# 2ND NUCLEAR SCIENCE AND TECHNOLOGY

## *Conference*

**23-25 OCTOBER 2024**

**Unlocking the potential of Nuclear Science and Technology for Namibia's Development**

**Venue: The Dome Conference Centre**
**Swakopmund, Namibia**

UNITY LIBERTY JUSTICE

Atomic Energy Board of Namibia — Peaceful Atomic Energy

NCRST
National Commission On Research Science & Technology

NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNAM
UNIVERSITY OF NAMIBIA

Namibian Uranium Association

## OVERVIEW OF CONFERENCE PROGRAMME

### SESSION I: OFFICIAL OPENING

The opening session is anticipated to be addressed by high-level policy makers and international partners to provide a global perspective and a national outlook in relation to Namibia's outlook in terms of the nuclear landscape. This session will also provide an opportunity to view exhibitions by the local industry, regional and international partners. It will provide a practical display and illustration of some of the nuclear technological developments.

### SESSION II: GLOBAL PERSPECTIVE OF NUCLEAR TECHNOLOGY AND ECONOMIC DEVELOPMENT

This session anticipates to provide a high-level global overview of the state of development of nuclear science and technology at the multilateral level and in some countries with mature nuclear science and technology programmes.

***a. Role of the IAEA in Development of Nuclear Technology and Technical Support***

The presentation is expected to provide an overview of the role of the International Atomic Energy Agency in relation to its work on the developmental of innovative nuclear technology. Emphasis will be placed on the large-scale projects that have potential to catalyze economies in developing nations such as Namibia.

***b. Role of Nuclear Technology in National Economic Development (NECSA, ROSATOM, CNNC)***

The presentation is expected to provide an overview of the role of nuclear technology and its contribution to national development in the respective countries. Emphasis will be placed on the governance framework; the scope of the nuclear science and technology; share of nuclear technology towards economic and social indicators (GDP, job creation, production capabilities, research output, etc.). The overview will also include the programme of cooperation and collaboration with bilateral partners.

### SESSION III: URANIUM RESOURCE DYNAMICS

Session three will focus on the dynamics of the uranium resource, which is a key element in the nuclear energy landscape. It focusses the global dynamics with a view to narrow it the regional and national context.

***a. Uranium Exploration, Mining and Processing: Namibia's Current Future Prospects***

This presentation will deliver an overview of the current and future uranium mining projects in Namibia. It will focus on the current production capabilities and the expected output in the long-term and opportunities available.

***b. The Global Role of Uranium Nuclear Fuel Banks***

The presentation will provide a historical perspective with respect to the establishment of uranium nuclear fuel banks under the auspices if the IAEA. It will further consider the global dynamics around centralized nuclear fuel banks and the role of members states and the IAEA

***c. Value of Uranium Nuclear Fuel***

The presentation will provide an overview of the global uranium resources and where possible provide the market value considerations.

***d. Opportunities for Collaboration***

The session will further provide Namibia's plans regarding the development of the institutional framework to fully realize the nuclear sector industry in Namibia.
The final part of this session will include a panel discussion to explore opportunities for collaboration at the national level, bilateral and international to support the nuclear sector nationally and in the African region.

## SESSION IV: NUCLEAR SCIENCE AND TECHNOLOGY ADVANCEMENTS AND APPLICATIONS IN NAMIBIA

Session four will provide an opportunity and platform for researchers, scientists and industry players to share information and practices in the various thematic areas of nuclear science, technology and application.

***a. Radiation Medicine in Namibia, Progress and Prospects***

This part of the session will provide an overview of the scale and depth of the application of radiation medicine in Namibia, provide an analysis of the needs and challenges. It will also provide opportunity for researchers and industry players to provide an update of the latest developments in the sector.

***b. Namibia's Nuclear and Radioanalytical Capabilities***

The presentation is expected to provide an overview of the various technology in radio-analytics, environmental radiation exposure, Namibia's capabilities and challenges and make recommendations. It will further provide an opportunity for researchers who have conducted specific studies to present their research outcomes.

***c. Role of Nuclear Techniques in Food and Agriculture***

The segment of the session will be led by scientists who conduct various research and apply nuclear techniques to promote food safety, food security and understating water resource management dynamics. It is expected that presentations will provide an overview of the social or economic challenges to be addressed, the role of nuclear technology and Namibia's progress and challenges in the specific area.

