



Prof. Dr. Asaad Hamid Ismail

PhD/MSc (Radiation and Medical Physics)

Physics Department/ Salahaddin University–Erbil

Kurdistan Region

Erbil



Work and Office address:

Chairman of Physics Department

Salahaddin University –Erbil

Mobile: 009647504600048

E-mail: asaad.ismail@su.edu.krd

ORCID: [0000-0002-6308-5641](https://orcid.org/0000-0002-6308-5641)

Scopus Author ID: [34869716200](https://scopus.org/authorid/34869716200)

Website:

Academic Qualifications:

Personal profile

Grab the reader's attention: Highly researches in medical physics professional seeking a challenging role in the scientific research. Radiological researches where my education and experience will add significant value in medical physics. Proven track of research in radiation and medical physics, radiation pollution (radon /thoron), and biomedical radiation physics development has been recorded. Excellent interpersonal skills with the ability to develop relationships with key opinion leaders and multiple stakeholders across diverse scientific disciplines recorded

Company and job title

Company: Salahaddin University-Erbil

1997 - Present

Job Title: Professor

M.Sc & PhD (Radiation and Medical Physics)

Department of Physics / Education College / Salahaddin University –Erbil

Education

- 1) **PhD Radiation in Medical Physics, School of Physics , Universiti Sains Malaysia, Penang, Malaysia
2008 - 2011**

“Title of Project”

ALPHA PARTICLES DEPOSITION AND ITS EFFECTS ON LUNGS, MALE INFERTILITY AND BLOOD COMPONENTS

, Supervisor: **Prof. Dr. Mohamad Suhaimi Jaafar**

Outline of the Thesis

The thesis covers risk evaluation of alpha particle deposition on lung cancer, male infertility, and human blood using new irradiation and exposure techniques. It comprises of nine chapters, classified according to the subjects. Chapter 1 presents an introduction and overview of this thesis. Chapter 2 presents the literature review and previous research on radon inhalation, CR-39 NTDs, deposition of alpha particles on blood, and the effects of deposition of radon's daughter ions in rabbit's lungs. Chapter 3 describes the mechanism of track formation of CR-39 NTDs, while Chapter 4 presents the mechanism of the interaction of alpha particles with the tissues. Chapter 5 presents the calibration of CR-39 NTDs, fabrication of an alpha irradiation collimator, and selection of an optimum radon dosimeter. Chapter 6 describes the evaluation of the risks of deposition of alpha particles on human lungs and male infertility. Chapter 7 presents the risk evaluation of alpha particle deposition on the surface of human blood samples. Chapter 8 describes the preliminary study on the effects of radon inhalation on lungs, trachea, and testes of male rabbits. Finally, Chapter 9 draws the conclusion and future works.

2) **M.Sc Radiation Physics** , Physics Department , Science Education College, University of Salahaddin-Hawler, Erbil, Iraqi Kurdistan, Iraq **2001 - 2004**

3) **BSc Physics**, Physics Department , Science Education College, University of Salahaddin-Hawler, Erbil, Iraqi Kurdistan, Iraq **1992 – 1996**

Academic memberships

- 1) Association of American Medical Physics (AAMP) (USA) (Member)
- 2) International Union of Radioecology (IUR) (European Union) (Member)
- 3) Scientific and Technical Committee & Editorial Review Board member / World Academy of Science, Engineering and Technology organization / USA (Member)
- 4) American Chemical Society (ACS) (Member) UAS
- 5) Kurdistan Physicist's Syndicate (Member)

Teaching and advising:

Supervisor for 7 Ph.D. candidates, and 3 M.Sc. candidates Salahaddin University –Erbil . As well as, Scientific review has done by me for more than 200 (during 2013-2024) scientific researches, books and articles for the following journals and organizations

- 1) Environmental science and pollution research (International journal) , Springer
- 2) Immunobiology /IMBIO (International journal) , Elsevier
- 3) Science Journal of Public Health (International journal) , Science PG
- 4) British Journal of Medicine and Medical Research (International journal), ScienceDomain
- 5) Faculty of science and health / Koya University (University)
- 6) Journal of Scientific Research and Reports (International journal), ScienceDomain
- 7) Advanced Research material Journal (International Journal) , Elsevier

