
From 2nd to 3rd of February 2016 the annual Conference in Minerals Engineering was held in Luleå, organised by the Mineral Processing group at Sweden’s northernmost technical university, Luleå University of Technology (LTU). The interest in the conference was, even in these difficult economic times for the mining industry, on the same level as in the previous year. 67 delegates coming from seven different countries in Europe met during the coldest days of the year in the Luleå city hall assembly room where normally the municipal council is in session. The conference technical programme comprised a total of fifteen presentations plus a keynote address.

Keynote speaker Chris Broadbent from Wardell Armstrong International.

After welcoming the delegates the convenor of the conference, Professor Jan Rosenkranz, gave a short overview on ongoing research projects and new developments in mineral processing at LTU. The introduction was complemented by information on LTU’s education in minerals engineering from docent Bertil Pålsson. Pär Weihed, professor in ore geology at LTU, gave a talk on the second stage of the Centre of Advanced Mining and Metallurgy at LTU (http://www.ltu.se/centres/camm).

This year’s keynote address was given by Dr Chris Broadbent, one of the directors of Wardell Armstrong International, a UK based engineering consultancy. In his talk Chris gave an overview on “Best Practice in ESIA: Practical Observations” out of the context of a European H2020 project focussing on flexible and mobile technology for processing of skarn, greisen and pegmatite ores that bear several critical raw materials (http://fame-project.eu/).

The further technical programme covered recent research work and developments within academia and industry. Within a session on REE, Jason Jang from the Finnish Geological Survey presented a case study on mineralogy and beneficiation of REE bearing syenites from Lamujärvi, Finland. Sergey Kirillov, Ural Federal University, reported results from test work to extract REE from solutions received from in-situ uranium leaching. A contribution from Christina Wanhainen and Bertil Pålsson, both LTU, shared new insights on the REE Mineralogy of LKAB’s apatite-iron ores that resulted from another European project (http://www.reecover.eu/).

The second session addressed process mineralogy and metallurgical test work. Saija Luukkanen, the new professor in mineral processing at University of Oulu in Finland, discussed common pitfalls in feasibility studies. Jens Gutzmer, director of the Helmholtz Institute for Resource Technology in
Freiberg and professor in economic geology, described his perspective on the geometallurgy of iron ores, while Thomas Leissner, TU Bergakademie Freiberg, presented a new methodical approach to the assessment of liberation distribution and separator performance.

On the second day the programme started with the topic area of comminution. Erik Niva from LKAB gave a report on the recent development of the grinding circuits at LKAB’s concentrator plant KA3 in Kiruna. How to increase productivity and efficiency by new crusher technology was shown in a case study presented by Tord Nordén from Sandvik Mining. Åke Sandström, professor in hydrometallurgy at LTU, gave an overview on mechanochemical treatment including innovative concepts as for instance leaching while grinding.

Contributions in the field of new flotation technology referred to modular plant design as presented by Luis Rudolphy, and to the performance of large flotation cells as described by Toni Mattsson, both from Outotec Oy. Lisa Malm from Boliden Mineral AB presented the findings from a sampling campaign to determine the material distribution within the flotation cells at the Aitik concentrator, a study conducted within the framework of the Strategic Innovation Programme for the Swedish Mining and Metal Producing Industry (http://www.sipstrim.se/).

In the last session on process modelling, Mehdi Parian from LTU presented a particle and mineralogy based model for a magnetic separator. Johannes Quist from Chalmers University of Technology gave a talk on the challenges when building a DEM model for HPGR. Finally Maria Sinche Gonzales, guest researcher at LTU, described the prototype of a geochemical water balance model.

Besides the technical programme with interesting presentations, there were opportunities during the several breaks to exchange and discuss innovative ideas, results and experiences. The conference dinner took place on the evening of the first day. This time, the dinner was held in the foyer of Luleå’s theatre, combining a festive meal of bleak roe followed by reindeer flanks and Swedish dryckesvisor with the wonderful view of the frozen northern harbour.

The conference preprints 2016 are being re-edited at the moment and will soon be made available on a proceedings CD (mineralteknik2016@ltu.se). Next year’s Conference in Minerals Engineering has already been scheduled. Welcome back to Luleå on the 7th and 8th of February 2017!

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