

Curriculum Vitae
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BRIEF RESUME

- Member of University Faculty (Associate Professor) (Iran):
 - Head of Radiotherapy Physics Unit and Joint Radiation Protection Officer
 - Head and Founding Member of the Ionizing and Non-ionizing Radiation Protection Research Center
 - Deputy of Postgraduate Studies and former Head of the Radiology and Radiobiology Department
 - Founding Member of Medical Imaging Research Center
 - Coordinator for PTW Freiburg Reference Hospital (Namazi Hospital)
 - Former Head of the University's Research Consultation Center (7.5 years)
 - Former Member of Namazi Hospital Radiation Protection Committee (5 years)
- National level responsibilities:
 - President of the Iranian Association of Medical Physics
 - Member of the National Examination and Assessment Board for Medical Physics, Radiation Protection, Radiobiology and Radiological Sciences
 - Member of the National Examination and Assessment Board for Clinical Oncology
 - Member of the Board of the National Radiotherapy Physics Committee
 - Advisor to the National Radiotherapy Steering Committee
- Education, professional qualification, certification and experience:
 - BSc, MSc and PhD in Medical Physics (UK)
 - IPEM Higher Training Scheme in RT Physics (UK)
 - Chartered Scientist by the Science Council (UK)
 - Registered Clinical Scientist (Medical Physicist) by the HCPC (UK)
 - 28 years post-MSc experience of clinical/research/teaching work in medical physics (incl. 11 years at the Royal Marsden Hospital and Institute of Cancer Research, University of London, UK)
- Research publications and editorial work:
 - SCOPUS h-index: 19 (with self-citations), 18 (without self-citations)
 - 107 papers in peer-reviewed journals
 - 180 conference presentations
 - Citations in >50 English-language textbooks and >1250 peer-reviewed articles
 - Member of Editorial Board: 2 journals
 - Guest Associate Editor: Medical Physics (USA)
 - Scientific Secretary, Member of Scientific Committee and Session Chairman (various conferences)

Shiraz University of Medical Sciences, Iran

Member of Faculty

- Associate Professor
- Head & Joint Radiation Protection Officer of the Radiotherapy Physics Unit
- Head and Founding Member of the Ionizing and Non-ionizing Radiation Protection Research Center
- Deputy of Postgraduate Studies and former Head (3 years) of Radiology and Radiobiology Department
- President of the Iranian Association of Medical Physics
- Member of the National Examination and Assessment Board for Medical Physics, Radiation Protection, Radiobiology and Radiological Sciences
- Member of the National Examination and Assessment Board for Clinical Oncology
- Member of the Board of the National Radiotherapy Physics Committee
- Advisor to the National Radiotherapy Steering Committee
- Founding Member of Medical Imaging Research Center
- Coordinator for PTW Freiburg Reference Hospital (Namazi Hospital)
- Former Head of the University's Research Consultation Center (7.5 years)
- Former Member of Namazi Hospital Radiation Protection Committee (5 years)

Main roles:

- Teaching, training, research and development
- Supervision of the patients' dose calculation and treatment planning service
- Supervision of the quality control and maintenance programmes of the equipment
- Specification, selection, acceptance and commissioning of new equipment
- Also, part-time member of the *Radiology & Radiobiology* and the *Medical Physics* Departments

**PREVIOUS
EMPLOYMENTS**

Royal Marsden Hospital and Institute of Cancer Research, UK

2000 – 2006

Clinical/Research Physicist: Senior (2000 – 2003), Principal (2003 – 2006)

- Performed clinically relevant research and development (predominantly in pediatric and CNS RT physics), teaching and training as well as contributing to the routine clinical programme.
- Work carried out to improve pediatric and CNS RT:
 - Commissioned the Pinnacle planning system for stereotactic conformal RT (including the commissioning of small-field beam models, export and modification of shielding blocks, CT-MRI fusion and DRR export to portal imaging systems).
 - Commissioned a HEK computerized block cutter.
 - Involved in the design, fabrication and clinical implementation of a new pediatric stereotactic frame and commissioning of a commercial one.
 - Carrying out an audit of the set-up reproducibility of children undergoing stereotactic conformal RT.
 - Evaluated and set up a practical method for routine craniospinal axis irradiation using forward-planned IMRT.
 - Involved in the commissioning of multislice helical CT and MRI scanners for radiotherapy applications.
 - Leading physicist on the evaluation and purchase of a wide-bore CT scanner and CT simulation package.

