Namibia is currently ranked the fifth-largest producer of uranium in the world and is set to become the world’s second-largest producer once Swakop Uranium’s Husab Mine is fully operational. This will undoubtedly position Namibia as a major uranium mining hub and will see the industry playing a more significant role in the national and regional economies.

Uranium as a material, and its applications, are often controversial. Yet, nuclear reactors are still being built despite the growth in energy generation through renewable sources and despite highly publicized nuclear accidents. Several countries are pursuing uranium enrichment programmes. Although prices are currently subdued, it is highly likely that there will be continued and sustained demand for uranium for the foreseeable future.

This conference aims to bring together professionals in the uranium industry. A broad range of topics will be discussed, ranging from mining to some of the applications of uranium, and including safety, and post-operations closure and remediation issues. Innovations in the extraction and applications of uranium are constantly being made, and this conference provides a platform for the discussion of advances and for generating new ideas.

It is fitting that the conference takes place in Swakopmund, Namibia. Not only do Namibia and this town have much to offer in scenic beauty, but Swakopmund (apart from being a favourite seaside resort) is also the centre of uranium extraction in the country. Most mines are located in the Namib Desert, within easy driving distance of the conference venue. The oldest uranium mine, Rössing Uranium, celebrated its 40th anniversary last year, having commenced operations in 1976. Pre- and post-conference visits are available.

The Uranium 2017 Conference will bring together internationally and locally recognized experts, operating personnel, engineering providers, policy makers, R&D establishments, academia, as well as students, to explore how future uranium extraction technologies can:

- Assist in sustainable uranium extraction
- Lower energy costs
- Minimize the impact on the environment
- Play an enhanced role in the medical field

EXHIBITION/SPONSORSHIP
Sponsorship opportunities are available. Companies wishing to sponsor or exhibit should contact the Conference Co-ordinator.

FOR FURTHER INFORMATION PLEASE CONTACT:
Camielah Jardine • Head of Conferencing • SAIMM • Tel: +27 (0)11 834-1273/7 • E-mail: camielah@saimm.co.za • Website: http://www.saimm.co.za
TECHNICAL VISITS
The following technical visits have been planned:
> Rössing Uranium – the longest-running uranium mine in the world and third-largest open-cast mine
> Langer Heinrich – was the first new uranium mine in 20 years on opening in 2007 and the lowest-cost open-pit mine in 2015.
> Bannerman Resources demonstration plant
> Viewing the geology of the Alaskite mineralisation in the lower Swakop river. Led by Prof. Judith Kinnaird and Paul Nex (WITS University)

SHORT COURSES
Two short courses on Nuclear medicine and radiopharmacy and on design of uranium processing plants will be offered.

The courses are accredited for Continuing Professional Development points with the Engineering Council of South Africa.

KEY DATES
26 May 2017 Submission of papers for peer review
11 August 2017 Submission of final camera-ready papers
11 September 2017 Short Courses and Technical Visit
12–13 September 2017 Conference
14 & 15 September 2017 Technical Visits

Langer Heinrich (courtesy of Paladin Energy)
General
Trends, developments and opportunities in the extraction and recovery of uranium
A. Taylor, ALTA Metallurgical Services, Australia

The impact of depressed uranium prices on the Namibian uranium industry
P. Shava and L. Madziwa, Namibia University of Science and Technology, Namibia

Mineralogy/Geology/Geometallurgy
Remaining uranium resources: where and how much?
M. Fairclough, International Atomic Energy Agency, Austria

Determining uranium mineral compositions through electron probe micro analysis
G. Freemantle and J. Kinnaird, University of the Witwatersrand, South Africa

Geometallurgy of gangue mineral–reagent interaction and implications for uranium heap leaching
R.J. Bowell, SRK, United Kingdom

Geometallurgy of the Manyingee in situ recovery uranium deposit, Western Australia
A. Wilde, University of Western Australia, Australia

Mining
Adjustment options in mine planning to survive low commodity prices - uranium
L. Madziwa, T. Ipinge, J.S. Addai-Mensah, and T. Hollenberg, Namibia University of Science and Technology, Namibia

Ventilation considerations in underground uranium mines
M. Pillalamarry, Namibia University of Science and Technology, Namibia

Implementation of drilling and blasting improvements in calcrite formations at Swakop Uranium Mine
T. Aipanda, Swakop Uranium, Namibia

Minerals Processing
U-grade™: a technological breakthrough for surficial uranium ores
M.P. Hill, Marenica Energy Ltd, Australia

Innovation technologies that can be applied to uranium processing
C. O'Keefe, CIDRA Minerals Processing, USA