## SESSION V: HUMAN RESOURCE CAPACITY AND RESEARCH CAPABILITIES IN NUCLEAR SCIENCE AND TECHNOLOGY

This session will provide an overview of the progress of development of the education and training sector for nuclear science and technology. It will provide an opportunity for academia to engage in discussion on how educators and their institutions can enhance the human capital development to better support the nuclear industry, including promoting national, bilateral and regional cooperation.

## SESSION VI: NUCLEAR AND RADIATION SAFETY

**Namibia's Nuclear and Radiation Safety Regime**

Recognizing radiation safety, nuclear safety, and nuclear safeguards as pre-requisite for deployment of nuclear technology, this part of the session will provide Namibia's progress in the development of the national nuclear regulatory framework and the future plans in the context of the proposed nuclear sector industry strategy. It will also provide specific and key fundamental context that underline regulatory work.

## SESSION VII: CONFERENCE SUMMARY AND CONCLUSION

This session will commence with a summary of the conference proceeding and will culminate in a panel discussion to discuss the potential pathways to enhance the economic and social contribution of nuclear technology to nation and regional development.

## GUIDE FOR PRESENTERS

Presenters are expected to prepare a PowerPoint slides focusing on the agreed scope of presentation as elaborated above. The duration of the presentation should be approximately 20 minutes (10 slides). A summary write-up of the presentation is welcomed for inclusion in the Conference Report.

## SOCIAL EVENT AND OTHER EVENTS

***a. Cocktail Reception***
A cocktail event is planned for the first evening of the conference to provide conference participants with an opportunity for socializing and networking

***b. Visit to Uranium Mine***
An opportunity will be provided to conference participants to visit a uranium mine on the last day of the Conference.

# DAY 1: CONFERENCE PROGRAMME

23 OCTOBER 2024

**REGISTRATION**

***08:00 – 09:00***

**Conference Secretariat**

## Session I: Official Opening

**9:00 - 10:30**

**Conference Chair**

- Welcoming by the Governor: Erongo Region
- Remarks by the Chairperson: Atomic Energy Board
- Remarks by the IAEA Representative
- Remarks by the Hon Minister of Mines and Energy
- Remarks by the Hon Minister of Health and Social Services
- Keynote Address by Vice President: Republic of Namibia

**Exhibition & Coffee Break**

**10:30 - 11:30** **All Participants**


## Session II:

**Global Perspective Of Nuclear Technology And Economic Development.**

**11:30 - 11:50** **IAEA**

Role of the IAEA in Development of Nuclear Technology and Technical Support

**11:50 - 12:10** **ROSATOM**

ROSATOM's Role in the Russian Economic Development

**12:10 - 12:30** **CNNC**

Nuclear Technology in the Context of China's Economic Development.

**12:30 - 12:50** **NECSA**

Nuclear Technology in the Context of South Africa's Economic Development.

**12:50 - 13:10** **Panel Discussion**

**13:10 - 14:00** **LUNCH**

## Session III:

**Uranium Resource Dynamics.**

**14:00 - 14:20** **NUA**

Uranium Exploration, Mining and Processing: Namibia's current and future prospects

**14:20 - 14:40** **Paulus Nangonya**

The Global Role of Uranium Nuclear Fuel Banks

**14:40 - 15:00** **AEB**

Value of Uranium Nuclear Fuel in the NFC

**15:00 - 15:30** **TEA/COFFEE BREAK**

**15:30 - 15:50** **AFCONE**

The role of AFCONE in accelerating Nuclear Science and Technology on the African Continent

**15:50 - 16:30** **Panel discussion**

**18:30** **COCKTAIL RECEPTION**

Venue: Swakopmund Hotel and Entertainment Centre

# DAY 2: CONFERENCE PROGRAMME 24 OCTOBER 2024

## REGISTRATION

**08:00 – 09:00** **Conference Secretariat**

## Session IV: Nuclear Science, Technology and Applications in Namibia

### *a. Radiation Medicine in Namibia, progress and prospects*

**09:00 - 09:20** **Dr Vera Uushona**

Namibia's overview of Nuclear / Radiation Applications in Healthcare

**09:20 - 09:40** **Ms. Kaino Haipinge**

Role of Key Professional in Advancing Radiation Medicine

**09:40 - 10:00** **Lesego Tsie (NTP)**

Application of radiation in medicine (nuclear medicine, diagnostic imaging and radiotherapy

**10:00 - 10:30** **Sello TS (NECSA)**

The production and use of the β- and Auger emitter, Tb-161, as the future radioisotope for cancer treatment.