- Research:
 - Comparison of conventional and forward- and inverse-planned IMRT methods for craniospinal axis RT.
 - Planning study of conformal and IMRT techniques for posterior cranial fossa boosts including different treatment objectives.
 - Optimization of the number of stereotactic RT beams as a function of PTV shape and size.
 - Characterizing the properties of a prototype commercial MMLC.
 - Study assessing the efficacy of using DRRs as reference images for treatment verification in routine practice.
 - Study of observer reproducibility in interactive CT-MRI fusion techniques and its comparison with automated algorithms.
 - Planning study of cardiac dose in patients undergoing RT for esophageal cancer.
 - Investigation of Monte-Carlo generated electron dose distributions for clinical applications
 - Investigation of RT techniques for localized intracranial germinomas (including whole-ventricular RT)
- Main areas of responsibility: physics aspects of pediatric and CNS RT, the RT CT scanner, and Health & Safety

Brighton & Sussex University Hospitals, UK

1997 - 2000

Senior Clinical RT Physicist

- On a three-weekly *Duty Physicist* rotation with responsibility to deal with all RT physics queries.
- Checked treatment plans and charts, participated in the routine and developmental aspects of dosimetry, machine QA and brachytherapy programs, performed interdepartmental dosimetry audits, wrote *ISO9002* documentation, and audited the quality system.
- Involved in implementation of 3D treatment planning and commissioning of a cobalt unit, a superficial/orthovoltage machine, the *Osiris* contouring device and various dosimetry instruments.
- Commissioned beam data and shielding blocks on the *Helax-TMS* planning system, implemented a CT-based method for craniospinal axis treatments, wrote software to perform independent checks of treatment parameters, and computerized dose calculations for checking treatment plans.
- Involved in teaching and training for therapy radiographers

Royal Marsden Hospital, UK

1994 - 1997

Clinical RT Physicist (50% time)

- Carried out complex treatment planning, machine QA, TBI, dosimetry and patient contour measurement.
- Involved in the commissioning of a new wedge and beam data collection and processing for the *Target II* treatment planning system.
- Developed an automated system for processing TLD calibration readings and wrote *ISO9001* documents.

King's College Hospital, University of London, UK

1989

Fixed-Term Project Physicist

- Involved in the commissioning of a gamma camera for SPECT.

**TEACHING
AND
TRAINING**

Miscellaneous Courses

2006 - present

- Lecturer on the *Scientific Writing Course for PhD Students*, Shiraz, Iran (2020)
- Lecturer on the *Biomedical Engineering Summer School*, Shiraz, Iran (2019)
- Lecturer on the *Faculty Training Fellowship in Research*, Shiraz University of Medical Sciences (annually, 2011-present)
- Organizer and Lecturer on the *Workshop on Article Submission to Scientific Journals*, Shiraz University of Medical Sciences (annually, 2019-present)
- Organizer and Lecturer on the *Workshop on How to Write an Original Article*, Shiraz University of Medical Sciences (annually, 2017-present)
- Organizer and Lecturer on the *Workshop on How to give an effective oral presentation*, Shiraz University of Medical Sciences (annually, 2015-present)
- Organizer and Lecturer on the *Workshop on How to give an effective poster presentation*, Shiraz University of Medical Sciences (annually, 2015-present)
- Lecturer on the Clinical Radiotherapy Physics training workshops (*Photon & Electron Dosimetry, Linac Commissioning & QA, Treatment Planning*) organized by the Iranian Association of Medical Physics (2014, 2015, 2017, 2019)
- Organizer and lecturer on *Radiation Measurement Instruments Workshop*, 5th International and 17th Iranian Congress of Nuclear Medicine, Shiraz, Iran (2013)
- Organizer and Lecturer on the *Workshop on Monte Carlo simulation and the MCNP package*, Shiraz University of Medical Sciences (2011, 2012, 2016, 2017, 2018)
- Organizer and Lecturer on the *International workshop on advances in radiotherapy physics and technology*, Shiraz University of Medical Sciences (2011)
- Lecturer on *IMRT on the Workshop on Prostate Radiotherapy*, Cancer Society of Iran, Iran (2010)
- Lecturer on a refresher course on *nuclear medicine and radiotherapy technologies*, Shiraz University of Medical Sciences, Iran (2010)
- Lecturer on a course on *radiation protection in radiotherapy*, Shiraz University of Medical Sciences, Iran (2009)
- Lecturer on various topics on the *theoretical and practical course in radiotherapy*, Tehran University of Medical Sciences, Iran (2008, 2010)
- Lecturer on *medical image registration* on the *Continuing Medical Education* program, 24th Iranian International Congress of Radiology, Shiraz, Iran (2008)
- Lecturer on the *physics of modern radiotherapy* on the *radiation oncology physics* course, Matlab Group Company, Tehran, Iran (2008)