Publications:

International Journals (Prior review papers and International Conferences proceeding)

- 1) **Ismail A H** . (2009). Study of change in the efficiency of CR-39 after storage for different product companies by using TRACK_TEST program. Nuclear Instruments and Methods in Physics Research B 267, p.3209–3213.
- 2) **Ismail A H**, Jaafar M S. (2010). Relationship between radon concentration, ventilation rate and male infertility: A Case study in Iraqi Kurdistan. Int. J. Low Radiation. 7(3) p.175-187.
- 3) **Ismail A H**, Jaafar M S. (2010). Modification of Human Blood Irradiation Technique with the Radon Gas: In vitro Study , Journal of Nuclear and Related Technologies, Vol. 7, No. 2,p.24-37.
- 4) **Ismail A H**, Jaafar M S. (2011). Interaction of low-intensity nuclear radiation dose with the human blood: Using the new technique of CR-39NTDs for an in vitro study. Applied Radiation and Isotopes. 69 p.559-566.
- 5) **Ismail A H**, Jaafar M S. (2011). Design and construct optimum dosimeter to detect airborne radon and thoron gas: experimental study. Nuclear Instruments and Methods in Physics Research B. 269 p437-439.

- 6) **Ismail A H**, Jaafar M S, Hend A A Sultani , Farhad H M.(2011). The impact of exposing human blood samples to the radon gas on Platelet count: Using new Exposure Technique. Biophysical Reviews and Letters Vol.6, Nos. 1&2, p.81-92.
- 7) **Ismail A H**, Jaafar M S. (2011). Design a Radon Exposure Technique for Risks Evaluation of Radon's Progenies Accumulation on the Platelet and Red Blood Cells. International Journal of Applied Physics and Mathematics Vol. 1, No. 1, p.28-32.
- 8) **Ismail A H**, Jaafar M S. (2011). Assessment of Inhalation and Ingestion Doses from Exposure to Radon Gas using Passive and Active Detecting Techniques, Transactions on Nuclear Science (TNS). In press.
- 9) **Ismail A H**, Jaafar M S. (2012). Impact Deposition of Radon Progeny (218Po ,214Po &210Po) on the Surface of Human Blood: Invitro Study. Applied Mechanics and Materials Vols. 110-116 ,p. 2004-2009 .
- 10) Farhad H M, Jaafar M S, **Ismail A H**. (2011). Control Light Delivery in PDT by Taking Account the Optical Properties of Hair Density on the Skin Surface. Journal of Modern Applied Science. 2 p.325-331.
- 11) Farhad H M, Jaafar M S, **Ismail A H**. (2010), Photodiagnosis and Photodynamic Therapy, Vol.7, p.S37
- 12) Farhad H. Mustafa, Mohamad S. Jaafar , **Asaad H. Ismail**, Ahamad F. Omar, Zahra A. Timimi and Hend A. A. Houssein. (2010).Red Diode Laser in the Treatment of Epidermal Diseases in PDT. Journal of World Academy of Science, Engineering and Technology. Vol.70, pp. 780-783
- 13) Zakariya A. Hussein, Mohamad S. Jaafar, **Asaad H.Ismail** (2013). International Journal of Scientific & Engineering Research, Vol.4, Issue 9.
- 14) Zakariya A. Hussein, Mohamad S. Jaafar, **Asaad H.Ismail** (2013).[Measurement of indoor radon concentration levels and its Risks inside Hospitals in Iraqi Kurdistan Region: Case Study in Autumn Season.](#) Online Journal of Physical and Environmental Science Research, Vol.2, Issue1, pp.1-6
- 15) Hend Abubaker Houssien, Mohamad Suhaimi Jaafar, Zahra Al Timimi, Farhad Mustafa, **Asaad H.Ismail**, Zalila Ali (2011). [Influence of Low Power He-Ne Laser Irradiation on Hemoglobin Concentration, Mean Cellular Volume of Red Blood Cell, and Mean Cellular Hemoglobin.](#)Jurnal Sains Kesihatan Malaysia (Malaysian Journal of Health Sciences).Vol.9, Issue 2.
