



Discussions involving the 92nd element in the periodic table, uranium, tend to elicit mixed reactions. Although uranium plays a key role in the production of medical isotopes, it has the dark side of being the power in highly destructive nuclear weaponry. Strong positive and negative viewpoints emerge when nuclear reactors and their wastes are considered. Fortunately, the Uranium 2017 International Conference that took place in Swakopmund, Namibia (11 to 15 September 2017) did not generate quite such strongly opposed views.

The conference, with the theme *Extraction and Applications of Uranium – Present and Future*, brought together professionals in the uranium industry. A broad range of topics was discussed, ranging from mining to some of the applications of uranium, and included safety, as well as post-operations closure and remediation issues. Innovations in the extraction and applications of uranium are constantly being made, and the conference provided a platform for the discussion of advances and for generating new ideas.

We were fortunate in being able to organize the conference in cooperation with the International Atomic Energy Agency (IAEA), the Namibia University of Science and Technology (NUST), the Namibian Uranium Institute, and the Canadian Institute for Mining, Metallurgy and Petroleum (CIM). The IAEA sponsored two delegates from the region. Generous support was received from our sponsors Protea Chemicals Namibia, CiDRA Minerals Processing, AECI Mining & Chemical Services, AEL Mining Services, DRA Projects SA, IMP Automation SA, Naminsol Namibia, Bannerman Resources, Langer Heinrich Uranium, Rössing Uranium, MEI Media, ALTA Metallurgical Services, Lanxess Ltd, Purolite Ltd, and SNF Floerger SA.

The conference started with a day where delegates could choose between a short course on *Uranium Ore Processing* led by the well-known Alan Taylor (ALTA Metallurgical Services), or a technical visit. The visit *Viewing the geology of the alaskite mineralisation in the lower Swakop River* was led by Professor Judith Kinnaird and Paul Nex (Wits University), and included a visit to the Bannerman Resources demonstration plant. The day ended with a well-attended cocktail function. The next two days (Tuesday and Wednesday) were full days, with a combined plenary session for keynote lectures each day, followed by two parallel sessions. The last two days offered further technical visits to Rössing Uranium Ltd and to the Langer Heinrich uranium plant.

Swakopmund is a holiday town, in an interesting position: it lies between the shore of the Atlantic Ocean on the western side and the fascinating Namib Desert on the east. Its German origins are still very visible, dating from the early 20th century. For instance, the conference venue was the original Swakopmund railway station.

The conference dinner was held on the Tuesday evening, with the Namib desert providing an interesting and unusual setting. A caravan of 4x4 vehicles took us along the Swakop river to our venue. Fortunately, the cold desert air was mitigated by good company, food, patio heaters, blankets, and fun entertainment.

Attendance was good, with more than a hundred delegates, of which 15 were from the UK, Australia and Europe. Participation from the local uranium mines was disappointing, but understandable due to the extremely tight financial environment they are currently operating in.

Opening addresses were presented by the Namibian Deputy Minister for Mines and Energy, the Hon. Kornelia Shilunga, Professor Selo Ndlovu (SAIMM President), Mr Hilifa Mbako (Namibian Uranium Association Chairman) and Professor Tjama Tjivikua (NUST Vice Chancellor). Four well-received keynote lectures were delivered:

- *Remaining uranium resources: where and how much?* Dr Martin Fairclough, IAEA
- *Uranium in Namibia – past, present and future.* Mr Werner Duvenhage, Rössing Uranium Ltd
- *The Namibian Uranium Association, the environment, and sustainable development.* Dr Gabi Schneider, Namibian Uranium Institute
- *Will fission Mo-99 production be seriously impacted through other efforts to diversify the supply of Mo-99?* Dr Jan-Rijn Zeevaart, NECSA.

In addition, 40 technical papers and 5 poster papers rounded out the technical content of the conference.

This edition of the *Journal* carries a vignette of selected contributions from the conference. These focus mainly on metallurgical processing – as did the conference – without neglecting the broader issues such as the safe containment of nuclear waste. While the processes for leaching (alkaline or acidic), concentration and purification, and recovery are well established, challenges still

abound, as may be seen from these papers. Complex mineralization, as well as process water, often present considerable impediments to the processing circuits. Several conference papers discussed the possibilities of using saline waters, and even seawater. The high chloride levels impact on the separation processes and on plant equipment, and the papers discuss a number of innovations to meet these challenges. Other topics include improved on-line measurements for plant control and the optimization of plant equipment.

At present uranium mining is under pressure due to low prices and processing challenges. However, if this conference was a stethoscope gauging the health of the uranium industry, it indicated a still strongly beating heart.



The exhibition area at the conference

D. Groot