Shiraz University of Medical Sciences, Iran

2006 - present

- Lecturer and physics mentor in *Radiotherapy Physics* on the *Radiation Oncology Resident Training* programme
- Lecturer on *Radiation Dosimetry and Protection in Practice, Radiation Shielding Design, Radiation Physics, Medical Image Quality*, and *radiobiological modelling*, as part of the *Radiobiology and Radiation Protection MSc* degree
- Lecturer on the annual *Radiation Protection* course for radiology specialists
- Lecturer on *Scientific Writing* in the Master of Public Health degree programme
- Organizer and presenter of workshops on *Radiotherapy Treatment Planning, Peer Review of Scientific Papers, Effective Oral and Poster Presentation Skills*, and *Critical Appraisal*.
- Former lecturer on *Radiotherapy Physics* on the *MSc degree in Medical Physics and Radiology B.Sc.* degree
- Former lecturer on *Radiation Detection and Dosimetry* as part of the *Medical Physics MSc* degree
- Former lecturer on the *Physics of Radiology* on the *Radiology Resident Training* programme
- Former lecturer on *Medical Physics* for medical, dentistry and pharmacy students

Shiraz University, Iran

2006 - present

- Lecturer on the *Use of Imaging in Modern Radiotherapy, Advanced Radiotherapy Techniques* and *Advanced Dosimetry* as part of the *Medical Radiation PhD* degree
- Former Lecturer on *Planning and Calculation of Dose* as part of the *Medical Radiation MSc* degree
- Former Lecturer on *Radiation Detection and Dosimetry* as part of the *Medical*

Radiation MSc degree

- Member of the PhD entrance and comprehensive examination and thesis review committees

Kingston University, UK

2001 - 2005

- Lecturer on the *physics of treatment planning* as part of the *Therapeutic Radiography B.Sc.* degree

Institute of Cancer Research and Royal Marsden Hospital, UK

2001 – 2005

- Lecturer and practical tutor, annual *course on radiotherapy physics*
- Lecturer and practical tutor, annual *IMRT in clinical practice* course
- Lecturer and practical tutor, *stereotactic radiosurgery* course
- Lecturer and practical tutor, *use of CT in treatment planning* course
- Practical tutor, *IPEM physicist training* programmes (both *Basic* and *Higher*)
- Practical tutor, *RMH dosimetrist, radiation oncologist, and therapy radiographer induction training* programmes
- Practical tutor, *RMH therapy radiographer physics rotation* programme
- Direct involvement in teaching and training of visitors

**STUDENT
THESIS
SUPERVISION
(Completed
Projects)**

Shiraz University of Medical Sciences, Iran

2001 - present

- *Medical Physics or Radiobiology & Radiation Protection MSc* project supervisor: 24
- Joint *Medical Physics or Radiobiology & Radiation Protection MSc* project advisor: 16
- *Radiation Oncology Residency* project advisor: 1
- *Research placement supervisor* for an overseas medical student: 1

Shiraz University, Iran

- *Medical Radiation PhD* project supervisor: 2
- *Medical Radiation MSc* project supervisor or advisor: 22

Shiraz University of Technology, Iran

- *Applied Mathematics MSc* project advisor: 2

Tehran University of Medical Sciences, Iran

- *Medical Physics PhD* project supervisor: 1

Iran University of Medical Sciences, Iran

- *Medical Physics PhD* project advisor: 1

Isfahan University of Medical Sciences, Iran

- *Medical Physics MSc* project supervisor: 1

Shahid Beheshti University of Medical Sciences, Iran

- *Radiobiology MSc* project advisor: 1

Ahvaz Jondishapour University of Medical Sciences, Iran

- *Medical Physics PhD* project advisor: 1
- *Medical Physics MSc* project advisor: 1

