

PERSONAL HISTORY

1. Personal Data

C.V of the Professor. Ismail Youssef Shaaban (as in Passport)	
First name	Ismail
Family (Surname) name	Shaaban
Father name	Youssef
Mother name	Khadijeh
Birth date	(Day/Month/Year) 05/04/1968
Birth place	Tartous
Sex	Male

2. Additional Data

Nationality	Syrian
Languages	Arabic, English and Russian
Telephone and WatsApp	00963988359658
E-mail address	Shaabanismail84@gmail.com
Present Address	Syria- Tartous university – Scientific faculaty – Physics department

3. Education

Years attended		Name and place of institution	Field of study	Scientific certificate
From	To			
1987	1992	Syria - Teshreen University - Lattakia	Physics & Mathematical Sciences	BSc
1993	1994	Syria - Aleppo University - Aleppo	Diploma in Physics	Diploma
1997	2003	Ukraine - Odessa National Polytechnic University (Nuclear Energy Institute)	Nuclear Physics, Atomic Particles And High-Energy Physics	Ph.D

4. Past (previous) scientific position (employment) record

Years of service		Name and place of employer / organization	Type of work	Scientific degree
From	To			
21/5/2017	1/11/2018	Syrian Atomic Energy Commission, department of nuclear engineering	Nuclear physics, Reactors physics and radioactive wastes disposal	Professor
23/4/2012	21/5/2017	Syrian Atomic Energy Commission, department of nuclear engineering	Nuclear physics, Reactors physics and radioactive wastes disposal	Assistant professor
31/7/2003	23/4/2012	Syrian Atomic Energy Commission, department of nuclear engineering	Nuclear physics, Reactors physics and radioactive wastes disposal	Research

1

5. Past (previous) administrative position (employment) record

Years of service		Name and place of employer / organization	Type of work
From	To		
1/1/2014	1/11/2018	Syrian Atomic Energy Commission, department of nuclear engineering	Head of the reactors physics section
1/1/2014	1/11/2018	Syrian Atomic Energy Commission, department of nuclear engineering	Member of the nuclear engineering department

6. Recent scientific position (employment) record

Years of service		Name and place of employer / organization	Type of work	Scientific degree
From	To			
1/11/2018	now	Tartous university – Scientific faculty – Physics department	Lecture	Lecture

7. Recent administrative position (employment) record

Years of service		Name and place of employer / organization	Type of work
From	To		
1/11/2018	now	Tartous university – Scientific faculty – Physics department	Member of the physics department

8. The scientific and practical materials that I teaching it in the physics department - Science faculty - Tartous University

Years of service	Name and place	Name of material	Course
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From	To			
1/11/2018	now	Tartous university - Scientific faculty - Physics department	1. Nuclear physics and Atomic Particles 2. Radiation physics 3. Nuclear physics 4. Computational physics	1. Master 2. Third year physics students 3. Third year physics students 4. Third year physics students

9. Scientific researches carried out in the Syrian Atomic Energy Commission, department of nuclear engineering.

1. **Ismail Shaaban.** The Effect of Cadmium Shielding on the Spatial Neutron Flux Distribution Inside one of the Outer Irradiation Sites. AECS - NE \ FRSR 430. June 2009
2. **Ismail Shaaban.** Using the MCNP-4C code for Design of the Thermal Neutron Beam for Radiography at The MNSR. AECS- NE\RSS 846 . November 2009.
3. **Ismail Shaaban and Nasseem Assi.** Improvement of the Syrian Concrete Used in the Storage of Low Level Radioactive Wastes and Long Half-Live. AECS - NE \ FRSR 453. March 2010.

