Curriculum Vitae

1. Personal Information

Name: Prof. Nadir Omar Hashim
Address: Department of Physics, Kenyatta University
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2. Qualifications

2.1 Academic Qualifications

2007: Dr. rer. Nat. in Astro-particle (Cosmic Ray) Physics, Siegen University, Germany
2001: M.Sc. in Physics, Kenyatta University, Kenya
1997: B.Sc. in Physics, Jomo Kenyatta University of Agriculture and Technology, Kenya

2.2 Other Courses

16 – 27 June 2025. ICTP-IAEA Nuclear Energy Management School, Trieste, Italy.

23 – 27 September 2024. Regional Training Course for Trainers of Radiation Protection, organized by IAEA in Gaborone, Botswana.

05 -09 August 2019. ICTP-IAEA Nuclear Knowledge Management School, Trieste, Italy

January 2018: Role of Chairman in Implementing University Policies, Kenyatta University, Nairobi.

08-09 September 2010: Patent Drafting Training Course, Kenyatta University, Nairobi.

August 2008: Effective Project Planning and Management, KARI, Muguga.

28th July 2004: Radiation Protection, Siegen University, Germany

07th October 2002 - 28th March 2003: German Language Course and Exam (DSH), Goettingen, Germany

06 July – 29 August 1998: Postgraduate Course in Tropical Coastal Ecology, Management and Conservation, Mombasa, Kenya

3.0 Employment History

03 July 2025 to date: Associate Professor, Department of Physics, Kenyatta University.

9th June 2014 to 02 July 2025: Senior Lecturer, Department of Physics, Kenyatta University.

19th February 2008 to 8th June 2014: Lecturer, Department of Physics, Kenyatta University.

05th March 2002- February 2008: Tutorial Fellow, Department of Physics, Kenyatta University

4.0 Administrative Responsibilities

4.1 Administrative Responsibility at Kenyatta University

1. Chairman, Department of Physics: 18 July 2015– to – 17 July 2019
2. Acting Dean, School of Pure and Applied Sciences, 09 – 22 April 2018, 14-15 March 2018
3. Acting Chairman, Department of Physics: 28 May – 18 July, 2015; 11-13 March 2015, 18-20 February 2015, 23rd June – 1st July 2011.
4. Acting Director, Directorate of E-Learning, 17-24 December 2014
5. July 2016. Appointed Member, Senate Committee on Examination Irregularity

4.2 External Recognition and Appointments

1. October 2023. Alumni Ambassador, Siegen University, Germany
2. July 2023. Re-Appointed External Examiner – Pwani University. First Appointment – Jan. 2020
3. December 2019. Nominated as AFRA-NEST National Coordinator, by the National Commission for Science, Technology and Innovation (Kenya) to the IAEA. First Appointment October 2013
4. January 2018. Appointed Member and Chairman of the National Steering Committee on Square Kilometer Array (SKA) in Kenya at NACOSTI.
5. November 2016. Appointed Member of the Committee to Develop a National Strategic Action Plan / Business Plan for National Nuclear Institutions in Kenya at NACOSTI
6. October 2016 – October 2018. Appointed External Examiner, Department of Physics, University of Nairobi.

4.3 Internal Appointments at Kenyatta University

1. 08 December 2023. Coordinator, IAEA-PGEC Training.
2. 26 July 2023, 08 March 2018. Member, University National Values Committee
3. 14th August 2015. Member, University Committee to develop the 2015 – 2025 Strategic and Vision Plan
4. 18 March 2015. Chairman, Kenyatta University Press Management Board
5. 23 February 2015. Co-Chair, Kenyatta University Ranking Committee.
6. 21 October 2014: E-Learning Coordinator, School of Pure and Applied Sciences
7. February 2014: Appointed member of the Chandaria Business Innovation and Incubation entre Board. (First appointment: January 2011).
8. April 2013: Member of the corruption prevention committee in the Department of Physics
9. January 2012: Appointed member of the Intellectual Property Rights Board
10. January 2008 to July 2015: Assistant Exams Coordinator, Seminar Coordinator, Department of Physics

