

Workshop on Advanced Nuclear Science and Technology Techniques ANSTT6

Keynote Speakers

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iThemba LABS, Cape Town



Dr Philippos Papadakis obtained his PhD from the University of Liverpool, following undergraduate studies at the Aristotle University of Thessaloniki, Greece. During his Doctoral and postdoctoral research, he played a leading role in the development and construction of the SAGE spectrometer for combined electron- γ -ray spectroscopy at the University of Jyväskylä, Finland, as well as the SPEDE electron spectrometer, now operating with Miniball and IDS at HIE-ISOLDE, CERN. In 2015, he was awarded a Marie Skłodowska-Curie Intra-European Fellowship to develop the MARA Low-Energy Branch, a facility designed to integrate multiple purification stages for precision mass, laser, and decay studies of exotic nuclei. Since 2019, he has been based at Daresbury Laboratory, UK, where he leads experimental developments in nuclear spectroscopy. His research focuses on shape coexistence phenomena and the structure of superheavy elements.



Dr Muiywa Michael Orosun is a Radiation and Health Physicist and Researcher at the Institute of Environmental Radioactivity, Fukushima University, Japan. His work focuses on Environmental radioactivity, Radionuclide transport dynamics, and probabilistic radiological risk assessment, including Monte Carlo-based dose and exposure evaluation. He specialises in the assessment of NORMs due to mining-related activities and the transport, redistribution, and ecological behaviour of radiocesium within post-accident forest ecosystems (e.g., Fukushima). Dr. Orosun has published extensively in high-impact journals and actively contributes to advancing radiation protection, environmental radioactivity, and evidence-based nuclear safety research.



Professor Nadir Hashim is an Associate Professor and former chairman of Kenyatta University's Department of Physics where he also leads the Nuclear Science and Technology Training program. He earned his Dr. rer. nat. degree from Siegen University, Germany. His Doctoral thesis, funded by DAAD and the Max Planck Society, involved measurement and Monte Carlo simulation of cosmic ray muons using the ALEPH at CERN. He has supervised over 30 postgraduate students and collaborates in the fields of radiation physics, astronomy and astrophysics. His memberships include the Kenya Physical Society; East African Association of Radiation Protection; and Nuclear Society of Kenya and is a technical committee member at the Nuclear Power and Energy Agency; Kenya Bureau of Standards; and the National Commission for Science, Technology and Innovation. He is the national coordinator of IAEAs AFRA-NEST and Kenya's IAEA-Internet Reactor Laboratory (IRL).



Dr Mohamed Mazunga is a Senior Lecturer in Physics at the University of Dar es Salaam (UDSM), Tanzania. He holds a PhD in Physics from the University of Science and Technology, China; and an MSc (Physics) and BSc (Physics & Education) from UDSM. His research focuses on nuclear and medical physics, including baseline radioactivity measurements in uranium deposits; heavy metal analysis using nuclear techniques; and Monte Carlo simulations for radiation detectors and cancer treatment optimisation. He served in key roles, including postgraduate and seminar coordinator in the Physics Department and supervised MSc/PhD theses, growing physics research capacity in Tanzania. Among his accolades, he received the CAS-TWAS President Fellowship and is an active member of the Tanzania Physical Society. His career bridges fundamental physics with environmental safety and medical applications, advancing science for societal impact.



Edzani Ratsibi Edzani Ratsibi is a nuclear physicist and Section Head in the Reactor Utilization and Production Division at the SAFARI-1 Research Reactor, operated by the South African Nuclear Energy Corporation. She has over ten years of experience in reactor utilization and radioisotope production across research reactors and accelerator technologies. Her work focuses on the safe and efficient use of research reactors for radioisotope production, research beam lines, and materials modification. Edzani has participated in leadership programmes with the IAEA and the World Nuclear University and is a former NECSA Chapter President of Women in Nuclear South Africa, actively promoting the peaceful use of nuclear technology and mentoring future nuclear professionals.



Dr Stephan Woodborne is Senior Accelerator Mass Spectrometry Scientist at NRF-iThemba LABS; Associate Professor at the Mammal Research Institute at the University of Pretoria; and Research Associate at the University of the Witwatersrand. He has extensive experience in radiocarbon dating and stable light isotope analyses and his applied particle physics techniques address socio-economic and ecological responses to climate change. His work has included providing chronological dates in partnership with most archaeological programs in South Africa; reconstructing atmospheric ^{14}C levels over the last 50 000 years; and the generation of past rainfall records from isotope analysis of tree rings. His palaeoclimate datasets are used to test climate change models and he has worked on ecological processes related to the hydrological and nutrient cycles in savanna systems, with ongoing programs in crocodile and river ecology.



Dr Munirat Bashir holds a PhD in Applied Nuclear Physics from Stellenbosch University and has over ten years of academic and research experience at Ibrahim Badamasi Babangida University. She specializes in environmental radiation measurement, radiation shielding, and radiation-matter interactions, combining experimental techniques and Monte Carlo simulations for environmental radiation assessment, dosimetry, and radiation protection. Munirat has been one of the experts at the recent Botswana Geant4 national training sponsored by International Atomic Energy Agency (IAEA).