2

4. **Ismail Shaaban.** Using the MCNP-4C code to study the thermal neutron flux distribution inside a capsule from epoxy and boron carbide for using it in an epithermal neutron activation analysis ENAA in the Syrian MNSR. AECS - NE \ RSS 922. April 2011.
5. **Ismail Shaaban.** Using the MCNP-4C code of the MNSR Reactor Shielding and Design of the Horizontal Thermal Neutron Beam for Neutron Radiography. AECS - NE \ RSS 975. May 2012.
6. **Ismail Shaaban and Mouhamad Albrahuom.** Neutronic calculations to establish an Epithermal Beam for BNCT (Boron Neutron Capture Therapy) at the MNSR using the MCNP4C code. AECS - NE \ FRSR 548. February 2013.
7. **Ismail Shaaban.** Neutronic calculations to establish an epithermal and thermal neutronic beam for BNCT (Boron Neutron Capture Therapy) neutron radiography at the Syrian accelerator using MCNPX and MCNP5-beta code. AECS - August 2013.
8. **Ismail Shaaban and Mouhamad Albrahuom.** Neutronic calculations to establish an Epithermal Beam for BNCT (Boron Neutron Capture Therapy) at the MTR-22 MW using the MCNP5-beta code. AECS -September 2015.
9. **Ismail Shaaban and Mouhamad Albrahuom.** Loading of the MTR- 22 MW reactor by UO₂ and MOX fuel with minor actinides as a consumable absorber. AECS - September 2016.

10. Continuing scientific researches in the Syrian Atomic Energy Commission, department of the nuclear engineering.

1. **Ismail Shaaban and Mouhamad Albrahuom.** Loading of the research and power reactors with a mixture fuel (MOX) and minor actinides.

11. List of Publications

A. List of Publications (PhD Period)

- 1. Rusov V.D., Zelentsova T. N., Taracov V. A, I. Shaaban.** Precision method for the determination of neutrino mixing angle. **PROBLEMS OF ATOMIC SCIENCE AND TECHNOLOGY.** № 6(1), p. 157-160. 2001, Ukraina.

3

- 2. Rusov V.D., Tarasov V.A., Tereschenko D.A., I. Shaaban.** About one reverse task of neutrino diagnostics of inside-reactor processes. The Journal of Kharkov National University, Vol. 559, **Physical series “Nuclear, Particles, Fields”.** Issue 2/18/2002, p 22 – 27, 2002.
- 3. Rusov V.D.; Tarasov V.A; Litvinov D.A.; Shaaban. I.** Inverse problem of neutrino diagnostics of in reactor processes. **Atomic Energy**, Volume 95, Number 6, December 2003 , pp. 809- 819(11), 2003, Russia.
- 4. Rusov V.D., Tarasov V.O., Litvinov D.O., Shaaban. I.Yu.** The Inverse Problem of Distant Neutrino Diagnostics of Inter Reactor Processes. **Ukra. J. Phys.** V. 49, N 8. p 734-742, 2004, Ukraina.
- 5. Rusov V.D., Shaaban I.** Statistics of electron antineutrino detection and inverse problem of the neutrino diagnostics of inside-reactor processes and fuel-contain bulks. Bondartchuk Yu.A. **International Youth Nuclear Congress. – Daejeon (South Korea).** P. 156, 2002.
- 6. Tarasov, V A ; Shaaban, I.** Neutrino remote diagnostics of in-reactor processes. Published in: **Âd. Radiac. Bezop:** 5, no. 2, pp. 61-68, 2002, Ukraina.
- 7. Rusov V.D., Tarasov V.O., Litvinov D.O., I.Yu. Shaaban.** The Inverse Problem of Distant Neutrino Diagnostics of Inter Reactor Processes. **Nuclei, Nuclear Reactions.** Odessa National Polytechnic University. 2004.
- 8. Rusov, V.D., Tarasov, V.O., I. Shaaban.** The Inverse Problem of Distant Neutrino Diagnostics of Inter Reactor Processes. **Vopr. At. Nauki Teh., Fiz. Radiac. Povrezd. Radiac. Materialoved.** 3, pp.133-141, 2002, Ukraina.
- 9. Русов В.Д., Зеленцова Т.Н., Тарасов В.А., Шаабан И.** Статистика и спектр электронных антинейтрино. “Вестник Харьковского университета”. **Сер. Ядра, поля, частицы.**- ВІП 4/16/2001, ТОМ 541, № 1, С. 3 – 9, 2001, Ukraina.
- 10. Русов В.Д., Зеленцова Т.Н., Тарасов В.А., Шаабан И.** Об одной обратной задаче нейтринной диагностики внутриреакторных процессов. “Вестник Харьковского университета”. **Сер. Ядра, поля, частицы.** № 2, С. 22 -27, 2002. Ukraina.

