

# The International Committee for Study of Bauxite, Alumina and Aluminium (ICSOBA)

In the sixties of the last century Europe had quite a number of bauxite, alumina and aluminium producers, and the Croatian Academy of Science in Zagreb initiated in 1963 the foundation of 'Le Comité International pour l'Étude des Bauxites, de l'Alumine et de l'Aluminium' – abbreviated by the English name ICSOBA. This committee provided the desired forum for exchange of science and technology between representatives of bauxite, alumina and aluminium producers and research institutes from countries like Austria, France, Germany, Greece, Hungary, Italy and the former Soviet Union and Yugoslavia. The rationale behind the organisation was to promote the contacts and exchange of scientific information between professionals being active in the 'East' and the 'West'. Mr Papastamatiou from Greece was the first president of ICSOBA.

Later the seat of the organisation moved from Zagreb to Budapest, where it was hosted by the Hungarian Mining and Metallurgical Society (OMBKE) and thrived for many years under the management of the executive director, late Mr Károly Solymár. Conferences were held annually or biennially, mainly in Europe, but as of 1977 also in Jamaica, Brazil, Iran, Russia, India and Canada and the proceedings have been published in so called 'Travaux' of ICSOBA. However, with the change of the political regime in Eastern Europe in the years 1990/91 and the depletion of European bauxite resources and related decline of alumina and aluminium production in the late 20<sup>th</sup> century, it became increasingly more difficult to keep ICSOBA alive. The organisation seemed to run towards the end of its life cycle, at least in Europe.

In India on the other hand, some bauxite, alumina and aluminium projects had just started and more were being considered. Therefore during ICSOBA's 2008 Congress in Bhubaneswar, India, it was decided to move the seat to this emergent country. Subsequently new presidency members were elected and a new office was set up in Nagpur.

## Recent events in China and India

In November 2010 a symposium was held in cooperation with Chalco R&D Centre in Zhengzhou, China, that attracted over 300 delegates, with about equal numbers from China and abroad. Both specific Chinese and



Images: ICSOBA

ICSOBA 2010 Symposium in Chalco's Zhengzhou R&D Centre

more general topics were addressed as was reflected by key note speakers from three different continents as well as by the technical papers presented in parallel sessions on bauxite, alumina and aluminium/ carbon.

The special 'New Technologies' session not only presented specific new technologies, but also enhanced awareness of how the role of dedicated technology suppliers has become increasingly more important in developing and introducing new technologies for the industry.

Many delegates took the opportunity to visit Chalco's R&D Centre and nearby operations including a bauxite floatation plant, an alumina refinery and a 400 kA aluminium smelter. In line with ICSOBA tradition, the evenings were filled with joint dinners and beautiful cultural programmes providing glimpses of China's rich cultural heritage and enhancing this already very successful event.

The red mud disaster in Hungary strengthened the belief that better management of solid residue from alumina refineries is a challenging and an exciting opportunity for the industry and a good reason for organising a dedicated seminar on this topic. The resulting Bauxite Residue Seminar was held in October 2011 in Goa, India, and attracted over 130 delegates from 26 countries. Following the key note presentations 34 papers were presented in three technical sessions: 1) Bauxite residue characterisation, 2) Bauxite residue processing, storage and storage area rehabilitation and 3) Bauxite residue as feedstock.

The Seminar's round table discussion resulted in a formal 'Summary and Conclusions' document that was published in several aluminium magazines and used as an input during this year's bauxite residue workshop

at the Alumina Quality Workshop in Perth. The document can be downloaded from ICSOBA's website ([www.icsoba.info](http://www.icsoba.info)).

A boat trip in the evening with dinner and traditional Indian dance performance provided an excellent opportunity to familiarise with old and new delegates in the convivial ICSOBA at-

mosphere. The concluding excursion to the rehabilitated storage area of Hindalco's Belgaum refinery demonstrated that red mud stacks can be beautifully re-vegetated.

Following the successful Bauxite Residue Seminar in India the seat of ICSOBA was moved again and since December 2011 the organisation is legally registered in Canada as a non-profit association of members.

**The objective of ICSOBA** – to promote the exchange of ideas and results of work from different fields of research and practice related to bauxite geology, exploration and mining, to alumina refining and aluminium production from different places on the globe – is not unique. And with numerous bauxite, alumina and aluminium conferences all over the world and all year around, does the industry need this organisation? Apparently the answer is "Yes", but why?

