum storage in Kerman Province, Iran (submitted to *Radiation Physics and Engineering*, Aug., ۲۰۲۳) [Extracted from MSc thesis]

S. Nankali, **A. Esmaili Torshabi**, P. Samadi Miandoab, A. Baghizadeh., "Investigation on performance accuracy of different external surrogates in real time tumor tracking at external beam radiotherapy" *Frontier in Biomedical Technologies*, vol. ٢(٢), pp. ۳۸۱-۳۸۷, ۲۰۱٥ [Extracted from MSc thesis]

S. Nankali, **A. Esmaili Torshabi**, Payam Samadi Miandoab, Amin Baghizadeh.," Optimum location of external markers using feature selection algorithms for real-time tumor tracking in external-beam radiotherapy, a virtual phantom study" Journal of Applied Clinical Medical Physics, vol. ١٦ (١), pp. ٢٢١-٢٣٣, ٢٠١٦ [Extracted from MSc thesis]

L. Ghorbanzadeh, **A. Esmaili Torshabi** *"*Investigation the performance of adaptive neuro-fuzzy inference system for brain tumor delineation using expectation maximization cluster method; a feasibility study*", Frontiers in Biomedical Technologies,* vol. ٣(١-٢), pp. ٨-١٩, ٢٠١٦

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali. "٢D and ٣D Optical flow based interpolation of the ٤DCT image sequences in the external beam radiotherapy." *Frontiers in Biomedical Technologies*, vol. ٢, pp. ٤٠٤-٤١٣, ٢٠١٥ [Extracted from MSc thesis]

M. Nakhostin, **A. Esmaili Torshabi**, "The influence of electron track lengths on the γ-ray response of compound semiconductor detectors" *Nuclear Instruments and Methods in Physics Research,* vol. ٧٩٧, pp. ٢٥٥-٢٥٩, ٢٠١٥

S. Parandeh, **A. Esmaili Torshabi,** "A study on robustness of various deformable image registration algorithms on image reconstruction using ٤DCT thoracic images" *Journal of Biomedical Physics and Engineering*, vol. ٩(٥), pp. ٥٥٩-٥٦٨, ٢٠١٩ [Extracted from MSc thesis]

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali, M. Rezai "The Robustness of Various Intelligent Models in Patient Positioning at External Beam Radiotherapy" *Frontiers in Biomedical Technologies,* vol. ٢(١), pp. ٣٤٧-٣٥٧, ٢٠١٥ [Extracted from MSc thesis]

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali, M. Rezaei Raeini." A simulation study on patient setup errors in external beam radiotherapy using an anthropomorphic ٤D phantom" *Iranian Journal of Medical Physics,* vol. ١٣(٤) ٢٧٦-٢٨٨, ٢٠١٧ [Extracted from MSc thesis]

A. Esmaili Torshabi, M. Ahmadi Arbatan. "An Assessment on implementation of Imperialist Competitive Algorithm for motion dataset optimization at radiotherapy with external surrogates" *Iranian Journal of Medical Physics,* vol. ١٨(٥), pp. ٣٦٩-٣٧٥, ٢٠٢١ [Extracted from MSc thesis]

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali. "Extraction of respiratory motion signal based on image clustering and intensity parameters at radiotherapy with external beam; a comparative study" *Journal of Biomedical Physics and Engineering,* vol. ٦(٤), pp. ٢٥٣-٢٦٤, Dec. ٢٠١٦

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali. "Investigation of the optimum location of external markers for patient set-up accuracy enhancement at external beam radiotherapy." *Journal of Applied Clinical Medical Physics.* vol. ٨; (١٨)٦, pp. ٣٢-٤٣, Nov. ٢٠١٦ [Extracted from MSc thesis]

P. Samadi Miandoab, **A. Esmaili Torshabi**, S.Parandeh. "Calculation of Inter- and Intra-Fraction Motion Errors at External Radiotherapy Using a Marker-less Strategy Based on Image Registration Combined with Correlation Model" *Iranian Journal of Medical Physics*, vol. ١٦, pp. ٢٢٤-٢٣١, ٢٠١٩