B. List of Publications (Period of working at the Syrian Atomic Energy Commission) 1.

Ismail Shaaban. Design of a permanent epithermal neutron irradiation site in the Syrian MNSR, **Progress in Nuclear Energy** 52 p. 569–572, 2010.

4

- 2. Ismail Shaaban.** Design of the thermal neutron beam for neutron radiography at the Syrian MNSR, **Annals of Nuclear Energy** 37 p. 1588–1594, 2010.
- 3. Ismail Shaaban and Nasim Assi.** Determination of the Leaching Rate of Radionuclide ^{134}Cs from the Solidified Radioactive Wastes in Syrian Portland Cement and Cement-Microsilica Matrixes, **J. Radioanalytical Nuclear Chemistry**. 285:p. 441–446, 2010.
- 4. Ismail Shaaban and Nasim Assi.** Determination of the leaching late of ^{134}Cs from the immobilized low-level radioactive sources in the cement and cement mixed with dolomite grains and with natural pozzolan powder, **Progress in Nuclear Energy** 53, p. 499 – 503, 2011.
- 5. Ismail Shaaban and Nasim Assi.** Measurement of the leaching rate of radionuclide ^{134}Cs from the solidified radioactive sources in Portland cement mixed with microsilica and barite matrixes, **Journal of Nuclear Materials** 415, p. 132–137, 2011.
- 6. Ismail Shaaban.** Design of boron carbide-shielded irradiation site of the outer irradiation site of the Syrian MNSR using MCNP. **Annals of Nuclear Energy**, 51, p. 227–234, 2013.
- 7. Ismail Shaaban.** Design calculation of a horizontal thermal neutronic beam for neutron radiography at the Syrian MNSR, **J. Radioanalytical Nuclear Chemistry**. 301, p.41–48, 2014.
- 8. Ismail Shaaban and Mohamad Albarhoum.** Design calculation of an epithermal neutronic beam for BNCT at the Syrian MNSR using the MCNP4C code, **Progress in Nuclear Energy** 78, p. 297–302, 2015.
- 9. Ismail Shaaban and Mohamad Albarhoum.** Minimizing MTR reactor uranium load with the use of MOX fuel by employing ORIGEN-S and MCNP4C codes, **Annals of Nuclear Energy**, 83, p. 34–40, 2015.
- 10. Ismail Shaaban and Mohamad Albarhoum.** Study of criticality safety and neutronic parameters of UO_2 fuel in MTR research reactors using the MCNP4C code. **Annals of Nuclear Energy**, 98, p. 144–156, 2016.
- 11. Ismail Shaaban and Mohamad Albarhoum.** Neutronic calculations of the MTR-22 MW research reactor loaded with MOX (PuO_2 & UO_2) Caramel fuel using the MCNP5 Code. **Annals of Nuclear Energy**, 94, p. 478–886, 2016.
- 12. Ismail Shaaban and Mohamad Albarhoum.** Performance of the MTR core with MOX fuel using the MCNP4C2 code. **Applied Radiation and Isotopes**, 114, p. 92–103, 2016.
- 13. Ismail Shaaban and Mohamad Albarhoum.** Burning of the Minor Actinides in Fuel Cycle of the MTR-Reactors. **Annals of Nuclear Energy**, 100, p. 119–127, 2017.