4.4 Professional Engagements in Nuclear Science and Technology

- SV-RAF9070 - IAEA Scientific Visit to CNESTEN, Rabat Morocco, 10th to 14th February 2025. Sharing Moroccan experience in organizing the IAEA Regional Postgraduate Educational Course in Radiation Protection and Safety of Sources (PGEC)
- Regional Training Course for Trainers of Radiation Protection Officers (RPOs), TN-RAF9070-EVT2400169, held from 23rd to 27th September 2024 in Gaborone, Botswana.
- Co-coordination of the IAEA Postgraduate Educational Course in Radiation Protection and Safety of Sources (PGEC) from 02 October 2023 to 29th March 2024 in Kenya.
- https://www.iaea.org/services/training/pgec
- Coordination of the AFRA-NEST project at the national and regional levels

https://ken-nest.net/

https://www.afra-web.org/afra-nest

- Coordination of the IAEA-IRL project at the national level
https://nucleus.iaea.org/sites/connect/RRIHpublic/Pages/IRL.aspx

- Participation in Nuclear Education Networks meetings at the IAEA between 2019 and 2022 which culminated in the following publication:

IAEA-TECDOC-2007. Nuclear Educational Networks: Experience Gained and Lessons Learned. https://www.iaea.org/publications/15213/nuclear-educational-networks-experience-gained-and-lessons-learned

- Technical Meeting on Educational Networks, 17-21 July 2023

- IAEA General Conference, 26 - 30 September 2022, Vienna Austria. I presented the status of the IAEA-IRL project.

- IAEA - TC Group Expert Mission for AFRA: Knowledge Management Assessment Visit (KMAV, Level 1), 4 - 8 July 2022 Nairobi, Kenya.

- Orientation Workshop to Launch the IAEA - Internet Reactor Laboratory with a New Host for Africa, 22 - 26 November 2021, Rabat, Morocco.

- IAEA Technical Meeting on Knowledge Management Assist Visit Methodology for Education and Training Providers, 27 - 30 July 2021. Online via Teams

- Consultancy Meeting on Nuclear Educational Networks Experience Gained and Lessons Learned, 9 - 11 November 2021, Vienna, Austria

- EduTA Education and Training Appraisal in Radiation Protection and The Safety of Radiation Sources, 03 - 07 June 2019, Nairobi, KENYA

- IAEA - Nuclear Knowledge Management Advanced Training Program, 11 February to 09 August 2019

5 Fellowships

1. 17th July 2006: Awarded a scholarship by the Max Planck Society as a guest scientist at the Max Planck Institute for Nuclear Physics, Heidelberg, Germany

2. 09th July 2002: Awarded a fellowship by the German Academic Exchange Service (DAAD), Bonn, Germany for doctoral study at Siegen University, Germany

3. December 1998: Awarded a scholarship by Kenyatta University for M.Sc. Study in the Department of Physics, Kenyatta University

6. Postgraduate Supervision

6.1 Ph.D. Supervision
6.1.1 Completed

1. Catherine Nyambura. I84/32283/2015. Risk Assessment due to Naturally Occurring Radioactive Materials and Technologically Enhanced Naturally Occurring Radioactive Materials in Kilimambogo, Kenya. **Status: Graduated in December 2023**

2. Willis Otieno. I84/28545/2018. Determination of exposure from radon, thoron and terrestrial radionuclides and modelling indoor gamma radiation dose in Homa Bay County, Kenya. **Status: Graduated in July 2023**

3. Rotich Charles Kipngeno. I84/322/72/2015. Exposure to Natural Sources of Radiation in Bureti Sub-County of Kericho County in Kenya. **Status: Graduated in December 2022**

4. Felix O. Wanjala. I84/37350/2017. Human Exposure and Associated Risks due to Natural Radioactivity and Heavy Metals in Ortum, West Pokot, Kenya. **Status: Graduated in July 2021**

5. M. W. Chege. I56/15115/08. Determination of Radioactivity in Food Crops, Water and Building Materials in the High Background Area of Mrima Hill and Monte Carlo simulation of the influence of Porosity of Building materials on Radon Emanation Coefficient. **Status: Graduated in December 2014**

6.1.2 Ongoing
1. Dorcus Mulumba. I84/39074/2017. Design and Development of a Two-Dich Interferometer.

2. Betty Kamunde. I84/37706/2016. High Resolution Study of Water Masers in M82 Galaxy.

3. Sophy Njoki Njiru. I84/32285/2015. Modelling and Simulation of the Concentration of Heavy Metals in Water and Sediments in Rupingazi River in Embu County, Kenya.