A. Esmaili Torshabi, R.Ghasemkhani "Investigation the performance accuracy of contoured dual ring double scatterer system for flat beam generation at proton therapy" *Journal of Biomedical Physics and Engineering,* vol. ١٣(٢), pp. ١٠٧-١١٦, ٢٠٢٣ [Extracted from MSc thesis]

A.Imani Pourya A., **A. Esmaili Torshabi**. "Dosimetry impact of Boron and its carriers structure at Boron Neutron Capture Therapy; a simulation study" *Multidisciplinary Cancer Investigation,* vol. ٥(٣), pp. ١-٧, ٢٠٢١ [Extracted from MSc thesis]

S. Hooshmand Koochi, **A. Esmaili Torshabi**, "A feasibility study on Nano-particle properties for signal generation at NaI(Tl) scintillation detectors" *Frontiers in Biomedical Technologies*, (Accepted at June ٢٠٢٣, In-Press) [Extracted from MSc thesis]

A.Esmaili Torshabi, "Measurement of secondary neutrons produced at proton therapy, a simulation study" Iranian Journal of Radiation Safety and measurement. Vol. ١٠(٢), pp. ١٠٧-١١٢, ٢٠٢١, Special issue of ٦th ionizing and non-ionizing radiation measurement and safety conference ٤-٥ Aug. ٢٠٢١

A. Esmaili-Torshabi, "Investigation the motion data clustering of lung tumor on its position estimation using prediction model at external surrogates' radiotherapy" *Journal of Modeling in Engineering,* vol. ٦٨, pp. ٧٣-٨٣, ٢٠٢٢

A.Esmaili Torshabi, "Investigation the physical properties of different ion species at hadron therapy; a comprehensive study" *Frontiers in Biomedical Technologies*, (Accepted at June ٢٠٢٣, In-Press)

A.Esmaili Torshabi, S. Mohammadzadeh, "The effect of various parameters on measuring alpha and beta particles from soil sample; an environmental dosimetry" *Frontiers in Biomedical Technologies* (Submitted at July ٢٠٢٣, Under-revision) [Extracted from MSc thesis]

A. Pella, R. Cambria, M. Riboldi, BA Jereczek-Fossa., C. Fodor, D. Zerini, A. **Esmaili Torshabi**, F. Cattani, C. Garibaldi, G. Pedroni, G. Baroni, R. Orecchia, "Use of machine learning methods for prediction of acute toxicity in organs at risk following prostate radiotherapy" *Medical Physics,* vol. ٣٨, pp. ٢٨٥٩-٢٨٦٨, ٢٠١١

H. Sabet, K. Ishii, S. Matsuyama, Y. Kikuchi, Nakazawa, **A. Esmaili Torshabi** and H. Yamazaki, "A method to modify coordinates of detectors in positron emission tomography system" *Nuclear Instruments and Methods in Physics Research; Section A*, vol. ٦٠٠, pp. ٦٧٨-٦٨٢, ٢٠٠٨

Conferences and Meetings:

A. Esmaili Torshabi, M. Riboldi, A. Pella, G. Baroni,"The Effect of Moving Targets on the Applied Dose Distribution in Conventional Proton Therapy vs. IMPT; a Monte Carlo Simulation Study," *An international workshop in Monte Carlo computational methods in radiation track simulation and applications in physical, biological, and medical sciences,* November ٩-١٢, ٢٠١٠, Stockholm, Sweden

A. Esmaili Torshabi, M. Riboldi, A. Pella, G. Baroni, "A fuzzy prediction model approach for real time tumor tracking in radiotherapy," ٣٨*th Annual Meeting of the European Radiation Research Society*, September ٥-٩, ٢٠١٠, Stockholm, Sweden

A. Esmaili Torshabi, A. Terakawa, K. Ishii, et al., "A CT-based Monte Carlo dose calculations for proton therapy using a new interface program," *International Conference on Medical Information Systems Engineering*, May ٢٧-٢٩, ٢٠٠٩, Tokyo Japan

A. Esmaili Torshabi, A. Terakawa, K. Ishii, et al., "A fundamental study on beam flattening based on compact double scatterer applicable to rotational beam irradiation system in the Proton therapy facility at CYRIC, Tohoku University," *The Fifth International Symposium on Radiation Safety and Detection Technology (ISORD-٥)*, Kyushu Japan, July ١٥-١٧, ٢٠٠٩