A key feature of ICSOBA is its practice of rotating the venue of international events to regions that are important for the global aluminium industry. This way the regional del-



Belgaum's rehabilitated bauxite residue storage area



Delegates from eight countries and five continents having lunch together after the visit to Hindalco's Belgaum operation

Delegates have the benefit of reduced travel time and costs resulting in more regional delegates to participate in an international event, which is good for their professional development. The international delegates have the benefit to familiarize with the aluminium industry of the selected region. As a snowball, ICSOBA gathers new members from countries where an event was held and as a consequence members include representatives of the traditional players, of companies in the BRIC countries, and from countries with emerging bauxite-alumina-aluminium industry, such as Vietnam, Indonesia and certain African countries. In short ICSOBA matured to a truly international organisation.

Secondly, ICSOBA addresses issues that are particularly relevant to the industry, as illustrated by the recent Bauxite Residue Seminar. The speaker programme of an event is carefully created and quite often experts are asked to address a specific subject in order to compose interesting clusters around hot topics, such as waste, energy, recycling or new technologies. By combining contributions from aluminium producers, universities, technology suppliers and service companies, different views on aspects of a subject are presented.

And finally, ICSOBA is an independent non-profit association of members, not only formally in the way it is registered as legal entity, but also in practice. In addition to the valuable work done by the staff of ICSOBA's executive office, much of the work is done by volunteers, including Presidency and Council members, resulting in relatively low conference fees. Due to the custom of having all meals included in the

event, there is ample time for establishing new contacts and re-establishing ties with old friends and counterparts from around the globe.

A first-time ICSOBA delegate summarised his impression after the Bauxite Residue Seminar as follows: "I liked the casual ambience and ease with which I could approach colleagues never seen

before to talk about red mud matters. It was a convenient and cosy gathering of friends and colleagues presenting an excellent broad overview of the state of affairs of all aspects of modern red mud management; well organised, accompanied by good food, a boat trip at night and an interesting excursion to a nearby alumina refinery."

#### Upcoming events in Brazil and Russia

In 2013 ICSOBA will celebrate its 50<sup>th</sup> anniversary during its 20<sup>th</sup> International Symposium that will be held in cooperation with the International Congress and Exhibition of Non-Ferrous Metals Siberia, in September 2013 in Krasnoyarsk, Russia. The location is of special interest for its proximity to Siberia's huge aluminium smelting and hydroelectric power generating facilities.

For 2012 it was decided to organise a symposium in Belém, in the north of Brazil, in recognition of the country's achievements in the aluminium industry. This 19<sup>th</sup> International Symposium will take place from 29 October to 2 November 2012 in cooperation with Hydro and with support of ABAL, the Brazilian Aluminium Association, and ABM, the Brazilian Metallurgical Association. ICSOBA's previous Brazil symposium was in 1988 in São Paulo,

with a plant visit to Poços de Caldas.

As concerns the Brazilian aluminium industry, the recent integration of Vale's aluminium business with Hydro illustrates the importance of Brazil within the global aluminium industry. Presently the country accounts for 14% of the world's bauxite, 10% of the world's alumina and 4% of world's aluminium production. Brazil's untapped bauxite resources are massive and will serve as basis for future industry developments. Future alumina refining will be readily served by the recently developed Paragominas and Juruti mines. The large Trombetas bauxite mine is famous worldwide for its high bauxite quality and its successful mine rehabilitation programme. Brazil pioneered bauxite transport by pipeline, from the Paragominas mine to the Alunorte refinery, a distance of 250 km. This technology will see increasing use as new bauxite developments are located in more and more isolated areas.

Alunorte, with a production of 6.3 million tpy is the world's largest alumina refinery. The nearby CAP project, although recently postponed, foresees the construction of a similar alumina production giant and Votorantim's project for a mine and refinery will further develop Pará state into one of the world's major bauxite and alumina production centres. Other refining operations include CBA in Poços de Caldas and near Sorocaba, and the recently expanded Alumar refinery in São Luis, now producing 3.5 million tpy in two huge digestion units.

The 8,400 MW Tucuruí hydroelectric power plant, the world's fourth largest facility, feeds the Albras and Alumar aluminium smelters. Other smelting operations include CBA near Sorocaba, Alcoa in Poços de Caldas and Novelis in Ouro Preto.

The ICSOBA Symposium in Belém Hilton hotel will kick-off with welcome drinks on the evening of Monday, 29 October 2012. The speaker programme will be on 30 and 31 October with plenary sessions covering topics of general interest and three parallel technical speaker programmes for bauxite, alumina, and aluminium & carbon. The central hall will house an exhibition. Following the speaker programme, Hydro will host field trips to its Pará operations – the Alunorte refinery, the Albras smelter and the Paragominas bauxite mine with its bauxite pipeline. More information can be found at [www.icsoba.info](http://www.icsoba.info).

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Paragominas bauxite transport pipeline