- 16) **Ismail A H**, Jaafar M S, Hend AA Houssein and Farhad H. Mustafa (2011). [The Impact of Exposing Human Blood Samples to the Radon Gas on the platelet count: using new exposure technique.](#) Biophysical Reviews and Letters. Vol.6, Issue 01n02. Pp.81-92.
- 17) **Asaad Hamid Ismail** (2015). [Influence of Radiation Doses on the Ratio of Blast Cells, Lymphocytes and Neutrophils inside Blood Samples of Leukaemia Patients: In vitro.](#) Zanco Journal of Pure and Applied Sciences . Vol.27, Issue.3, pp.65-74
- 18) Farhad H. Mustafa, Mohamad S. Jaafar , **Asaad H. Ismail** (2014). [Comparison of Alexandrite and Diode Lasers for Hair Removal in Dark and Medium Skin: Which is Better?.](#) Journal of lasers in medical sciences, Vol.5, Issue 4, pp. 188-193.
- 19) Zakariya A. Hussein, Mohamad S. Jaafar, **Asaad H.Ismail** (2013). [Measurements of Indoor Radon-222 Concentration inside Iraqi Kurdistan: Case Study in the Summer Season.](#) Journal of Nuclear Medicine & Radiation Therapy. Vol.4, Issue 143. Pp.2
- 20) Zakariya A. Hussein, Mohamad S. Jaafar, **Asaad H.Ismail** (2013). [Measurement of Indoor Radon Concentration Levels in Iraqi Kurdistan Region,](#) World Applied Sciences Journal. Vol.26, Issue 5, pp. 657-661
- 21) **Asaad H Ismail**, Muhamad A Hamad, Edrees MT Harki (2012). [Radiation Exposure of Leukemia Blood Samples and Its Impacts on the Density of RBC, WBC, and PLT: In Vitro.](#) Open Journal of Biophysics, Vol. 2 No. 4 ,pp. 130-136
- 22) Sardar P Yaba, **Asaad H. Ismail** ,Runak T. Ali, and Hewa H. Aziz (2015).Radiological Protection of Operators and Auditors as a Result of CT Scan Radiation Leakage: Iraqi Kurdistan Hospitals. Zanco Journal of Pure and Applied Sciences Vol.27, No.6, pp.12-20
- 23) Zekarya A.Hussein , **Asaad H. Ismail** , Ammar A. Abdullah , and Haubash H. Hamadameen (2016). Indoor radon levels in apartments of Erbil city by using long and short term techniques . Tikrit Journal of pure sciences , Vol.21, No.3, pp.8-16
- 24) **Asaad H. Ismail** (2016). Estimation Annual Exposure of Radiation Dose inside Hospitals and Health Centres of Kurdistan Region and its Impact on Health of Workers and Patients. Zanco Journal of Pure and Applied Sciences . Vol.28. No.1, p.32-29.
- 25) **Ismail A H**, Mansur H. H. (2004). Measurement of Radon Activity Concentration In Iraqi-Kurdistan Soil By Using CR-39 Plastic Track Detectors. Proceedings of the 22 International Conference on Nuclear Tracks In Solid (Spain –Barcelona) .
- 26) **Ismail A H**,(2006) STUDY OF INDOOR RADON /THORON AND ITS HAZARDS INSIDE KINDERGARTENS IN IRAQI KURDISTAN USING CR-39 NUCLEAR TRACK DETECTORS, Proceedings of the 2nd Environmental Physics Conference, 18-22 Feb. 2006, Alexandria, Egypt
- 27) **Ismail A H**, Hussyin Z A.(2007).STUDY OF SEASONAL VARIATIONS OF RADON LEVELS AND ITS RISKS INSIDE DIFFERENT SCHOOLS IN IRAQI KURDISTAN REGION FOR THE FIRST TIME. Proceedings of the 10th International Conference Environmental Science and Technology 5-7 September -Cos island, Greece. Pp..B305-B312.
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- 31) **Ismail A. H.**, Jaafar M. S., (2010), Indoor radon concentration and its health risks in selected locations in Iraqi Kurdistan using

