

IBAAS 2013 Report

IBAAS-CHALIECO 2013

IBAAS-CHALIECO symposium on '**Present Status and Future Prospects of Bauxite- Alumina-Aluminium Industry of the World, with Special Reference to China**' was a grand success and highly appreciated for the technical content. Over 150 participants from 15 countries (including about 25 delegates from India) have participated in this symposium. During the three day conference, about 70 presentations on various aspects of bauxite, alumina & aluminium were delivered and intense discussions took place. IBAAS and CHALIECO are actively addressing several relevant issues associated with the development of this industry and disseminate latest R&D achievements in this field. The papers were compiled by Technical Committee of IBAAS & CHALIECO for the present proceedings.

The Organizers of IBAAS-CHALIECO symposium would like to express their thanks to all the sponsors, co-sponsors, supporters, advertisers, delegates and all those connected with the organization of the event for their unhesitating help and unflinching co-operation in organizing this conference in Nanning, China.

This symposium was inaugurated by Mr. He Zhihni, President CHALIECO on 28th November in Nanning. Mr. He talked about the spectacular growth of aluminium industry in China and large potential of technological cooperation. In the opening ceremony Mr. Ron Knapp of International Aluminium Institute talked about the excellent growth of aluminium industry in China and emphasised the need for innovation and R&D to further bring down the consumption and environmental imprints. He also insisted on the "Sustainable Development" of the Industry with more technological innovations. Mr. Vinod Sood – President, IBAAS in his key note address informed about the increasing role of India in alumina-aluminium production in the days to come with a SWOT analysis. Hilbert N. Shield, President and CEO of First Bauxite informed the forum on their preparedness to start metallurgical bauxite mining in Guyana and also confirmation of sintered bauxite (Proppants) production in the country. Mr. Zhu Jiaming, General Manager of Technology Dept of Chalieco, presented the technical achievement of Chalieco in the past years and future innovation plan considering the challenge faced by the industry. Mr. Liu Baowei, Vice President of Guangxi Branch of Chalco, introduced achievement in applying lean design and management of alumina refinery in various aspects in his presentation.

Leading experts of CHALCO and CHINALCO have shown a glimpse of the alumina – aluminium industry and its status including technological improvements being undertaken in the various fields of energy conservation, alumina refining, and low grade bauxite utilisation by a new

process, improving consumption parameters etc. Mr. H Mahadevan, Vice President, IBAAS in his lecture had dwelled on the Status of the positive and negative developments in the Indian Aluminium Industry in comparison to the China, why the country missed the bus for development of the Industry on many occasions, risks being faced at various stages of the Project, opportunities expected to materialise in the near term, etc. and concluded that in-spite of various hurdles being faced by the Project proponents, the Aluminium Industry is compelled to overcome these and grow in the near future for the sake of the various stake holders especially the general public.

On the second day of IBAAS-CHALIECO International Symposium on Bauxite, Alumina & Aluminium in China; Russell Williams of Navasota Resources Inc. informed that they are in possession of about 700 Million to 1.5 Billion tons of high grade bauxite resources in Guinea and also discussed the ready infrastructure plan. Mr. Vyas of GMDC has taken the International audience to Gujarat showing high grade bauxite potential of the state and ready feasibility to set up Greenfield alumina refinery. Dr. Yves Occello of Amber Development, France has shown the possibility of upgrading the low grade bauxite of China by adopting partial calcination and leaching of ore (removal of silica). The white calcium silicate residues, in place of usual red mud, is environment friendly, have potential use in industries and also reduces the cost of alumina production by RMB150 per ton. Dr. Jayasankar of IIMT, Bhubaneswar has shown the way of red mud utilisation especially for pig iron and Portland slag cement production by thermal plasma technique. Ms. Summer Qi of Australia Minerals and Mining Group Ltd. informed the audience about the readiness of their company to produce high purity alumina from white clay of Western Australia. Paper presenters of Outotec, Germany; GEA Process Engineers, CHALIECO and Cytec Industries USA have shown new developments in their fields covering energy reduction, methods of improving plant operations / availability etc. The heat recovery presentation of Chinese calciner by Mr. Jin Gang has evoked good interest among delegates.

Mr. Yi Xiaobing from Chalieco presented the research in MPPIC control concept in pot operation which could lead to better operation of reduction cell. Mr. H. Tremblay from Hatch introduced production system and MES in optimizing operation in primary aluminum smelter. Mr. Zhang Henghai from Shanghai Hengyang Instruments Technology Co. Ltd. introduced a new type of refractory design in anode bake furnace which could reduce energy consumption in baking. Dr. Chen Xiping presented the progress in recycling solid waste from pot room. Couples of presentations in the field of downstream were also delivered.

The presentations during the day gave very strong impression that research in improving operation and management of production as well as improvement in environment protection

become more and more important in the aluminium industry. The open discussions on technical subjects made second day of IBAAS-CHALIECO conference quite fruitful for delegates.

On the last day of IBAAS-CHALIECO International Symposium on Bauxite, Alumina & Aluminium in China; interesting papers on alternate routes of aluminium production and alternate source of aluminium were presented. The presentations on “Low Temperature Aluminium Carbothermic Smelting Process” by Gregory Smith of Calsmelt Pty Ltd, Australia and presentation on “A Potential Technology for Production of Aluminium and Alloys by Carbothermal Reduction of Bauxite” by Dr. Guangqing Zhang of University of Wollongong evoked widespread interest among delegates and intensive discussions took place on the latest development of this subject. Further papers on production of alumina from fly ash in the Inner Mongolia by Gong Yanbing and paper on “Study on Alumina Extraction from Pulverized Fuel Ash by Mixed Calcination of Pulverized Fuel Ash & Ammonia Sulfate” by Li Laishi showed excellent developments in Mongolia and China to use alternate sources of alumina production. It is anticipated that in the next 5 years period, China will be able to use these new technologies to utilize vast fly ash resources and replace part of costly imported bauxite. Further presentations on “Bayer Process Production Technology for Low-grade Diasporic Bauxite” by Li Ming also attracted attention of alumina technologists.

In the smelter and aluminium downstream session presentation by Fu Changhong on “Industrial Application of 420kA High-amperage Prebaked Anode Pot” was widely appreciated. In the same series, a paper on “Development and Application of Large Aluminum Reduction Cell Technology in China” by Zhou Dongfang revealed home grown Chinese technology for large scale metal production. Further on downstream and marketing side a presentation by Su Xiaoxin on the topic “To promote Aluminum consumption market, to consolidate the cornerstone of aluminum industry” has shown new directions of aluminium uses in China.

In the concluding session of IBAAS-CHALIECO conference, chairmen of various technical sessions, leading delegates and organisers summarised work of various sessions and suggested steps to further improve this International event. The conference was widely appreciated for excellent technical papers, simultaneous presentations in English / Chinese, efforts of ANTAIKE and services of professional interpreters. It is suggested to hold next IBAAS-CHALIECO symposium in India and continue to organise these useful technical events on Bauxite, Alumina & Aluminium in Asian countries.

About Exhibition & Plant Visit:

During the conference, an exhibition of Aluminium Industry was organised at the venue of Symposium. About 8 companies including CHALIECO, Shandong Jingjin Environmental Protection Equipment Co., Ltd., ABB have participated in this exhibition and have shown latest developments in the field.

After this successful conference, plant visit to Bauxite Mine and Alumina Refinery of CHALCO Guangxi Branch, was organised for the delegates. This was widely appreciated by International delegates.