Rafsanjan University of Medical Sciences, Iran

- *Dentistry* project supervisor: 1

Institute of Cancer Research and Royal Marsden Hospital, UK

- *PhD* supervisor (Jointly with Tehran University of Medical Sciences): 1
- Joint *MD research* project supervisor: 3

- PROFESSIONAL TRAINING AND CERTIFICATION**
- *IPEM Higher Training Scheme in RT Physics* **1994 – 1999**
– approved by an IPEM panel through written portfolios and oral examinations, leading to *Corporate Membership (MIPEM)* (equivalent to *ABR* certification).
 - *IPEM Continuing Professional Development Programme* **2000 – present**
 - *Registered Clinical Scientist (Medical Physicist)* by the UK *Health & Care Professions Council* **1999 – present**
 - *Chartered Scientist (CSci)* by the UK *Science Council* **2005 – present**
 - Faculty Training Fellowship in Medical Education **2009 (1 month)**

- EDUCATION**
- PhD in Medical Physics** **1992 - 1997**
Institute of Cancer Research, University of London, UK
Supervisors: Prof. W. Swindell, Prof. S. Webb
- *Taught module*: Included relevant physics, mathematics and statistics, introduction to cancer, and specialist electives on radiotherapy physics, medical imaging physics and Monte Carlo simulation
 - *Thesis*: Design, construction and evaluation of a combined portal imaging device and cone-beam megavoltage CT scanner for verification of RT treatments.
 - Work included *EGS4* Monte Carlo simulations, total design and implementation of an optical Monte Carlo model, hardware and software design, synchronization of the detector to an accelerator, and evaluation of the system for different types of treatment verification.
 - Examiners: Prof. Marcel van Herk and Dr. Ian Cullum

- MSc in Medical Physics** **1990 - 1991**
University of Surrey, UK
- Broad range of medical physics courses.
 - Thesis on ultrasonic tissue characterization in liver disease.

- BSc (Honours) in Physics with Medical Applications** **1986 - 1990**
King's College, University of London, UK
- Pure and applied physics courses.
 - Thesis on optimization of imaging parameters in brain SPECT.

- PUBLICATIONS**
- 107 papers in peer-reviewed journals
 - 180 conference talks and posters
 - Sets of lecture notes on *Radiotherapy Physics* (Introductory, Intermediate, Advanced)

- CITATIONS**
- Papers cited in >50 English-language textbooks and >1250 peer-reviewed articles
 - SCOPUS h-index: 19 (with self-citations), 18 (without self-citations)

- MEMBERSHIP**
- Corporate (Full) Member of the *Institute of Physics and Engineering in Medicine (IPEM, UK)*
 - Full Member of the *Iranian Association of Medical Physics*
 - Corresponding Member of the *American Association of Physicists in Medicine (AAPM)*
 - Affiliate Member of the *European Society for Radiotherapy and Oncology (ESTRO)*
 - Member of the *Iranian Radiographic Sciences Association*

PATENTS
(joint)

- Disinfection of medical waste using solar energy
- High-density concrete containing datolite for radiation shielding
- High-density concrete containing colemanite and galena for radiation shielding
- 4D MRI lung phantom

AWARDS

- Full scholarship, Summer School on Medical Radiation Detectors, Oxford University, UK, 1993
- IPEM prize for “best poster on a medical physics topic”, Roentgen Centenary Congress, UK, 1995
- “Best radiotherapy poster”, World Radiography Day Conference, London, UK, 2005
- “Member of Faculty with a large number of citations in reference textbooks”, Shiraz University of Medical Sciences award, 2008
- “Member of Faculty with a high *h-index*”, Shiraz University of Medical Sciences award, 2008 & 2015
- IAEA travel award, 2009
- “High-ranking faculty member in the Medical School” (based on educational quality evaluation), Shiraz University of Medical Sciences, 2011 & 2012
- Waived registration fee award, Joint AAPM/COMP Meeting, Vancouver, Canada, 2011
- “Largest number of international conference presentations by a Member of Faculty”, Shiraz University of Medical Sciences award, 2012
- IOMP travel award, 2013
- “Largest number of international conference oral presentations by a Member of Faculty”, Shiraz University of Medical Sciences award, 2013
- “Exemplary Faculty Member of the Medical School in 2013”, Shiraz University of Medical Sciences
- Senior author of the “best clinical dosimetry oral presentation”, Siemens Radiotherapy Users Meeting, Mashhad, Iran, 2014
- Project supervisor for the “best oral presentation award” winner, Iranian Conference on Medical Physics, Tehran, 2014
- Research-based promotion, Shiraz University of Medical Sciences award, 2015
- “Elite researcher in Iranian medical sciences community ($H\text{-index} > 15$ without self-citation)”, Ministry of Health, 2018
- “Elite researcher in the Fars Province”, Governor of Fars, 2019