6.2 M.Sc. Supervision
6.2.1 Completed
1. Delphine N. Kasyoka. I56/CE/27636/2019. Characterization of red clay and glass composite for ionizing radiation shielding. **Graduated in July 2025**

2. Amosi N. Chilai. I56/CE/15643/2005. Radiation levels in building materials along Kangundo road, Nairobi City County, Kenya. **Graduated in July 2025**

3. Veronicah N. Kihagi. I56/27915/2019. Measurements of lateral distribution of cosmic ray muons using two-fold coincidence technique. **Status: Graduated in December 2024.**

4. Samuel M. Chege. I56/CE/28632/2015. Lateral distribution of cosmic ray muons. **Status: Graduated in December 2024**

5. M. E. Mutwiri. I56/CE/28939/2015. Natural radionuclide concentrations in phosphate fertilizers found in the Kenyan market. **Status: Graduated in December 2023**

6. V. N. Ngari. I56/CE/28202/2015. Levels of natural radionuclides in Khat (*catha edulis*) leaves and soils in selected areas in Embu County, Kenya. **Status: Graduated in December 2022**

7. A. Wangari. I56/CE/28349/2013. Determination of the Levels of Naturally Occurring Radioactive Materials of Soil Samples in Kikuyu, Kiambu County, Kenya. **Status: Graduated in July 2022**

8. A. K. Oborah. I56/CE/24492/2012. Assessment of natural radioactivity levels and radiation hazards in building materials used in Babadogo estate, Nairobi County, Kenya. **Status: Graduated in July 2022**

9. C. Omondi. I56/22399/2010. Characteristization of X-ray beam irradiator . **Status: Graduated in July 2021**

10. S. K. Luke. I56/CE/25842/2014. Analysis of Natural Radioactivity Levels and Radiation Hazards Due to Murram Quarried in Kakamega County, Kenya. **Status: Graduated in July 2021**

11. T. N. Ndichu. I56/CE/25842/2014. Gamma Ray Spectrometry of Phonolite-Kenyte Sequence of Volcanic Sediments From the Selected Areas in Nyeri County, Kenya. **Status: Graduated in July 2021**

12. V. Kiprono. I56/CE/25839/2014. Radiometric Assessment of Natural Radioactive Levels and Radiation Hazard Indices For Soil Samples in Kericho County, Kenya. **Status: Graduated in December 2020**

13. M.E. Mukhabana. I56/CE/25851/2014. Natural Radioactivity Measurements and Evaluation of Radiation Hazards in Soil Samples of Shinyalu, Kakamega County, Kenya. **Status: Graduated in December 2020**

14. M. Busienei. I56/CE/11457/2008. Impact Assessment of Radionuclide Dispersal Around the Nandi Hills Tea Farming Complex in Kenya. **Status: Graduated in July 2019**

15. P. J. Were. I56/CE/2012. Monte-Carlo Simulation and Measurement of Gamma-ray Attenuation in Concrete. **Status: Graduated in July 2019**

16. O. K. Erick. I56/CE/24678/2012. Gamma and X-ray Shielding Potential of Styrene Butadiene Rubber Polymer Filled with Lead (II) Oxide Composites for Radiation Protection. **Status: Graduated in July 2019**

17. J. Herman. I56/20400/2012. Determination of Natural Radioactivity and Essential Elemental Concentration Levels in the Vicinity of Minjingu Mining – Tanzania. **Status: Graduated in July 2019**

18. M.K. Motari. I56/22434/2012. Monte Carlo simulation of extensive air showers. **Status: Graduated in December 2018.**

19. M.J. Mutungi. I56/CE/22274/2012. Assessment of natural radioactivity concentration levels in geological samples collected in selected areas in Makueni County. **Status: Graduated in December 2018.**

20. E.N. Munene. I56/23509/2011. Numerical Modeling of heavy metals in river Sosiani in Eldoret, Usain Gishu County. **Status: Graduated in July 2018.**

21. W.O.G. Odongo. I56/CE/28375/2013. Gamma Ray Spectrometric Analysis of Sand Samples from Selected Beaches on the Coastline of Kenya. **Status: Graduated in July 2018.**

22. K. Elijah. I56/CE/26604/2011. Radioactivity concentration and dose assessment for soil samples from wheat plantation areas of Narok County, Kenya. **Status: Graduated in December 2016**

23. K.K. Betty I56/CE/24516/2012. Radiation exposure levels associated with construction sand from Tharaka-Nithi County in Kenya. **Status: Graduated in July 2016**

24. M.E. Wanjala. I56/CE/26603/2011. Gamma-ray spectrometric analysis of soil in Bungoma County. **Status: Graduated in July 2016**