- CR-39 NTDs, The 4th International conference on Bioinformatics and Biomedical Engineering (iCBBE 2010) , June 18-20, 2010, Chengdu-Chain. 978-1-4244-4713-8/10/©2010 IEEE. (Prior review paper)
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 - 33) **Ismail A. H.**, Jaafar M. S., (2010), Assessment of Inhalation and Ingestion Doses From Exposure to Radon Gas Using CR-39 Nuclear Track Detectors, 16th International Solid State Dosimetry Conference, 15th to 24th September 2010, Sofitel, Sydney-Australia (Abstract Only) .
 - 34) **Ismail A. H.**, Jaafar M. S., (2010), Soil Radioactivity Levels and Radiation hazard Assessment in the selected Locations in Iraqi Kurdistan using Passive Detecting Method, International Conference on Nuclear Data for Science and Technology , 26 – 30 April 2010 ,Jeju Island, Korea(Abtract only)
 - 35) **Ismail A. H.**, Jaafar M. S., (2010) ,The Impact of Alpha Particles on Platelets and Thrombocytopenia: a New Technique for In vitro Study, 7th IMT-GT UNINET and the 3rd Joint International PSU-UNS Conferences, Prince of Songkla University, October 7-8, 2010 ,Thailand . (Prior review papers)
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 - 39) **Ismail A. H.**, Jaafar M. S., Farhad H. M.,(2011). Design New Detection Technique for Deposition of Radon's Daughter onto Human Blood Samples. 2011 IEEE International Conference on Imaging Systems and Techniques (IST 2011) Proceedings
 - 40) Farhad H. Mustafa , Mohamad S. Jaafar, **Asaad H. Ismail**, Ahamad Omar, Zahra Timimi and Hend Houssein.(2010). Influences of different laser power at wavelength 635 nm for two types of skin; dark and light. 7th IMT-GT UNINET and the 3rd Joint International PSU-UNS Conferences. October 7-8 Thailand
 - 41) Farhad H. Mustafa, Mohamad S. Jaafar , **Asaad H. Ismail**, Ahamad F. Omar, Zahra A. Timimi and Hend A. A. Houssein. (2010).Red Diode Laser in the Treatment of Epidermal Diseases in PDT. International Conference on Biomedical Engineering Systems and Technologies. Journal of World academic science, Engineering and technology 70
 - 42) Farhad H. Mustafa, Mohamad S. Jaafar , **Asaad H. Ismail**, Ahamad F. Omar and Hend A. A. Houssein. (2011).Influence of hair color on photodynamic dose activation in PDT for scalp diseases. International conference on Biomedical technology.Kuala Lumpur–Malaysia
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 - 44) **Ismail A. H.**, Jaafar M. S., (2009), Determination of radon and thoron density in selected locations that have different ratio of male infertility in Iraqi Kurdistan, National Physics Conference ,Avillion Legacy Hotel, Malacca, Malaysia, 7- 9 December 2009 (Abstract Only).
 - 45) **Ismail A. H.**, Jaafar M. S., (2010), Modification of Human Blood Irradiation Technique with Radon Gas: An In vitro Study, Malaysian Nuclear Sciences, Technology and Engineering Conference 2010 (NuSTEC2010), 4–5August 2010, UNITEN, SELANGOR, Malaysia
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 - 49) Hiwa H. Aziz ,Jahfer M. Smail, **Asaad. H. Ismail**, and Hawbash H. Karim,(2015),Asses of Indoor Radon Dose and its Risks on children's Health using Track Detectors: Case Study in Koya Kindergartens. Journal of Kerbala University , Vol. 13 No.2 ,106-113.
 - 50) Sardar P Yaba, **Asaad H. Ismail**, Runak T. Ali, and Hewa H. Aziz, (2016) , Radiological Protection of Operators and Auditors as a Result of CT Scan Radiation Leakage: Iraqi Kurdistan Hospitals, Zanco Journal of Pure and Applied Sciences , Vol.28, No.1,43-38.
 - 51) Asaad Hamid Ismail, Detection of radioactivity for some materials that used in construction and for some area that was exposed to the weapons of depleted uranium and estimating its health risks, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Vol. 1016, 2021,