A. Esmaili Torshabi, A. Terakawa, K. Ishii, et al., "Dose distribution calculation of proton beam with Monte Carlo method using a new interface program," ٢٠٠٨*Fall meeting of Atomic Energy Society of Japan (AESJ),* Kochi Japan, September ٤-٦, ٢٠٠٨

A. Esmaili Torshabi, A. Terakawa, K. Ishii, et al., "Modification of beam intensity on target volume employing an adjustable beam flattening system in proton therapy," ٢٠٠٩*Fall meeting of Atomic Energy Society of Japan (AESJ),* Tohoku University, Sendai Japan, September ١٦-١٨, ٢٠٠٩

A. Esmaili Torshabi, S.A. Dastyar, "A quantitative investigation on lung tumor site on its motion tracking in radiotherapy with external surrogates" ١٢th Iranian Congress of Medical Physics Shahid Beheshti University of Medical Sciences, Tehran Iran, July ١٩-٢٠, ٢٠١٨

A. Esmaili Torshabi, S. Hooshmand Koochi, "The Role of Various Scintillation Detectors of Positron Emission Tomography at PET Monitoring Particle Therapy; a Simulation Study " ٢٣th Annual Iranian Nuclear Medicine Society Congress, Tehran University of Medical Sciences, Tehran Iran, Nov. ٢٧-٢٩, ٢٠١٩

S. Hooshmand Koochi, **A. Esmaili Torshabi** "A Comparative Study on Positron Emitter Productions at PET Monitoring Hadron Therapy Using Proton, Carbon and Oxygen Beams" ٢٣th Annual Iranian Nuclear Medicine Society Congress, Tehran University of Medical Sciences, Tehran Iran, Nov. ٢٧-٢٩, ٢٠١٩

A. Esmaili Torshabi, "Correlation between produced positron emitters and proton dose distribution at proton therapy**"** ٩th International Conference on Biomedical Engineering and Biotechnology November ١٥-١٨, ٢٠٢٠, Online via Microsoft team therapy (***Invited Speaker***)

S. Hooshmand Koochi, **A. Esmaili Torshabi, "**A micro-dosimetry study on annihilation gamma-rays and produced secondaries at PET monitoring proton**"** ٩th International Conference on Biomedical Engineering and Biotechnology November ١٥-١٨, ٢٠٢٠, Online via Microsoft team therapy (accepted as oral presentation)

A. Esmaili Torshabi, "A quantitative investigation on produced positron emitters at proton therapy" ٢٧th Iranian Nuclear Conference, March ١-٤, ٢٠٢١ Mashhad Iran (accepted as oral presentation)

A.Paydar, **A. Esmaili Torshabi**, "Dosimetry impacts of rectum changes and balloon presence effects at proton therapy of prostate cancer" ٢٧th Iranian Nuclear Conference, March ١-٤, ٢٠٢١ Mashhad Iran

S. Hooshmand Koochi, **A. Esmaili Torshabi**, "A micro-dosimetry study on detecting and ٣D tracing of Muon particles at environmental monitoring of natural background radiation" ٢٧th Iranian Nuclear Conference, March ١-٤, ٢٠٢١ Mashhad Iran (accepted as poster presentation)

A. Esmaili Torshabi, G. Barzgarnejad, "Investigation of effective parameters on the efficiency of CdZnTe and TlBr compound semiconductor detectors" ١st Congress on Novelties at Ionizing Radiation Detection with Focus on Micro-Pattern Gaseous Detectors, Graduate University of Advanced Technology, Kerman Iran, Nov. ٩, ٢٠٢١

S. Hooshmand Koochi , **A. Esmaili Torshabi**, “Optimizing on NaI(Tl) scintillator crystal and ۲D assessment of optical photons, A simulation study” ۱st Congress on Novelties at Ionizing Radiation Detection with Focus on Micro-Pattern Gaseous Detectors, Graduate University of Advanced Technology, Kerman Iran, Nov. ۹, ۲۰۲۱