25. R.C. Kipngeno. I56/CE/22409/2010. Gamma ray spectrometric analysis of soil and green tea leaves of Kericho county, Kenya. **Status: Graduated in July 2015.**

26. S. Ouko. I56/CE/22366/2010 Natural radiometric survey and estimation of radiation exposure from archean rocks: A case study of granite-greenstone complex of Migori County, Kenya. **Status: Graduated in July 2015.**

27. E. Okelo. I56/CE/11179/2007. Gamma ray spectrometric analysis of the naturally occurring radionuclides in sand mines along the shores of Lake Victoria in Migori County, Kenya. **Status: Graduated in July 2015.**

28. G.N. Mayaka. I56/CE/11985/2007 Measurement and multivariate chemometric analysis of radon concentration in geothermal fluids associated with high background radiation areas. **Status: Graduated in July 2014.**

29. C. Leonard. I56/CE/14121/2009. Natural radioactivity hazards of building bricks fabricated from clay soil of Bomet District, Kenya. **Status: Graduated in July 2014.**

30. L.K. William. I56/CE/14128/2009. Gamma-ray spectrometric analysis of sediment deposits at the shores of lake Nakuru, Kenya. **Status: Graduated in July 2013.**

31. N.N. Sophy. I56/CE/11975/2004. Application of mass transport model to study temporal variation of concentration of lead in a riverine system. **Status: graduated, M.Sc. (Physics), December 2012.**

32. J.O. Agora. I56/CE/11987/2007. Environmental radioactivity measurements in Kerio Valley. **Status: graduated, M.Sc.(Physics), December 2012.**

33. M.T. Sangura. I56/CE/15645/2005. Environmental radioactivity measurements at Port Victoria. **Status: graduated, M.Sc.(Physics), June 2012.**

34. W. M. Namasaka. I56/15633/2005. Monte Carlo simulation of the cosmic ray muon charge ratio at high energies upto 10 TeV. **Status: graduated, M.Sc.(Physics), June 2012. Ph.D. in Germany.**

35. N. K. Kimani. I56/12088/2009. The study of strongly star forming galaxies: their physical characteristics as a function of morphology and IR-luminosity. **Status: Graduated, M.Sc.(Physics), December 2011. Ph.D. work commenced in January 2013, IMPRS, Bonn, Germany. Currently at Kenyatta University, Kenya.**

36. M. Mutie. I56/CE/15626/2005. Measurements of the elemental and radionuclide concentrations of environmental and geological samples from selected areas of Kibwezi district of Kenya. **Status: Graduated, M.Sc.(Physics), July 2011. Graduated, Ph.D. in December 2023 at Technical University of Kenya, funded by the DARA/Newton Fund Training Program in Radio Astronomy.**

37. L. Ochillo. I56/10290/2006. Monte Carlo simulation of the cosmic ray muon charge ratio and investigation of the East-West effect. **Status: graduated, M.Sc.(Physics), December 2010. Ph.D. work completed in June 2016, Siegen University, Germany. Funded by DAAD. Currently at Jaramogi Oginga Odinga University of Science and Technology, Kenya.**

38. J.M. Kebwaro. I56/15647/2005. Measurement of environmental radioactivity around Mrima hill in the south coast of Kenya. **Status: graduated, M.Sc. (Physics), December 2009. PhD. work completed in June 2015, Nuclear Engineering, China. Currently at Karatina University, Kenya**

6.2.2 Ongoing

1. A.N. Kinoti. I56/CE/28615/2015. Development of a catalytic converter prototype of carbon (iv) oxide emissions in an automobile (two wheeler) area, Meru County. **Status: On-going research**

7. Conferences/Seminars/Workshops
7.1 Participation in Workshop/Conferences

1. International Symposium on Smog and Air Quality: Chemical Insights, Remediation, and Sustainable Mitigation. Department of Chemistry, UET-Lahore, Pakistan.
17th January 2025. I presented online on the following topic: Applications of Nuclear Techniques in Air Monitoring.

2. Ministerial Conference on Nuclear Science and Technology and Meeting of NLOs and Educational Networks, held from 26th November to 01 December 2024 at the Headquarters of the International Atomic Energy Agency (IAEA) in Vienna, Austria.

3. International Conference on Nuclear Knowledge Management and Human Resources held from 01 to 05 July 2024 at the Headquarters of the International Atomic Energy Agency (IAEA) in Vienna, Austria.

4. First Pan African Astro-Particle and Collider Physics Workshop, held online from 21st to 23rd March 2022, presented a paper on "Big Science for National and Regional Unity".