5

- 14. Ismail Shaaban.** Conceptual Design of a Thermal Neutron Radiography Facility in the Cyclotron 30 LC Using the MCNPX Code. **Indian Journal of Pure & Applied Physics**. Vol. 55, February 2017, pp. 135-144.

15. **Ismail Shaaban and Mohamad Albarhoun.** A computational study of re-cycling the MTR research reactors with MOX fuel mixed with ^{241}Am , ^{242}Am and ^{243}Am as burnable absorbers actinides using the MCNP4C code. **Annals of Nuclear Energy**, 109, p. 626–634, 2017.
16. **Ismail Shaaban and Mohamad Albarhoun.** The use of MOX caramel fuel mixed with ^{241}Am , $^{242\text{m}}\text{Am}$ and ^{243}Am as burnable absorber actinides for the MTR research reactors. **Applied Radiation and Isotopes**, 125, p. 188–195, 2017.
17. **Ismail Shaaban and Mohamad Albarhoun.** Optimization of the epithermal neutronic beam for BNCT at the Egyptian MTR-22 MW reactor, **Applied Radiation and Isotopes**, 125, p. 188–195, 2021.

C. Scientific papers published in the refereed Damascus University Journal for the Basic Sciences

1. **Hasan. S, Nahili. M and Shaaban. I.** Thermal neutron beam design based on $^9\text{Be}(p,n)^9\text{B}$

reaction for neutron radiography using MCNPX and MCNP5-BETA codes.

Damascus University Journal for the Basic Sciences, V(30), N (1), 2014.

2. **Abo-Shdeed. T, Nahili. M and Shaaban. I.** Calculation of the Photons and Neutrons Intensity From the Reaction $^9\text{Be}(p,n)^9\text{B}$ in the Syrian Cyclotron Accelerator using MCNPX and MCNP5C codes. **Damascus University Journal for the Basic Sciences**, V(29), N (2), 2013.

D. Scientific papers published in the refereed Tartous University Journal of the Research and Scientific Studies.

1. **Ismail Shaaban.** Re-fueling the actinides ^{239}Pu , ^{241}Am and ^{243}Am as burnable absorbers in the MTR-22 MW research reactor. **Tartous University Journal for Research and Scientific Studies**. V (3), N (3), 2019.
2. **Ismail Shaaban.** Re-fueling of the UO_2 Caramel Fuel in the MTR -22MW Reactor. **Tartous University Journal for Research and Scientific Studies**. V (4), N (1), 2020.
3. **Ismail Shaaban.** Re-fueling of the MOX Caramel Fuel mixed with ^{237}Np Oxide in the MTR - 22MW Reactor. **Tartous University Journal for Research and Scientific Studies**. V (5), N (1), 2021.
4. **Ismail Shaaban.** Simulation of the Low-Power Research MNSR Reactor by Using the MCNP 4C2 code. **Tartous University Journal for Research and Scientific Studies**. V (6), N (4), 2022.

6

5. **Ahmad Beishany, Ismail Shaaban and Heba maana.** Study of the Central and non-Central Forces Effects on the α -nucleous Energetic spectrum. **Tartous University Journal for Research and Scientific Studies**. V (4), N (4), 2021.
6. **Ismail Shaaban, Adnan Ahmad and Ahmad Mohmad,** Design of a cold neutrons beam at the TRIGA MARK_II _2MW reactor by using the code MCNP4C2. **Tartous University Journal for Research and Scientific Studies**. V (6), N (6), 2022.

12. Reviewer of scientific papers of the refereed international journals

1. **Two papers of the Annals of Nuclear Energy.** Manuscript Number: ANUCENE-D-11- 00033R1.

Title: Neutron flux determination in irradiation sites of an Am-Be neutron source at NNRI, 2001. **2. Manuscript Number:** ANUCENE-D-10-000398

Title: Feasibility study of photon – neutron flux in various irradiation channels sites of Ghana MNSR using a Monte Carlo code, 2011.

3. One paper of the Journal of Hazardous Materials. Manuscript Number: HAZMAT-D-12- 00869.

Title: Volatility and leachability of heavy metals and radionuclides in thermally treated HEPA filter media generated from nuclear facilities, 2012.