The separation of carbonates from uranium minerals by flotation for the Karoo Sandstone deposits in South Africa
K. Pillay, M. Diame, and S. Pillay, Mintek, South Africa

Evaluation of polythionate formation during uranium recovery from sulphide flotation concentrate
V. Yahorava and V. Bazhko, Mintek, South Africa

Flotation of gypsum and calcite from Trekkopje uranium ore
C. Magombdeze, L. Eimann, and A. Handuba, Namibia University of Science and Technology, Namibia

Leaching
Minimizing reagent and utility consumption in uranium agitation and heap leaching operations
G. Miller, Miller Metallurgical Services, Australia

Investigation of the impact of uranium mineralization on alkaline leaching conditions
S. Burling, M. Maley, and R. Ring, ANSTO Minerals, Australia

Uranium alkaline leaching: oxidative leach study of a uraninite-bearing ore
N. Syna and R. Ring, ANSTO Minerals, Australia

Heap leaching of uranium: the good, the bad and the ugly
J. Petersen, University of Cape Town, South Africa

Modelling of uranium leach kinetics
B.L. Sililo and D.R. Groot, Namibia University of Science and Technology, Namibia

Separation/Purification
Influence of radiation on a polypropylene membrane contactor used during membrane-based solvent extraction of uranium from nitric acid solutions
M. Fourie, W.C.M.H. Meyer, D.J. van der Westhuizen, and H.M. Krieg, Necnas, South Africa

Uranium recovery from H₂SO₄ eluates using strong acid cation resins
J. Bester, S. Corbet, S. Delameilleure, and E. Zaganiaris, Dow Water & Process Solutions, Netherlands, France

Uranium recovery from high chloride arid regions – treated water vs saline water
E.L. Forner, A. Naidoo, S.J. Archer, V.E. Coetzee and K. Soldenhoff, DRA Projects, South Africa and ANSTO Minerals, Australia

Uranium recovery from acid mine drainage generated by gold mines in South Africa
M. Kgaria and V. Yahorava, Mintek, South Africa

Removal of uranium at the low ppm or μg/L range – a possible solution to decontamination of active or depleted mine site effluents
J. Bester and S. Delameilleure, Dow Water & Process Solutions, Netherlands, France

Recovery of uranium from waste matrices and mine process water using weak-base polyamine functionalized ion-exchange resins
J. Amphlett, R. Foster, C. Sharrad, and M. Ogden, The University of Manchester, Korean Atomic Energy Research Institute, The University of Sheffield, UK, Korea

Uranium purification by ion-exchange resins in batch and column system
K. Skolo, Necnas, South Africa
Effect of impurities on the selective extraction and recovery of uranium from nuclear conversion plant waste
M. Potgieter, J.C. Barry, D.J. van der Westhuizen, and H.M. Krieg, Uranium Chemistry Group, Necsa, Membrane Technology Group, Chemical Resource Beneficiation, North-West University, South Africa

Nano-filtration technology for reagent recovery

Separation of contaminants from uranium by ion exchange and solvent extraction
R.J. Bowell, SRK, United Kingdom

Advances in precipitation
G. Wolfing, Adelaide Control Engineering, Australia

Plant Optimization
Applications of dynamic simulation for Husab Uranium Mine
A. Lebedev, J. Duvenhage, and J. Duvenhage, Lebedev Consulting, Swakop Uranium, South Africa, Namibia

Capacity upgrades and leaching circuit modifications at the McLean Lake mill
A. McCombe, Hatch, Canada

Rejuvenating the giant thickeners of yesteryear
A. Krassnokutski, South Africa

Optimization of the Rössing counter-current decantation circuit for high talc ore
C. Anderson, Hatch, South Africa

SOMAIR: Soon 50 years of uranium production in Niger
N. Durupt, Areva Mines, France

Nuclear
Behaviour and fate of uranium in high-level nuclear waste processing system
J. Addai-Mensah and H. Musiyarira, Namibia University of Science and Technology, Namibia

The shift from HEU to LEU for MTRs and the difficulties of U recovery from LEU fuel using wet chemical methods
J.S. Gama, J.C. Barry and P.L. Crouse, Necsa, University of Pretoria, South Africa

Projects
Preferred uranium–gold (U–Au) co-production approach to unlock value and create environmental sustainability of the Louis Moore tailings dump, near Giyani, South Africa
N.K. Singo and J.D. Kramers, University of Johannesburg, South Africa

Flowsheet development of the Karoo Uranium Project
A. Naidoo and S.J. Archer, DRA Projects, South Africa

The impact of phosphates on the Mkjuju River Uranium process flowsheet development
J. Schoepers and S.J. Archer, DRA Projects, South Africa