5. Wilton Park Conference – Expanding peaceful uses of nuclear energy and nuclear technology in Africa, 24th to 28th February 2020 in Johannesburg, South Africa.

6. Nuclear Power Plant Training Program for Kenya. Advanced Power Reactor 1400 - Familiarization

and Intensive Training. 13th to 28th August 2019 at Kenyatta University, Nairobi, Kenya.

7. Fundamental Physics with the Square Kilometer Array (SKA). May 2017, Mauritius.

8. Square Kilometer Array (SKA)/ South African Radio Astronomy Observatory (SARAO) Annual Bursary Conferences – December 2019, Durban, December 2018, Port Elizabeth; December 2017, December 2016. Cape Town, South Africa.

9. Annual DARA Meeting, March 2016. Johannesburg, South Africa.

10. JEDI Workshop, September 2015, Cape Town, South Africa.

11. ISWI/SCOSTEP School on Space Science, October 21 – November 1, 2014, Nairobi, Kenya.

12. Fourth General Assembly, IAEA AFRA-NEST, 14-17 August 2023, Johanesburg, South Africa; Third General Assembly, IAEA AFRA-NEST, Sharm El Sheikh, Egytpt, 08-12 April 2018; National Coordinators Meeting, IAEA AFRA-NEST, Abuja Nigeria, 01 – 05 December 2014; First IAEA AFRA-NEST General Assembly on Networking Nuclear Education and Training. 26-30 August 2013, Arusha, Tanzania.

13. First Kenyatta University Workshop on Mathematical Modeling. 17Th to 21st June 2013. Kenyatta University.

14. East African Regional Astronomy Workshops: 29 June – 01 July 2015, Addis Ababa, Ethiopia: 30 June – 04 July 2014, Kigali, Rwanda; 20 - 23 November 2012, Mukono, Uganda; 21 - 25 February 2011, Addis Ababa, Ethiopia; November 2009, Nairobi, Kenya.

15. Wilhelm and Else Heraeus-Seminar: New event generators for particle physics experiments 04. - 06. January 2006, Dresden, Germany.

16. VIHKOS CORSIKA School, November 25 - November 30, 2008; May 31 - June 5 2005, Freudenstadt-Lauterbad, Germany.

17. 18th Meeting of Nobel Laureates in Physics, June 27 - July 2nd, 2004, Lindau, Germany.

18. Astroteilchenphysik in Deutschland - Status and Perspektiven, 16.-18. September 2003, Karlsruhe, Germany.

19. ICFA School of Instrumentation in Elementary Particle Physics, March 26th - April 6th, 2001, National Accelerator Centre, Faure, Cape Town, South Africa.

7.2 Presentation of Papers at Academic and Professional Conferences

1. Role of Education Networks in Enhancing Peaceful and Sustainable Uses of Nuclear Energy and Nuclear Technology in Africa in support of Africa's Development Agenda. Presented at the Wilton Park Conference – Expanding peaceful uses of nuclear energy and nuclear technology in Africa, 24th to

28th February 2020 in Johannesburg, South Africa; ener-connect webinar, 11 June 2020.

2. Big Science for National and Regional Unity. Presented at the Kenyatta University Biennial Research and Innovation Conference, 23 – 25 October 2019, Kenyatta University, Nairobi, Kenya.

3. Country Status Report. African Ministerial Forum Meeting of the Square Kilometer Array. 13 – 16 October, 2019, Pretoria, South Africa; 14 – 17 October 2018, Cape Town, South Africa.

4. Development of Astronomy and Astrophysics in Kenya. Presented at the conference on fundamental physics with the Square Kilometer Array (SKA) in May 2017, Mauritius.

5. The Momentum Spectrum and Charge Ratio of Cosmic Ray Muons Measured at a Depth of 320 mwe . Paper presented at the second Middle East and Africa Regional IAU Meeting, MEARIM II, 10 - 15 April 2011, Cape Town, South Africa.

6. Research status reports on the measurement of the momentum spectrum and charge ratio of cosmic ray muons using ALEPH detector. Spring Meetings of the German Physical Society (DPG), Mainz-2004, Berlin-2005, Dortmund-2006, Heidelberg-2007.

7. Momentum spectrum of cosmic muons at a depth of 320 mwe. 29th. Paper presented at the International Cosmic Ray Conference, 03. - 10. August 2005, Pune-India.