4. One paper of the Journal of Desalination and Water Treatment. Manuscript Number: ID TDWT-2014-2235.R109.

Title: Immobilization of radioactivity borate liquid waste by using natural diatomite, 2015.

13. Reviewer of scientific papers of the refereed Damascus University Journal for the Basic Sciences

1. Choosing the optimum fuel composition for the PWR-1150 reactor using the code Getera. Record number 496.
2. Assessing the Use of Advanced Fuel Assembly for VVER-1000 Reactor Based on Evaluating its Thermal Hydraulic Features. Record number 595. Date 15/5/2013.
3. Studying the enhance of fuel assembly designed development on the neutron flux prosperities of VVER-1000 nuclear reactor core. Record number 736.
4. Calculation of the reaction rate and energy response matrix of a neutron spectrometry consisting of a Polyethylene sphere of variable diameter and BF3 detector using the MCNP5-beta code. Record number 620. Date 23/9/2013.

7

5. Record number 741. Date 7/12/2014.
6. Development of a computer program for neutron design examples of an MTR-type research reactor. Record number 817. Date 19/8/2015.
7. Neutronic study for the conversion process of the IAEA MTR 10 MW from the highly enriched uranium (HEU) to the low enriched uranium (LEU). Record number 815. Date 2/11/2015.
8. The effect of heat on the propagation of radon gas and the speed of the ultrasonic pulse through local Portland cement concrete. Record number 896. Date of 4/24/2016.
9. A special form of the neutrino mass matrix. Record number 899. Date of 3/5/2016.
10. Improving the irradiation capabilities of the reference reactor MTR-10 MW Research No. F7/2017. Date of 27/4/2017.
11. Development of a computer program for design examples for a search reactor of type MTR in the environment of codes WIMS4D and CITATION, search number F13/2017. Date of 31/7/2017.
12. Use of the nuclear trace detectors CR-39 to verify the linear energy loss of alpha particles. Record number 862. Date 16/12/2015.

14. Reviewer of scientific papers of the refereed Tartous University Journal for Research and Scientific Studies

1. Study of the energy changes carried by the neutrino pair ($\nu \bar{\nu}$) generated as a result of the $\mu^+ \mu^- \rightarrow \nu \bar{\nu}$ outside the hot star medium. interaction ($\mu^+ \mu^- \rightarrow \nu \bar{\nu}$)

15. Associated supervisor of the master's students at Damascus University - Faculty of Science - Physics Department.

Thesis title.

1. Design of an Epithermal Neutronic Beam for BNCT (Boron Neutron Capture Therapy) at the Syrian Cyclotron using MCNP Code.
2. Design of the thermal neutron beam in the Syrian cyclotron for thermal neutron radiography using MCNP Code.

16. Supervisor of the master's students at Tartous University - Faculty of Science - Physics Department.

Thesis title.

8

1. Study of the Central and non-Central Forces Effects on the α -nucleous Energetic spectrum (with Dr. Ahmad Beishany).
2. A computational study for the design of a cold neutron beam in the TRIGA MARK II - 2MW reactor for use in cold neutron radiography using the code MCNP4C2.
3. Evaluation of the performance of UO_2 fuel in the MTR-22 MW research reactor.

17. Reviewer of master's Thesis (Damascus University - Faculty of Science - Physics Department).

1. The neutron and thermal design of the new generation high-safety reactor type WER-640. **Date 21/5/2012.**

2. Optimization of a 40 MW MTR reactor design. **Date 10/2/2016.**

18. Reviewer of master's Thesis (Tartous University - Faculty of Science - Physics Department).

1. The effect of weak mixing angle on the electron-positron cross section to production neutrino pairs in the energy field of W and Z bosons.

19. Reviewer of a Doctoral thesis. High education ministry (Syria).

1. Developing new simulation techniques for advanced MTRs. 2021.