S. Hooshmand Koochi, **A. Esmaili Torshabi**, “Tracking the visible light from the interaction of Muon and gamma rays with optimized NaI (Tl) scintillation crystal to measure the effect of self-absorption and transparency” ۱st Congress on Novelties at Ionizing Radiation Detection with Focus on Micro-Pattern Gaseous Detectors, Graduate University of Advanced Technology, Kerman Iran, Nov. ۹, ۲۰۲۱

A. Esmaili Torshabi, A. Noushzadeh, K. Zahedi Lalehdashti, “Investigation of visible light interference signal separability in alpha particle detector based on CCD and photodiode” ۱st Congress on Novelties at Ionizing Radiation Detection with Focus on Micro-Pattern Gaseous Detectors, Graduate University of Advanced Technology, Kerman Iran, Nov. ۹, ۲۰۲۱

A. Esmaili Torshabi, “Review on Applications of Ionizing Radiation Detectors at Medicine” ۱st Congress on Novelties at Ionizing Radiation Detection with Focus on Micro-Pattern Gaseous Detectors, Graduate University of Advanced Technology, Kerman Iran, Nov. ۹, ۲۰۲۱ (Invited Speaker)

A.Paydar, **A. Esmaili Torshabi**, “Measurement of rectum dose while using balloon at proton therapy of prostate cancer using FLUKA simulation code”, ۱st Congress on Novelties at Ionizing Radiation Detection with Focus on Micro-Pattern Gaseous Detectors, Graduate University of Advanced Technology, Kerman Iran, Nov. ۹, ۲۰۲۱

S.A. Dastyar, **A. Esmaili Torshabi**, "A study on study on the accuracy of motion tracking of thoracic tumors at radiotherapy with external surrogates" ١٢th Iranian Congress of Medical Physics, Shahid Beheshti University of Medical Sciences, Tehran Iran, July ١٩-٢٠, ٢٠١٨

S.A. Dastyar, **A. Esmaili Torshabi**, "The effect of fuzzy correlation model parameters on real time tumor tracking at radiotherapy with external surrogates (accepted as poster presentation at conference)" ٩th International Conference on Biomedical Engineering and Biotechnology November ١٥-١٨, ٢٠٢٠, Online via Microsoft team therapy (accepted as poster presentation)

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali, M. Rezaei raeini "Optical flow based interpolation of temporal image at external beam radiotherapy" ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤, accepted as oral presentation

P. Samadi Miandoab, **A. Esmaili Torshabi**, M. Rezaei raeini "Extraction of respiratory motion signal using image registration and segmentation at external beam radiotherapy" ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤, accepted as poster

P. Samadi Miandoab, **A. Esmaili Torshabi**, S. Nankali, M. Rezaei raeini "Using various intelligent models in patient positioning at external beam radiotherapy" ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤, accepted as poster

A. Ebrahimi, **A. Esmaili Torshabi**, "A quantitative assessment of intra-fractional tumor motion and deformation error on planned dose at conventional proton therapy" International Conference on Translational Research in Radio-Oncology | Physics for Health in Europe ICTR-PHE, CICE Geneva Switzerland, ١٥-١٩ February ٢٠١٦

S. Nankali, **A. Esmaili Torshabi**, P. Samadi Miandoab, A. Baghizadeh “Investigation effect of the inter-intra fraction motion errors in the external beam radiotherapy” ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤, accepted as oral

S. Nankali, **A. Esmaili Torshabi,** P. Samadi Miandoab, A. Baghizadeh “Investigation location of the external markers in the accuracy of the tumor tracking in the external beam radiotherapy” ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤, accepted as poster

S. Parandeh, **A. Esmaili Torshabi,** “Simulation of active and passive dose delivery systems used at proton therapy” ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤

S. Parandeh, **A. Esmaili Torshabi,** “Comparison of medical image registration techniques for image interpolation applicable at external beam radiotherapy” ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤

L. Ghorbanzadeh, **A. Esmaili Torshabi** "Medical Image Segmentation and Tumor Definition Using Clustering Algorithms” ١١th International Medical Physics Conference of Iran, ٦-٧ November ٢٠١٤, accepted as oral