8. Assessment of quality of trace element measurements by EDXRF technique: a statistical approach. Paper presented at the 9th International Symposium on Radiation Physics and Workshop on Radiation Based Analytical Techniques, 17-22 August 2003, iThemba LABS (formerly National Accelerator Centre), Faure, Cape Town, South Africa.

9. Application of nuclear techniques to environmental physics. Poster presented at National Nuclear Technology Conference. 12Th to 15th May 2001, iThemba LABS (formerly National Accelerator Centre), Faure, Cape Town, South Africa.

10. Chemometric approaches to assessing the quality of measurements in EDXRF spectrometry. Paper presented at The Millennium School on Nuclear and Particle Physics, 31st January to 03rd February 2000, iThemba LABS (formerly National Accelerator Centre), Faure, Cape Town, South Africa.

11. IAEA - EURACHEM Workshop on “Efficient Methodology for the Evaluation of Uncertainty in Analytical Chemistry - Implementing the ISO Guide” 14 - 15 June 1999, Helsinki, Finland.

8. Research and Publications

8.1 Articles in Refereed Journals

1. Sophy Njoki; Nadir Omar Hashim; Margaret Chege. "Evaluation of Heavy Metal Concentration in Sediments of Rupingazi River, Kenya.” Volume. 9 Issue.9, September - 2024 International Journal of

Innovative Science and Research Technology (IJISRT), www.ijisrt.com. ISSN - 2456-2165, PP:- 647-653, https://doi.org/10.38124/ijisrt/IJISRT24SEP002

2. Delphine K. Nzivulu, Nadir O. Hashim, Nicholas Musila, Kapis E. Otieno, Felix O. Wanjala (2024). Investigation of red clay and waste glass composite bricks for ionizing radiation shielding. Volume 12, June 2024, 102744. https://doi.org/10.1016/j.mex.2024.102744

3. Veronicah N. Kihagi, Samuel M. Chege, Nadir O. Hashim, Naftali K. Kimani, Claus Grupen, Lateral distribution cosmic ray muon coincidences up to 36 m. MethodsX, Volume 12, 2024, 102715, ISSN 2215-0161, https://doi.org/10.1016/j.mex.2024.102715

4. Kenneth A Oborah, Nadir O Hashim, Charles M Migwi, Charles Rotich (2024). Assessment of radioactivity concentration for building materials used in Babadogo Estate, Nairobi City County, Kenya. Radiation Protection Dosimetry, Volume 200, Issue 2, February 2024, Pages 201–205, https://doi.org/10.1093/rpd/ncad293

5. E.N. Munene, N.O. Hashim, W.N. Ambusso (2023). Human health risk assessment of heavy metal concentration in surface water of Sosian river, Eldoret town, Uasin-Gishu County Kenya, MethodsX, Volume 11, 102298, ISSN 2215-0161. https://doi.org/10.1016/j.mex.2023.102298.

6. Willis Otieno Gor Odongo, Margaret Chege, Nadir Hashim, Shinji Tokonami, Kranrod Chutima, Charles Rotich, "Determination of Activity Concentration of Natural Radionuclides and Radiation Hazards' Assessment of Building Materials in High Background Radiation Areas of Homa and Ruri, Kenya", The Scientific World Journal, vol. 2021, Article ID 9978619, 7 pages, 2021. https://doi.org/10.1155/2021/9978619

7. Willis Otieno Gor Odongo, Nadir Hashim, Margaret Wairimu Chege, "Gamma Ray Spectrometric Analysis of Sand Samples from Selected Beaches along Kenyan Coastline", The Scientific World Journal, vol. 2021, Article ID 6621645, 8 pages, 2021. https://doi.org/10.1155/2021/6621645

8. C K Rotich, N O Hashim, M W Chege, C Nyambura, Naturally Occurring Radionuclides in Soil Samples of Bureti Sub-County of Kericho County Kenya, Radiation Protection Dosimetry, 2021, ncab006, https://doi.org/10.1093/rpd/ncab006

9. Wanjala, O. F., Otwoma, D., Chege, M., Hashim, O. N., Nyambura, C., Kebwaro, J., & Atieno, C. (2021). Lung Cancer Risk Assessment due to Radon and Thoron Exposure in Dwellings in Ortum, Kenya. Journal of Environment Pollution and Human Health (Online), 9(2), 64-70. http://pubs.sciepub.com/jephh/9/2/5/

10. C.K. Rotich, N.O. Hashim, M.W. Chege, C. Nyambura. Measurement of Radon Activity Concentration in Underground Water of Bureti Subcounty of Kericho County Kenya. Radiation Protection Dosimetry, Volume 192, Issue 1, October 2020, Pages 56–60, https://doi.org/10.1093/rpd/ncaa193