EDITORIAL WORK

- Member of Editorial Board
 - *International Journal of Radiation Research*
 - *Middle East Journal of Cancer*
- Guest Associate Editor
 - *Medical Physics* (American Association of Physicists in Medicine)
- Former English Language Editor
 - Iranian Journal of Medical Physics
- Manuscript Reviewer
 - *Radiotherapy and Oncology* (European Society for Radiotherapy and Oncology)
 - *Medical Physics* (American Association of Physicists in Medicine)
 - *Physics in Medicine and Biology* (Institute of Physics and Engineering in Medicine, UK)
 - *British Journal of Radiology* (British Institute of Radiology)
 - *Clinical Oncology* (Royal College of Radiologists, UK)
 - *Physica Medica: European Journal of Medical Physics*
 - *African Journal of Biotechnology*
 - *Iranian Red Crescent Medical Journal*
 - *International Journal of Radiation Research*
 - *Iranian Journal of Medical Physics*
 - *Iranian Journal of Immunology*
 - *Journal of Biomedical Physics and Engineering* (Shiraz University of Medical Sciences, Iran)
 - *Journal of Research in Medical Sciences* (University of Isfahan, Iran)
 - *Scientific Medical Journal* (Ahvaz University of Medical Sciences, Iran)
- Conferences
 - *Scientific Secretary*
 - *Member of Scientific Committee*
 - *Session Chairman*
 - *Member of Discussion Panel*

EXPERIENCE AND SKILLS SUMMARY

- 28 years post-MSc experience of working on clinical/research/teaching aspects of medical physics
- Experience of teaching at B.Sc., M.Sc., Ph.D., M.D., professional development and medical specialist courses and supervision of students, projects and work placements at all levels.
- Areas of research:
 - *Radiotherapy*: Treatment verification and IGRT, brachytherapy, stereotactic RT, CNS RT, paediatric RT, oesophageal RT, head and neck RT, breast RT, treatment planning, IMRT, Monte Carlo simulation, electron RT, proton RT, dosimetry, total-body irradiation, radiobiology, radiation protection
 - *Imaging*: Detector development and optimization, multi-modality image registration, analytical and Monte Carlo model development, electronic portal imaging, cone-beam CT, PET-CT, SPECT
- Clinical experience in conventional and conformal RT including:
 - equipment commissioning and calibration
 - QA of treatment machines, simulators, CT scanners, planning systems and dosimetry equipment
 - dosimetry of MV and kV x-rays, electrons and γ -rays, and TLD and diode dosimetry
 - inter-departmental dosimetry audits
 - stereotactic RT and radiosurgery
 - 3D/IMRT/brachytherapy treatment planning (*Pinnacle, Oncentra EXB, Oncentra Brachy, Helax TMS, Eclipse, CadPlan, XKnife, Target, Panther, SagiPlan*)
 - beam data acquisition and analysis
 - treatment verification (EPIDs, megavoltage CT, verification of IMRT)
 - TBI, brachytherapy (LDR, HDR, Iridium wire), radionuclide therapy
- Research grants for capital equipment (UK) and medical research (Iran).
- Programming in C, Visual Basic, FORTRAN, MATLAB and Pinnacle script language
- Computing experience with DOS, Windows, UNIX and VMS on PCs, SUNs, IBM RS6000s and VAXes.