G. Barzgarnejad, **A. Esmaili Torshabi** "An Investigation on the performance of CZT Compound Semi-Conductor Detector in Front of Photon source; a Micro-dosimetry Simulation study” ٢nd National Conference of Technology, Energy and Data on Electrical & Computer Engineering, Tehran-Iran, ٢-٣ June ٢٠١٦, accepted as oral

Kh. Mirzakhani, **A. Esmaili Torshabi,** M. Taghipour, Ar. Dastyar "Design and Implementation of a novel prediction model for real time tumor tracking at external radiotherapy" The International Conference on New researches at Engineering Sciences, Tehran-Iran, ٢٥-٢٦ May ٢٠١٦, accepted as oral,

M. Taghipour, **A. Esmaili Torshabi,** Kh. Mirzakhani, Ar. Dastyar "The effect of implanted fiducial on ٣D dose distribution at Hadron-therapy" The International Conference on New researches at Engineering Sciences, Tehran-Iran, ٢٥-٢٦ May ٢٠١٦, accepted as oral, *chosen as best presentation with honored certificate*

Riboldi M, Gianoli C, **Torshabi AE**, Pella A, Baroni G., "Breathing phase detection and motion monitoring for ٤D treatment planning and delivery" ٤*D Treatment Planning Workshop*, December ٩-١٠, ٢٠١٠, GSI, Darmstadt, Germany

V. Moslemi, **A.E. Torshabi**, R. Faghihi, S. Mehdizadeh, K. Haddad, M.A. Mosleh-Shirazi, "Design and Implementation of Interface Software to Produce MCNP٤C Geometry Input File From Tomography Images and Comparison of Dose in Brachytherapy between the Interface Software and Standard Monte Carlo Simulation," *Proceedings of the ٣th Congress of the Iranian Radiographic Sciences Association,* Shiraz, Iran, ٩٣ (٢٠٠٨)

Pella A., Riboldi M., Seregni M. , **Esmaili Torshabi A.** , Pedotti A., Orecchia R., Baroni G. "Preliminary study of a novel external-internal correlation model for motion mitigation in particle therapy," *Annual PTCOG* ٥٠ *meetnig*, May, ٠٨-١٤, ٢٠١١, Philadelphia, America,

A.Paydar, **A. Esmaili Torshabi,** "A simulation study on the modulation of deep dose distribution of protons to produce SOBP with uniformly suitable regions in proton-beam radiotherapy", ١st National Conference

on Technological Advances of Applied Physics, Graduate University of Advanced Technology, Kerman Iran, March ٩-١٠, ٢٠٢٢

S. Hooshmand Koochi, **A. Esmaili Torshabi,** "A simulation study on the positron emitters production for various organs in proton therapy of Brain tumor" ١st International & ٢٨th National Conference on Nuclear Science and Technology ٢٠٢٢ (ICNSC٢٢) March ٢-٤, ٢٠٢٢, Tehran, IRAN

Book Chapters

Marco Riboldi, Matteo Seregni, Andrea Pella , **Ahmad Esmaili Torshabi**, Guido Baroni, "Real-time tuomr targeting in externl beam radiotherapy," *Tumor Targeting: New Technologies and therapies*, Publication date: ١st quarter ٢٠١١, NOVA Science Publishers Inc., NY ١١٧٨٨

Ahmad Esmaili Torshabi, Marco Riboldi, Andrea Pella, Ali Negarestani, Mohamad Rahnema and Guido Baroni, A clinical Application of Fuzzy Logic, *"Fuzzy Logic"* ISBN ٩٧٩-٩٥٣-٣٠٧-٥٧٨-٤, INTECH open access publisher, May ٢٠١١

Ahmad Esmaili Torshabi and Amirreza Dastyar, Book chapter title: *"Radiotherapy of breast cancer with an overview to its motion issue during treatment"* Accepted at SM book publishing group, In-Press (Nancy Hayes: stt.ebooks@esciencemedicine.com)

Ahmad Esmaili Torshabi and Amirreza Dastyar, Book chapter title: *"motion challenge of thoracic tumors at radiotherapy by introducing available compensation strategies"* Book title: Radiotherapy, ISBN: ٩٧٨-٩٥٣-٥١-٥١٢٦-٥, INTECH open access publisher, ١٧ May ٢٠١٧, DOI: ١٠,٥٧٧٢/٦٧٤٤٤