Uranium circuit development for a West African polymetallic deposit
A.J. du Toit, and S.J. Archer, DRA Projects, South Africa

Health and Safety
Challenges and opportunities for sustainable rehabilitation of abandoned uranium mines in Namibia
T. Lipinge, L. Madziwa, T. Hollenberg, and J. Addai-Mensah, Namibia University of Science and Technology, Namibia

Radiation exposures at Namibian uranium mines – what are the risks?
G. von Oertzen, Rössing Uranium Limited, Namibia

Advanced monitoring of dust emission at Rössing
B. Schleicher, Rössing Uranium Limited, Namibia

The Namibian Uranium Association, the environment and sustainable development
G. Schneider, Namibian Uranium Institute, Namibia

Radiation-related compliance – a practitioner’s perspective
D. von Oertzen, VO Consulting, Namibia

Water management in Namibian uranium mines
H. Musiyarira, D. Groot, and K. Harding, Namibia University of Science and Technology, Namibia, University of Pretoria, South Africa, University of the Witwatersrand, South Africa

Process water supply to uranium mines in Namibia: problems and solutions
H. Musiyarira, S. Mitropolskaya, and O. Kachepa, Namibia University of Science and Technology, Namibia

Investigation of magnesium potassium phosphate cement for stabilization of uranium wastes
S.M.M. Nelwamondo, W.C.M.H. Meyer, H. Krieg, and J. Markgraaff, Necsa, North West University, South Africa

Investigation of magnesium potassium phosphate cement for stabilization of uranium wastes
S.M.M. Nelwamondo, W.C.M.H. Meyer, H. Krieg, and J. Markgraaff, Necsa, North West University, South Africa
SHORT COURSE: URANIUM ORE PROCESSING

11 September 2017
Swakopmund Hotel, Swakopmund, Namibia

in conjunction with

URANIUM 2017 INTERNATIONAL CONFERENCE
Extraction and Applications of Uranium — Present and Future

OUTLINE OF TOPICS

> Uranium Ores and Minerals
> Implications of Mineral Composition
> Pre-Concentration
> Pre-Roasting
> Leaching Mediums
> Acid Leaching of Uranium Minerals
> Carbonate Leaching of Uranium Minerals
> Leaching Processes
> By-Product Uranium Recovery Processes
> Key Process Operations and Equipment
> Ion Exchange
  • IX Resins
  • IX Systems
> Solvent Extraction
  • SX Extractants
  • SX Contactors
> Product Recovery Processes
> Testwork and Scale-Up
> Keys to Successful Project Development
> Grade Control
> Special Health and Safety Issues
> Development of an Agitated Acid Leach Project

ABOUT THE PRESENTER

Alan Taylor has 40+ years’ experience in the metallurgical, mineral and chemical processing industries in Australasia, New Zealand, North and South America, Africa, Asia and Europe. He has worked in metallurgical consulting, project development, engineering/construction, plant operations, plant start-up and technology development. Projects and studies have involved copper, gold/silver, nickel/cobalt, uranium, base metals, phosphates and alumina.

Alan presents public and in-house short courses and is most well known for convening the annual ALTA conference series in Australia that attracts delegates from around the globe.

Alan graduated with a Bachelor of Science in Chemical Engineering (Honours) from Durham University, UK, and is registered as an AusIMM Chartered Professional Metallurgy.
HALF-DAY WORKSHOP:
NUCLEAR MEDICINE AND RADIOPHARMACY

11 September 2017
Swakopmund Hotel, Swakopmund, Namibia

in conjunction with
URANIUM 2017 INTERNATIONAL CONFERENCE
Extraction and Applications of Uranium — Present and Future

OUTLINE OF TOPICS
> The uranium cycle for medical isotope production
> From uranium to fuel plates used for research reactors
> Medical isotope target plate manufacture
> Irradiation of target plates in a research reactor
> Extraction of fission products from irradiated uranium
> Conversion to LEU based Mo-99 production
> Different reactor routes to manufacture Mo-99
> How Mo-99 benefits patients
> Basic principles of radiopharmacy/radiolabeling
> Tc-99m based radiopharmacy
> Introduction to nuclear medicine

ABOUT THE PRESENTER
Jan Rijn Zeevaart received his PhD from the prestigious Tegniese Universiteit Delft in the Netherlands in 2001. In 2002 he was appointed as head of the Radiochemistry group at Necsa (South African Nuclear Energy Corporation). Since 2006 he was also appointed as extra-ordinary associate professor at the North West University, and since 2011 in the School of Pharmacy. He is the NTeMBI coordinator and the NuMeRI (Nuclear Medicine Research Infrastructure) champion.