PAPERS IN PEER-REVIEWED JOURNALS

1. Kanani A., Owraangi AM, Mosleh-Shirazi MA. "Comprehensive methodology for commissioning modern 3D-image-based treatment planning systems for high dose rate gynaecological brachytherapy: A review." *Physica Medica* 77 21–29 doi.org/10.1016/j.ejmp.2020.07.031 (2020)
2. Kadivar F, Haddadi G, Mosleh-Shirazi MA, Khajeh F, Tavasoli A. "Protection effect of cerium oxide nanoparticles against radiation-induced acute lung injuries in rats." *Rep Pract Oncol Radiother.* 25(2):206-211. doi: 10.1016/j.rpor.2019.12.023. (2020)
3. Mortazavi SMJ, Aminiazad F, Parsaei H, Mosleh-Shirazi MA. "An artificial neural network-based model for predicting annual dose in healthcare workers occupationally exposed to different levels of ionizing radiation." *Radiat Prot Dosimetry.* Feb 26:ncaa018. doi: 10.1093/rpd/ncaa018. (2020)
4. Daneshvar F, Salehi F, Karimi M, Vais RD, Mosleh-Shirazi MA, Sattarahmady N. "Combined X-ray radiotherapy and laser photothermal therapy of melanoma cancer cells using dual-sensitization of platinum nanoparticles." *J Photochem Photobiol B.* 203:111737 (2020)
5. Mosleh-Shirazi MA, Shahcheraghi-Motlagh E, Gholami MH, Shakibafard A, Karbasi S, Fardid R. "Influence of dwell time homogeneity error weight parameter on treatment plan quality in inverse optimized high-dose-rate cervix brachytherapy using SagiPlan." *J Contemp Brachytherapy* 11(3):256-266 (2019)
6. Salehi F, Daneshvar F, Karimi M, Dehdari Vais R, Mosleh-Shirazi MA, Sattarahmady N. "Enhanced melanoma cell-killing by combined phototherapy/radiotherapy using a mesoporous platinum nanostructure." *Photodiagnosis Photodyn Ther.* 28:300-307 (2019)
7. Mosleh-Shirazi MA, Amraee A, Mohaghegh F. "Dose-response relationship and normal-tissue complication probability of conductive hearing loss in patients undergoing head-and-neck or cranial radiotherapy: A prospective study including 70 ears." *Phys Med.* 61:64-69 (2019)
8. Zeinali-Rafsanjani B, Mosleh-Shirazi MA, Faghihi R, Saeedi-Moghadam M, Lotfi M, Jalli R. "A method for cranial target delineation in radiotherapy treatment planning aided by single-voxel magnetic resonance spectroscopy: evaluation using a custom-designed gel-based phantom and simulations." *Br J Radiol.* 92(1104):20190216 (2019)
9. Kanani A, Karbasi S, Mosleh-Shirazi MA. "Independent assessment of source transit time for the BEBIG SagiNova® cobalt-60 high dose rate brachytherapy afterloader." *Australas Phys Eng Sci Med.* 42(4):913-919 (2019)
10. Fardid R, Ghahramani P, Mosleh-Shirazi MA, Kalantari T, Behzad-Behbahani A, Kazemi E, Okhovat MA. "Expression of transforming growth factor-beta and interferon gamma biomarkers after whole body gamma irradiation." *J Cancer Res Ther.* 15(Suppl):S135-S139 (2019)
11. Ketabi A, Ghafarian P, Mosleh-Shirazi MA, Mahdavi SR, Rahmim A, Ay MR. "Impact of image reconstruction methods on quantitative accuracy and variability of FDG-PET volumetric and textural measures in solid tumors." *Eur Radiol.* 29(4):2146-2156 (2019)
12. Hosseini, M.A., Feizi, S., Mehdizadeh, A., Ashtari, P., Mojtahedzadeh, M., Mosleh-Shirazi, M.A., Alipour, A. "Dosimetric investigation of a new quantum dots/nanocomposite (CdTe QDs/PVK) sensor for real-time gamma radiation detection." *Applied Physics A: Materials Science and Processing* 125(12):868 (2019)
13. Zeinali-Rafsanjani B, Faghihi R, Mosleh-Shirazi MA, Moghadam SM, Lotfi M, Jalli R, Sina S, Mina L. "MRS Shimming: An Important Point Which Should not be Ignored." *J Biomed Phys Eng.* 8(3):261-270 (2018)
14. Zeinali-Rafsanjani, B., Mosleh-Shirazi, M.A., Saeedi-Moghadam, M., Sefidbakht, S. "Evaluating the distribution of research in radiation sciences as published in general medical physics journals." *Egyptian Journal of Radiology and Nuclear Medicine* 49(4):1119-1124 (2018)
15. Tahmasebi Birgani MJ, Mahdavi M, Zabihzadeh M, Lotfi M, Mosleh-Shirazi MA. "Simultaneous characterization of electron density and effective atomic number for radiotherapy planning using stoichiometric calibration method and dual energy algorithms." *Australas Phys Eng Sci Med.* 41(3):601-619 (2018)
16. Arianfard, F., Mosleh-Shirazi, M.A., Karbasi, S., Mousavi, S. "Quantification of skin dose increase and photon beam attenuation for a commercial couch top and breast board using dosimetric and Monte Carlo methods," *Int J of Rad Research* 16(3), 299-309 (2018)
17. Ketabi, A., Ghafarian, P., Mosleh-Shirazi, M.A., Mahdavi, S.R., Ay, M.R. "The influence of using different reconstruction algorithms on sensitivity of quantitative 18F-FDG-PET volumetric measures to background activity variation," *Iran J of Nucl Med* 26(2), 87-97 (2018)
18. Hosseini, M.A., Mohamadianpanah, M., Zare-Bandeamiri, M., Mosleh-Shirazi, M.A. "A preliminary study on the estimation of the number of cancer patients eligible for hadron therapy in Iran and Fars Province," *Iran J of Med Sciences* 43(3), 313-317 (2018)
19. Keshtkar, M., Saba, V., Mosleh-Shirazi, M.A. "Application of different methods for reducing radiation dose to breast during MDCT," *J of Biomed Physics and Eng* 8(4), 341-346 (2018)
20. Haddadi, G., Abbaszadeh, A., Mosleh-Shirazi, M.A., Okhovat, M.A., Salajeghe, A., Ghorbani, Z. "Evaluation of the effect of hesperidin on vascular endothelial growth factor gene expression in rat skin animal models following cobalt-60 gamma irradiation," *J of Cancer Research and Therapeutics* 14(12), S1098-S1104 (2018)
21. Zeinali-Rafsanjani, B., Faghihi, R., Mosleh-Shirazi, M.A., Saeedi-Moghadam, M., Jalli, R., Sina, S. "Effect of age-dependent bone electron density on the calculated dose distribution from kilovoltage and megavoltage photon and electron radiotherapy in paediatric MRI-only treatment planning," *Brit J of Radiol* 91(1081), 20170511 (2018)
22. Nedaie, H.A., Pak, F., Vaezzadeh, V., Eqlimi, E., Takavar, A., Saligheh Rad, H.R., Mosleh Shirazi, M.A., Mirheydari, M. "A

