

The MMTA's International Minor Metals Conference

Toronto 2015

Members and non-members of the MMTA joined a great line-up of speakers in Toronto last month for the MMTA's International Minor Metals Conference. A vibrant and rapidly growing city, Toronto was the perfect location to hear about the future demand of minor metals in the aerospace, electronics, battery and alloy industries.

Bill Bihlman of Aerolytics LLC opened the event with his presentation on 'Aerospace material and manufacturing evolution'. Bill looked at some of the engineering considerations for material selection in aerospace, and predicted that future demand for

titanium would remain strong. United Technologies Corporation continued the aero theme with a look at engines. Steve Cicalone estimated that 62,000 more engines will be required by the aerospace industry over the next 20 years, with nickel alloy and titanium alloy demand to grow extensively over the next 7 years. Titanium was also cited by Alcoa's Boyd Mueller, VP

Research & Technology, as the fastest growing aerospace material, he highlighted that geo-political risks are the greatest potential threat to future titanium supply.

5N Plus, First Solar and Tri-Star Resources focused on electronics and new technologies

in the second session. Michael Benson from 5N Plus outlined how new applications will impact the demand for electronic metals. The photovoltaic, tellurium and

LED markets were illustrated, wrapping up with a look at the trend of miniaturisation and the particle size required for use in micro solders and pastes.

Jigish Trivedi, VP Technology Integration at First Solar, began with a visual comparison of the abundance of solar energy in comparison to other renewable resources. He stated that cadmium telluride (CdTe)

has the lowest carbon footprint of all solar technologies and has greatly improved its manufacturing processes in recent years.

Emin Eyi of Tri-Star Resources touched upon critical raw material status and its

effect on R&D from the perspective of an antimony producer, as well as the growth in antimony and its connection to gold and other precious metals. Emin finished with the information that the USGS is tasked to identify and quantify critical mineral resources throughout the US within 4 years.

Malcolm Harrower from Indium Corp talked about how indium production outside China had increased by about 15% over the past 3 years. Reinforcing the First Solar presentation, Indium Corp stated that solar energy is now a genuinely competitive source of energy which includes indium in the form of CIGS (copper indium gallium selenide) cells. Personal electronic devices are a big user of indium with indium gallium zinc oxide (IGZO) developed by



Sharp now used in many smartphones and tablets enabling very high-pixel-per-inch counts. Malcolm also spoke about the Fanya Exchange and the reported 3600 tons of indium stocked there which equates to 7 years' supply. The effect of this stock on the market is of concern to the indium industry.

CNIA's (China Non-ferrous Metals Industry Association) Tang Wujun talked about China's indium, bismuth and germanium industry with some interesting insights into the production and usage of these materials, including the development and outlook of China's indium, bismuth and germanium market, as well as the policies related to these materials.

The presentations and business meetings were complemented by social events, with a particular highlight being the Hockey Hall of Fame, where delegates enjoyed the ice hockey museum and interactive games as well as drinks and hockey themed canapés.

The second day opened with the topical subject of batteries. Jon Hkyawy, President and Director of Canada-based consultancy, Stormcrow, gave the audience a detailed overview of lithium batteries with even conservative forecasts for lithium batteries predicting we will be using 160,985 MWh by 2025



(Avicenne). Current demand for lithium remains strong and is one of the few materials to have a strong price curve even through the global recession.

Anthony and Suzannah Lipmann gave an entertaining and informative presentation on rhenium and hafnium, both small but nevertheless important markets.

Hafnium has a myriad of uses, with the superalloy industry its biggest destination. The presentation included a look at historical prices from Lipmann's own data, as well as how the rhenium market was saved by recycling.

AVX Corporation closed the presentations with Bill Millman looking at tantalum capacitors, the secret to the small, powerful computing devices we now take for granted. Bill talked in depth about the responsible sourcing of tantalum and how the company works directly with mines in the DRC to guarantee 'conflict-free' material without abandoning the region. This system is known as the AVX Closed Pipe model.

The MMTA and Metal Events would like to thank the sponsors of the conference, in particular 5N Plus for their sponsorship of the drinks reception at the Hockey Hall of Fame, as well as the speakers and attendees for making it both an educational and highly enjoyable event.