His research disciplines are radiochemicals and radiopharmaceuticals, and he has a keen interest in exploiting these disciplines in designing new radio- pharmaceuticals. He has been involved in several phase 0 clinical trials and is the principal investigator for the $^{195m}$Pt-cisplatinum and phase IIa clinical trials currently underway.

He is the co-author of about 50 international publications, approximately 100 conference contributions (some as keynote or plenary speaker) and is credited with 6 patents. He is/was the study leader for 20 MSc and 13 PhD students as well as 5 postdoctoral fellows.
**URANIUM 2017**
**INTERNATIONAL CONFERENCE**

**Extraction and Applications of Uranium — Present and Future**

11 September 2017 — Short Courses and Technical Visit
12–13 September 2017 — Conference • 14 & 15 September 2017 — Technical Visits
Swakopmund Hotel, Swakopmund, Namibia

**REGISTRATION FEES** — All prices are inclusive of VAT.

Please indicate your choice by (✓) tick.

<table>
<thead>
<tr>
<th>Early registration fees Before 31 July 2017</th>
<th>Registration fees After 1 August 2017</th>
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<tr>
<td><strong>Author</strong></td>
<td>R8 000</td>
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<td><strong>SAIMM Members</strong></td>
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<tr>
<td><strong>Non Members</strong></td>
<td>R8 700</td>
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<tr>
<td>** Students/Retired Members**</td>
<td>R4 500</td>
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**REGISTRATION ONE DAY:** R5 999

Tuesday 12 September 2017 ✓ Wednesday 13 September 2017 ✓

Delegates may also attend the conference for ONE day only

Please indicate (✓) tick which day you will be attending.

**Half-Day Workshop by Jan Rijn Zeevaart:** Monday 11 September 2017

Nuclear Medicine and Radiopharmacy: R2 999

**Short Course by Alan Taylor:** Monday 11 September 2017

Uranium Ore Processing: R5 000

**Conference:** Tuesday 12 September 2017 – Wednesday 13 September 2017

**Technical Visits:**

Monday 11 September 2017 – Bannerman Resources demonstration plant and viewing the geology of the Alaskite mineralisation in the lower Swakop River: R500

Thursday 14 September 2017 – Rössing Uranium: R600

Friday 15 September 2017 – Langer Heinrich: R500

- Registration fees include: attendance at technical sessions, cocktail party and conference dinner, all refreshments and lunches; abstract booklet with CD of all papers presented at the conference, and delegate material.
- Registration fees exclude: travel, accommodation and conference proceeding book.

Delegates will receive an electronic copy of the proceedings

**Proceedings Book**

Please note: Proceedings books are not printed for delegates at the Conference. Delegates who require proceedings books should notify us not later than 14 August 2017 - there is an additional cost of R1 500.

**Cancellation and transfer policy:**

Delegates unable to attend the event may send a substitute delegate in their place.

Please send written details of substitution. Written cancellations must be received more than 10 working days prior to the date of the event and will be liable for 50% of the event fee. Failure to cancel, or cancellation received 10 working days or less prior to the event date, will result in liability for the full event fee.

**Social Functions**

- Welcome cocktail party (Monday – 11 September 2017)
  Please indicate (✓) tick for catering purposes if you will be attending any of the social functions (included in the registration fee for fully registered delegates and students).
- Payment required for additional guests only R250 each
- Dinner (Tuesday – 12 September 2017)
  Please indicate (✓) tick for catering purposes if you will be attending any of the social functions (included in the registration fee for fully registered delegates and students).
- Payment required for additional guests only R500 each
- Special requirements — Please advise of any special requirements for diet, health or physical disabilities.

**Payment**

Please include payment itemised as follows:

- Conference registration fee R...
- Conference One Day (R5 999) R...
- Cocktail function (R250 extra guest) R...
- Dinner (R500 extra guest) R...
- Half-Day Work Shop (R2 999) R...
- Short Course (R5 000) R...
- Proceedings Book: (R1 500) R...
- Technical Visits: (R500 each) R...

**TOTAL R**

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**Credit Cards** — Please debit (✓) tick my:

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- Mastercard
- American Express
- Diners Club

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CVV authorisation (last 3 digits on the back of the card)

Expiration date:

Signature:

Please print name of cardholder:

2 ECSA CPD points will be allocated to all delegates attending the Conference
1 ECSA CPD point will be allocated for attending the Uranium Ore Processing Short Course
0.5 SAGI CPD point will be allocated for attending the Half-day Work Shop

Would you like to become a member of SAIMM?

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E-mail: camielah@saimm.co.za (Head of Conferencing) or anna@saimm.co.za (Registration)