- novel quantification method for low-density gel dosimeter,” *J of Cancer Research and Therapeutics* **14**(2), 292-299 (2018)
23. Jamali, F, Mortazavi, S.M.J., Kardan, M., Mosleh-Shirazi, M.A., Sina, S., Rahpeyma, J. “Developing light nano-composites with improved mechanical properties for neutron shielding,” *Kerntechnik* **82**(6), 648-652 (2017)
 24. Roncali, E., Mosleh-Shirazi, M.A., Badano, A. “Modelling the transport of optical photons in scintillation detectors for diagnostic and radiotherapy imaging,” *Phys Med Biol* **62**(20): R207-R235 (2017)
 25. Alizadeh Zarei, M., Takshid, M.A., Behzad Behbahani, A., Hosseini, S.Y., Okhovat, M.A., Rafiee Dehbidi, G.R., Mosleh Shirazi, M.A. “Synergistic effects of NDRG2 overexpression and radiotherapy on cell death of human prostate LNCaP cells,” *J Biomedical Physics Engineering* **7**(3): 257-264 (2017)
 26. Faghihi, R., Zeinali-Rafsanjani, B., Mosleh-Shirazi, M.A., Saeedi-Moghadam, M., Lotfi, M., Jalli, R., Iravani, V. “Magnetic Resonance Spectroscopy and its Clinical Applications: A Review,” *J Med Imaging and Rad Sciences* **48**(3): 233-253 (2017)
 27. Mortazavi, S.M.J., Mostafavi-Pour, Z., Daneshmand, M., Zal, F., Zare, R., Mosleh-Shirazi, M.A. “Adaptive response induced by pre-exposure to 915 MHz radiofrequency: A possible role for antioxidant enzyme activity,” *J Biomedical Physics Engineering* **7**(2):137-142 (2017)
 28. Fardid, R., Salajegheh, A., Mosleh-Shirazi, M.A., Sharifzadeh, S., Okhovat, M.A., Najafi, M., Rezaeyan, A., Abaszadeh, A. “Melatonin ameliorates the production of COX-2, iNOS, and the formation of 8-OHdG in non-targeted lung tissue after pelvic irradiation,” *Cell Journal* **19**(2):324-331 (2017)
 29. Zeinali-Rafsanjani, B., Mosleh-Shirazi, M.A., Haghghatafshar, M., Jalli, R., Saeedi-Moghadam, M. “Assessment of the dose distribution of Minibeam radiotherapy for lung tumors in an anthropomorphic phantom: A feasibility study,” *Technol Health Care* **25**(4):683-692 (2017)
 30. Zeinali-Rafsanjani B, Faghihi R, Mosleh-Shirazi MA, Mosalaei A, Hadad K. “Revision of orthovoltage chest wall treatment by Monte Carlo simulations,” *Technol Health Care* **25**(3):413-424 (2017)
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CONFERENCE TALKS AND POSTERS:

