ALTA 2016 Conference Report

ALTA 2016 was held 21-28 May in Perth, Australia.

The event was well-attended with 207 attendees from 25 countries, despite the industry downturn. It was a great opportunity to reconnect with familiar faces and to welcome the 40% who attended an ALTA conference for the first time. We thank all participants for contributing to its success.

The 21st annual ALTA conference was opened by Conference Convenor, **Alan Taylor**, Managing Director, ALTA Metallurgical Services.

The parallel exhibition included 25 exhibitors from 7 countries. An additional 50+ people visited the exhibition, which was open to the public again this year.

The event was supported by 17 sponsors, co-sponsors and partners.

Attendees and visitors took full advantage of the networking opportunities offered during breaks as well as the Welcome Reception, Conference Dinner and Happy Hour events.

Ken Baxter, VP Technology; Director of Hydrometallurgy, SNC-Lavalin Group (Australia), kicked-off the Nickel-Cobalt-Copper sessions with his Keynote Address: "*Are We Any Closer to Hydromet Overtaking Smelting for Copper Sulphide Concentrates*" (available from ALTA Free Library).

His main conclusion was that Hydrometallurgy is unlikely to take over from smelting as the primary means of producing copper from clean sulphide concentrates; however there are niche applications where hydrometallurgy is a serious technical and commercial option for consideration.

The sessions featured a presentation from **Dr Bryn Harris**, NMR360 (Canada), on "*Innovation, Sustainability and the Future of Metals Extraction"*, in which he challenged the industry to embrace a paradigm-shift in the way we carry out metals extraction (available from ALTA Free Library).

Featured projects included Ambatovy nickel/cobalt laterite HPAL project (Madagascar), Cosmic Boy (Australia) and Mondo Minerals (Finland) nickel sulphide tank bioleaching projects, and Tuwu Copper Mine (China) heap leaching project.

The *Hydromet Processing of Sulphides Forum and Panel* discussion included presentations on removal of impurities from base metal concentrates, tank bio-oxidation of nickel concentrates, pressure-oxidation of complex copper concentrates, alkaline glycine leaching of chalcopyrite concentrates, and decanter centrifuges for sulphide leaching applications. Other topics included treatment of sea-bed nodules and crusts, nickel/cobalt laterite process and equipment developments, in situ leaching, copper tailings leaching, and SX/IX/nanofiltration process and equipment developments.

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Dr Yeonuk Choi, Senior Manager, Strategic Technology Solutions, Barrick Gold Corporation (Canada) gave the Gold-PM Keynote Address: "*Selecting the Best Process for the Treatment of a Refractory Gold Ore - Barrick's Experience*" (available from ALTA Free Library).

He emphasised that the choice of process, in most cases, will be site specific, influenced by the metallurgical and mineralogical characteristics of the ore and as well as capital and operating costs. He illustrated this using Barrick's Goldstrike operations where a number of processes have been applied including the newly developed thiosulphate leaching technology.

Featured projects in the Gold-PM sessions included Goldstrike thiosulphate leaching project (USA), Syama Expansion (Mali), and CGT Gekko G-REX IX operation (Australia).

The *Refractory Gold Ores Forum and Panel* discussion included presentations on comparison of pretreatment methods, ore characterisation, additives to inhibit preg-robbing, autogenous thiosulphate generation and leaching, glycine-cyanide leaching synergies, behaviour of arsenic, and role of polythionates on stability of gold in thosulphate leaching. Other topics included project development, small scale mining, processing of high clay ores, agitators for abrasive ores, gold IX, glycine leaching of e-waste, process control, modelling and optimisation, and alternatives to cyanide leaching.

Featured projects in the Uranium-REE sessions included Kayelekera and Langer Heinrich uranium nanofiltration operations (Malawi and Namibia), Mulga Rock uranium project (Australia), Kvanefjeld REE and uranium project (Greenland), Syerston scandium project (Australia), and Mt Catalin lithium project (Australia).

The *Membranes in Uranium Ore Processing Forum and Panel* discussion included presentations on process membranes in the mining industry, nanofiltration for reagent recovery, and nanofiltration in hydrometallurgy. Other topics included developments in uranium extraction and recovery, uranium and REE project and process development, extraction of uranium from brannerite, uranium ore heap leaching, REE ore roasting, REE recovery technology, scandium processing and recovery, lithium processing, and uranium/REE IX and SX process development.

There were three pre and post-conference short courses presented by **Alan Taylor**: *A-Z of Copper Ore Leaching*, *SX and its Application to Copper, Uranium & Nickel-Cobalt*, and *Uranium Ore Processing.* The courses were attended by 32 people from 10 Countries.

ALTA 2016 technical proceedings and short course manuals are available from www.altamet.com.au.

We are now receiving abstracts for **ALTA 2017 Nickel-Cobalt-Copper, Uranium-REE and Gold-PM Conference & Exhibition** to be held 20-27 May in Perth. The conference will feature Forums and Panel discussions on *Pressure Acid Leaching*, *Lithium Processing*, and *Refractory & Complex Ores*. Three short courses are scheduled: *Treatment of Nickel-Cobalt Laterites, Copper SX/EW Basic Principles and Detailed Plant Design* and *Heap Leaching & its Application to Copper, Gold, Uranium & Nickel Ores.* www.altamet.com.au/conferences/alta-2017

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