11. F.W. Omonya, N.O. Hashim, D. Otwoma, C. Nyambura, J. Kebwaro, M. Ndege, S. Bartilol (2020). Environmental Assessment of heavy metal pollutants in soils and water from Ortum, Kenya. Environmental Monitoring and Assessment. Vol. 192. Issue 2. Springer International Publishing. **https://pubmed.ncbi.nlm.nih.gov/31950287/**

12. C. Nyambura, N. O. Hashim, M. W. Chege, S. Tokonami and F. W. Omonya (2020) Cancer and non-cancer health risks from carcinogenic heavy metal exposures in underground water from Kilimambogo, Kenya. Groundwater for Sustainable Development. Elsevier. https://doi.org/10.1016/j.gsd.2019.100315

13. F O Wanjala, N O Hashim, D Otwoma, C Nyambura, J Kebwaro, A Mauring, J Bartilol, M Chege, (2019). Human Exposure to Background Radiation in Ortum, Kenya. *Radiation Protection Dosimetry*, ncz264, https://doi.org/10.1093/rpd/ncz264

14. M. W. Chege, N. Hashim, C. Nyambura, A. Mustapha, M. Hosada, S.Tokonami (2019). Radon and Thoron; Radioactive Gases Lurking in Earthen Houses in Rural Kenya. *Front. Public Health*, 08 May . https://doi.org/10.3389/fpubh.2019.00113

15. C. Nyambura, S. Tokonami, N.O. Hashim, M.W. Chege, T. Suzuki, H. Kudo, M. Hosoda. Annual effective dose assessment due to radon and thoron progenies in dwellings of Kilimambogo, Kenya. *Radiation Protection Dosimetry*. 29th April 2019. https://doi.org/10.1093/rpd/ncz090

16. M. W. Chege, N. O. Hashim, A. S. Merenga, O. Meisenberg, J. Tschiersch. Estimation of Annual Effective Dose Due to Radon and Thoron Concentrations in Mud Dwellings of Mrima Hill, Kenya. *Radiation Protection Dosimetry* (2015) 1-4; https://doi.org/10.1093/rpd/ncv231

17. M. W. Chege; N. O. Hashim; A. S. Merenga; J. Tschiersch. Analysis of Internal Exposure Associated with Consumption of Crops and Groundwater from the High Background Radiation Area of Mrima Hill, Kenya. *Radiation Protection Dosimetry* (2015) 1-3; http://doi.org/10.1093/rpd/ncv261

18. Wanjala, F.O., Otwoma, D., Kitao, T.F., & Hashim, N.O. (2015). Assessment of Natural Radioactivity and its Radiological Impact in Ortum Region in Kenya. *Radiation Safety for Sustainable Development*, (p. 176). Kenya (INIS)

19. M. Schmelling, N.O. Hashim, C. Grupen, S. Luitz, F. Maciuc, A. Mailov, A.-S. Mueller, H.-G. Sander, S. Schmeling, R. Tcaciuc, H. Wachsmuth, T. Ziegler, K. Zuber (The CosmoALEPH Collaboration). Spectrum and Charge Ratio of Vertical Cosmic Ray Muons up to Momenta of 2.5 TeV/c. *Astroparticle Physics*. **49** (2013) 1 – 5.

20. Chege, M. W., Hashim, N. O., Merenga, A. S. and Tschiersch, J. Lead contamination of traditional hand-dug wells in parts of Kwale County, Kenya. *International Journal of Physical Sciences*, 8(17), 835-839 (2013).

21. Chege, M. W., Hashim, N. O. and Merenga, A. S. Physico-chemical analysis of groundwater in the Gazi-Mrima Hill region of Kwale County, Kenya. *Asian Journal of Science and Technology*, 4(5), 055-058 (2013)

22. M. Schmelling, N.O. Hashim, C. Grupen, S. Luitz, F. Maciuc, A. Mailov, A.-S. Mueller, H.-G. Sander, S. Schmeling, R. Tcaciuc, H. Wachsmuth, and K. Zuber (The CosmoALEPH Collaboration). Spectrum and Charge Ratio of Vertical Cosmic Ray Muons up to Momenta of 2.5 TeV/c. *arXiV:1110.4325v1* [hep-ex] 19 Oct 2011.