1. MA Mosleh-Shirazi, "Medical Physics in Iran," *Association of Iranian Medical Physicists (North America) webinar* (2020) (invited)
2. MA Mosleh-Shirazi, "IGRT: Targeting cancer with safety," *IMRT Indications, Uncertainties and Concerns Seminar*, Mashhad, Iran (2019) (invited)
3. MA Mosleh-Shirazi, "Imaging-based accuracy requirements and uncertainties in radiotherapy," *First IMRT Seminar*, Erfan Niayesh Hospital, Tehran, Iran (2019) (invited)
4. MA Mosleh-Shirazi, "Role of QA in Radiotherapy," *IAEA IMRT Workshop*, Tehran, Iran (2019) (invited)
5. MA Mosleh-Shirazi, "Radiobiological Modelling of the Probability of Normal Tissue Damage in Radiotherapy," *Third Int. Clinical Oncology Congress*, Tehran, Iran (2018) (invited)
6. MA Mosleh-Shirazi, "Feasibility of Ion Therapy in Iran," *First Seminar on the Status & Emerging Role of Particle Therapy in Oncology*, Tehran, Iran (2018) (invited)
7. MA Mosleh-Shirazi, "Recent advances in radiotherapy of female-specific cancers." *7th Int. Conference on Women's Health*, Shiraz, Iran (2018) (invited)
8. MA Mosleh-Shirazi, E Fathipour, M Ansari; M Mohammadianpanah, MR Sasani, P Jafari, SH Hamed, MR Sasani, H Nasrollahi, A Mosalaei, S Omidvari, N Ahmadloo, A Amraee. "Acute esophagitis and swallowing dysfunction in head-and-neck radiotherapy: Evaluation of dose-response and NTCP model parameters," *World Congress on Medical Physics and Biomedical Engineering*, Prague, Czech Republic, 1055 (2018)
9. M.A. Mosleh-Shirazi, "The role of imaging in modern radiotherapy methods," *National Conference of Radiological Sciences*, Rafsanjan, Iran (2018) (invited)
10. N Shahsavani; MA Mosleh-Shirazi; Sh Omidvari; A Abolhasani Foroughi; B Zeinali Rafsanjani; H Nasrollahi; M Mohammadianpanah; A Mosalaei; N Ahmadloo; M Ansari; AE Nahum. "Chest-wall irradiation by kilovoltage x-rays: Observed local control rate versus predicted radiobiological tumor control probability," *12th Iranian Congress of Medical Physics*, *Ir. J. of Med. Physics* **15** (Suppl) 466, 10.22038/IJMP.2018.13158 (2018)
11. H Abdollahi; MA Mosleh-Shirazi; SMJ Mortazavi; S Omidvari. "Comparing of different normal tissue complication probability models for plan evaluation of radical radiotherapy for esophageal cancer," *12th Iranian Congress of Medical Physics*, *Ir. J. of Med. Physics* **15** (Suppl) 199, 10.22038/IJMP.2018.12816.12793 (2018)
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14. B Zeinali-Rafsanjani; MA Mosleh-Shirazi; R Faghihi; M Saeedi-Moghadam; R Jalli. "Discrepancies in dose distributions due to age-dependent bone electron density in pediatric MRI-only treatment planning: A Monte Carlo study," *12th Iranian Congress of Medical Physics, Ir. J. of Med. Physics* 15 (Suppl) 333, 10.22038/IJMP.2019.12987 (2018)
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