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- radiation doses on the operators of X-ray and CT-scan in some Erbil hospitals, *Radiation Physics and Chemistry*, Vol.184, 2021, 109466.
- 53) Asaad Hamid Ismail, Edrees Muhammad Tahir, Demonstrating a relationship between ethnics, radionuclide activity, and the element contents in the tooth samples using HPGe detector and XRF technique, *Applied Radiation and Isotopes*, Vol.180, 2022.
 - 54) Asaad H. Ismail, Zakariya A. Hussein, Sardar P. Yaba, Investigation a relation between radioactivity concentrations of 40 Potassium (40K) in tooth and the various ethnic groups and its impacts on the rate of tooth damage, *Environmental Nanotechnology, Monitoring & Management*, Vol.14, 2020,
 - 55) A. H. Ismaila, *, Z. A. Husseinb, and D. H. Aladdin, Measurement of Natural Radioactivity in Samples of Beach Sands (Rivers and Lakes) in the Iraqi Kurdistan Region, *Radiochemistry*, 2021, Vol. 63, No. 3, pp. 389–394. © Pleiades Publishing, Inc., 2021.
 - 56) MUSTAFA, B. T., YAB, S. P. & ISMAIL, A. H. Impacts of materials on the intensity of uniform static magnetic fields using a multi Helmholtz coils design. *AIP Conference Proceedings*, 2020. AIP Publishing LLC, 020063.
 - 57) MUSTAFA, B. T., YABA, S. & ISMAIL, A. H. Impacts of In Vivo Exposure Static Magnetic Field to Blood Viscosity. *Materials Science Forum*, 2020. Trans Tech Publ, 369-378.
 - 58) MUSTAFA, B. T., YABA, S. P. & ISMAIL, A. H. Experimental Evaluation of the Static Magnetic Field Effect on White Blood Cells: In Vivo Study. *Materials Science Forum*, 2020. Trans Tech Publ, 412-419.
 - 59) MUSTAFA, B. T., YABA, S. P. & ISMAIL, A. H. 2020d. Influence of the static magnetic field on red blood cells parameters and platelets using tests of CBC and microscopy images. *Biomedical Physics & Engineering Express*, 6, 025004.
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 - 61) Ismail A H., and Tahir E M., (2022). Demonstrating a relationship between ethnics, radionuclide activity, and the element contents in the tooth samples using HPGe detector and XRF technique. *Applied Radiation and Isotopes* 180, 110036
 - 62) Ismail A H., (2021) Detection of radioactivity for some materials that used in construction and for some area that was exposed to the weapons of depleted uranium and estimating its health risks. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*. Vol.1016. pp.165729
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 - 64) Ismail A H., Hussein Z A., Aladdin D H., (2021) Measurement of Natural Radioactivity in Samples of Beach Sands (Rivers and Lakes) in the Iraqi Kurdistan Region. *Radiochemistry* 63 (3), 389-394
 - 65) Ismail A H., Hussein Z A., Yaba S P., (2020). Investigation a relation between radioactivity concentrations of 40 Potassium (40K) in tooth and the various ethnic groups and its impacts on the rate of tooth damage. *Environmental Nanotechnology, Monitoring & Management* 14, 100385
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IMPACTS ON THE INHIBITION RATE OF CELL GROWTH. MEDICINE 102 (3)

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- 74) D Aladdin, AH Ismail, AH Taha, ZA Hussein. Measurement of the trace element concentration in some livestock and poultry bone samples using X-ray fluorescence. Journal ZANCO Journal of Pure and Applied Sciences 34 (4), 67-73
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- 77) Asaad H Ismail, Ali H Alomari, Saeed M Al-Qahtani, Talal A Alnaemi, Bestoon T Mustafa, (2023). Assessment of environmental radiological hazards associated with elevated levels of radon gas in drinking water, Journal of Radiation Research and Applied Sciences, Vol.16, Issue4, Pages 100673
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