**10:30 - 11:00** **TEA/COFFEE BREAK**

**11:00 - 11:20** **Biljana Marjanovic-Painter (NECSA)**

Establishing procedures for validation of kit-based radiopharmaceuticals for gallium-68 labelled peptides in PET imaging

**11:20 - 11:40** **Dr Abel Karera**

Enhancing radiation risk-benefit communication in pediatric CT imaging: Radiographers' experiences and implications for practice

**11:40 - 12:00** **Panel Discussion**

Opportunities in Radiation Medicine in Namibia

### *b. Namibia's Nuclear And Radio-analytical Capabilities.*

**12:00 - 12:20** **Mr. M. Hitila**

Overview of Nuclear /Radio-analytic Techniques and Application in Namibia

**12:20 - 12:40** **Mr Kevin Mwashuma**

Unlocking the Future: Advanced Radioanalytical Techniques for Next-Generation Nuclear Science Industry

**12:40 - 13:00** **Dr Casper Kamunda**

Gamma spectroscopy on the measurement of radionuclide contamination levels in edible plants

**13:00 - 14:00** **LUNCH**

**14:00 - 14:20** **UNAM/MAWLR**

A review of isotopes applications in hydrogeology in Namibia

**14:20 - 14:40** **Ms. H. Itamba**

Uranium Ore analytical services

**14:40 - 15:00** **Panel Discussion**

**15:00 - 15:30** **TEA/COFFEE BREAK**

### *c. Role Of Nuclear Techniques In Food And Agriculture*

**15:30 - 16:00** **Dr. Anton Wanga**

Overview of Applications of Nuclear Techniques and Food and Agriculture

**16:00 - 16:20** **Ofentse Moseki**

Gamma-radiation: induced variation on growth and yield-components to select optimal doses for breeding pearl millet programs

**16:20 - 16:40** **Mr. S. Hamutenya**

Nuclear Technology for Marine Pollution and Monitoring

**16:40 - 17:00** **Panel Discussion**

# DAY 3: CONFERENCE PROGRAMME 25 OCTOBER 2024

## REGISTRATION

**08:00 – 09:00** **Secretariat**

## Session V: Human Resource Capacity And Research Capabilities In Nuclear Science And Technology

**09:00 – 09:20** **Mr. S. Shimboyo**

Academic programs for Advancement of Nuclear Science in Namibia

**09:20 – 09:40** **NCRST**

Research, Innovation and Development Framework and linkages with the nuclear science and technology sector

**09:40 – 10:00** **Panel Discusion**

Role of Academia / Research Institution in the Advancement of the Nuclear Economy

**10:00 – 10:30** **TEA/COFFEE BREAK**

## Session VI: Nuclear and Radiation Safety

**10:30 – 10:50** **NRPA**

Nuclear / Radiation Regulatory Overview in Namibia

**10:50 - 11:10** **Ms. Nelao Endjala**

Effective Radiation Monitoring Programme at Uranium Mine

**11:10 - 11:30** **Prof Sylvanus Onjefu**

Health risk assessments of natural radioactivity in wasteland soils of Rundu dumpsite, Kavango region, Namibia

**11:30 - 11:50** **Mr. M. Hitila**

Indoor Radon: Pilot Survey case study of Ohangwena, Oshana, Kavango West/East, Oshikoto and Hardap

## Session VII: Conference Summary And Conclusion

**11:50 – 12:20** **Conference Chair**

Defining the Pathway Forward and Conference summary

**12:20 – 13:00** **Chair AEB**

Closing

**13:00 – 14:00** **LUNCH**

**14:00 - 17:00**

FIELD TRIP TO MINE

## END OF CONFERENCE


# LIST OF SPONSORS












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