23. J.M. Kebwaro, I.V.S. Rathore, N.O. Hashim and A.O. Mustapha. Radiometric assessment of natural radioactivity levels around Mrima hill, Kenya. *International Journal of the Physical Sciences,* 6(13), 3105-3110. (2011)

24. J.M. Kebwaro, N.O. Hashim and A.O. Mustapha. Construction of a generic reference material for gamma ray spectrometric analysis. *Indonesian Journal of Physics*. 22(4), 105-106. (2011)

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8.2 Articles in Conference Proceedings

1. N.O. Hashim for the CosmoALEPH collaboration. The Momentum Spectrum and Charge Ratio of Cosmic Ray Muons Measured at a Depth of 320 mwe. AFRICAN SKIES / CIEUX AFRICAINS, No. 16, July 2011

2. Angeyo H.K., Patel J.P., Mustapha A.O., Achola S.O., Ogwari P., Ntihabose L., Mangala M.J., Makokha J.W., Odumo B.O., Wepukhulu G.W., Maina D.M., Kaniu I.M., Hashim N.O., Kebwaro J.M., Masinde T.S., Otwoma D., Mayaka G.N., Agora J.O., Kinyua R. and Atando V. Status and Prospects in Research Infrastructure Development in Nuclear Analytical Spectrometry and Radiometric Instrumentation Methodologies for Environmental Radiation And Associated Radioactivity Measurements and Modelling Studies in Kenya. Proceedings of IAEA Technical Meeting on Establishing a Network of Laboratories in the Field of Nuclear Instrumentation for Environmental Monitoring and Related Applications, 27-30 Sept. 2010, Krakow, Poland.
3. N.O. Hashim, C. Grupen, S. Luitz, A. Mailov, F. Maciuc, A.-S. Mueller, A.Putzer, H.-G. Sander, S. Schmeling, M. Schmelling, R. Tcaciuc, H. Wachsmuth, Th. Ziegler, K. Zuber. Momentum spectrum of cosmic muons at a depth of 320 mwe. Proc. 29th International Cosmic Ray Conference, Pune-India, 6, 13 - 16. (2005)

8.3 Books

Nuclear Educational Networks: Experience Gained and Lessons Learned. IAEA-TECDOC-2007. Published in 2022: IAEAL 22-01527 | ISBN 978–92–0–135522–5. I contributed experiences from Africa.

N.O. Hashim. Measurement of the momentum spectrum of cosmic ray muons at a depth of 320 mwe. Shaker Verlag. Aachen, Germany, 2007. ISBN 978-3-8322-6445-1

9. External and Internal Grants
9.1 Own Grants

1. Capacity Building in Nuclear Science and Forensic Technologies in Kenya. Proposal submitted for funding under Japan Technical Cooperation, financial year 2021, through the Ministry of Higher Education and the National Treasury of Kenya. Amount USD 5,602,270/=

2. An optical observatory in Kenya. Funded by STFC GCRF Foundation Award. The project commenced on 1st April 2018 – 31 March 2019. The aim was to carry our feasibility studies for an optical observatory in Kenya. I am a co-investigator in this project. Amount: GBP 89,794.40

3. Summer School on Data Analysis and Data Mining in Astronomy. Proposal submitted to the International Astronomical Union (IAU) Task Force 1: Astronomy for Universities and Research Project Application Form for Implementation in the 2015 Calendar Year. Budget: Euro 4,500/=

4. Training of postgraduate (M.Sc. and Ph.D.) students in the departments of physics and chemistry at Kenyatta University. Funded by the African Development Bank. Approx. Budget: USD 1.25M. Period: 2015- date; funded by PASET-RSIF, 2019 – date

5. Training of postgraduate (M.Sc.) students in the Department of Physics, Kenyatta University. Funded by the German Development Bank through the East African Community. 2019 - date

9.2 Student Grants

1. F.O. Wanjala. Awarded research grant by the Kenyan National Research Foundation (NRF) 2016/17. Amount: KSh. 1,200,000/= (USD 11,650/=)

2. K. Oborah. Awarded research grant by Kenyan National Research Foundation (NRF) 2016/17. Amount: KSh. 491,000/= (USD 4,777/=)

3. M.W. Chege. Awarded research grant by the National Council for Science and Technology (NCST). 4th Call Ph.D. 2012/2013. Amount: KShs. 1,050,000/= (USD 11,667/=)

4. P.M. Mutule. Awarded research grant by the National Council for Science and Technology (NCST) 4th Call M.Sc. 2012/2013. Amount: KShs. 169,000/= (USD 1,878/=)

10 Referees

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