

IBAAS = CHALIECO = SINR

International Symposium 2015

**SOUVENIR**

November 25-27, 2015  
Worldhotel Grand Dushulake  
Suzhou, CHINA

THE DEVELOPMENT  
AND FUTURE OF  
ALUMINIUM INDUSTRY  
IN CHINA  
*Reality and Dream*

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# International Bauxite, Alumina & Aluminium Symposium



## IBAAS-CHALIECO-SINR-2015

### SOUVENIR

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NOVEMBER 25-27, 2015

Suzhou, China

## Participating Companies in IBAAS-CHALIECO-SINR-2015

*Encouraging response has been received from several companies and experts for the contribution of technical papers/ presentations in this symposium. Some of the participating companies of IBAAS-CHALIECO-SINR-2015 Symposium are:*

- ✦ Aditya Birla Group, India
- ✦ Aditya Birla Science and Technology Centre, India
- ✦ AICircle, Singapore
- ✦ Alcoa.Kunshan Co. Ltd, China
- ✦ Alnan Aluminium Co. Ltd., China
- ✦ Aluminium India 2015
- ✦ Amber Development, France
- ✦ Andru Minerals, India
- ✦ Archean Chemical Industries P Ltd., India
- ✦ Atlantic Mining, Guinea
- ✦ Axis Mineral Resources, UAE
- ✦ Bureau Veritas Minerals Pty Ltd., Australia
- ✦ CHALCO, China
- ✦ CHALIECO, China
- ✦ China Hongqiao Group Limited
- ✦ China Nonferrous Metal Industry Association, China
- ✦ China Zhongwang Holdings Limited
- ✦ C.I.M Mining. Bauxite Mine Owner And Manufacturer, Turkey
- ✦ CINF, China
- ✦ CM Group, Australia
- ✦ CNPT, China
- ✦ CRU Group, London
- ✦ Culrea Consultancy, Ireland
- ✦ Cytec, USA
- ✦ Dalian University Of Technology, China
- ✦ ECL™ Shanghai, Rio Tinto Trading (Shanghai) Co., Ltd, China
- ✦ Engineers & Planners, Ghana
- ✦ Flsmidth Private Limited, India
- ✦ Fujian Nanping Aluminium Co.,Ltd., China
- ✦ GAMI, China
- ✦ General Research Institute for Nonferrous Metals, China
- ✦ Gimpex Limited, India
- ✦ Glory Pacific Bauxite, Korea
- ✦ Guizhou Chalco Aluminum Co. Ltd., China
- ✦ Guangdong Haomei Aluminium Industry Ltd. Co,China
- ✦ Guangxi Hezhou Guihaim Aluminium Industry Ltd. Co, China
- ✦ Henan Zhongfu Special Aluminium Co. Ltd., China
- ✦ Huolinhe Coal Co. Ltd., China
- ✦ Integrity Mining Corporation Pvt Ltd., India
- ✦ Jiangsu Alcha Aluminum Co.,Ltd., China
- ✦ Jiangsu Daya Aluminum Industry Co. Ltd, China
- ✦ Jingjin Environmental Protection Inc., China
- ✦ Jiuquan Iron & Steel(Group) Co. Ltd, China
- ✦ JNARDDC, India
- ✦ Luoyang Huazhong Aluminium Co. Ltd., China
- ✦ Luoyang Wanji Aluminium Processing Co. Ltd., China
- ✦ Maheswari Minerals, India
- ✦ Mitsubishi Corporation, Japan
- ✦ Nanjing University of Science and Technology, China
- ✦ New Hongda Group, China
- ✦ Northeastern University, China
- ✦ Northwestern Polytechnical University, China
- ✦ Outotec, Canada
- ✦ PanAsialum Holdings Co. Ltd., China
- ✦ Prima Resources Minerals & Energy, Australia
- ✦ Qinghai Guoxin Aluminum Industry Incorporated Company, China
- ✦ Qinghai Investment Group Co. Ltd., China
- ✦ Refractories Window, China
- ✦ Rio Tinto, Australia
- ✦ RUSAL Aughinish
- ✦ RUSAL Engineering & Technology Center, Russia
- ✦ RUSAL, Russia
- ✦ SAMI, China
- ✦ Shandong Loften Aluminium Foil Co. Ltd., China
- ✦ Shanghai Datun Energy Resources Co. Ltd., China
- ✦ Shanghai Heat Transfer Equipment Co. Ltd., China
- ✦ SMMC, China
- ✦ Shivangi International, India
- ✦ Sierra Mineral Holdings, West Africa
- ✦ Simonsen A/S, China
- ✦ Skamol A/S, Denmark
- ✦ SRK Consulting (UK) Limited, UK
- ✦ Vedanta Limited, India
- ✦ Unimark International
- ✦ Xiamen Xiashun Aluminium Foil Co. Ltd, China

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## WELCOME NOTE IBAAS-CHALIECO-SINR 2015

On behalf of the organizing committee, it is my pleasure to welcome you to the fourth IBAAS (International Bauxite, Alumina & Aluminium Society) symposium, being held in Suzhou, China during November 25-27, 2015 in association with CHALIECO (China Aluminum International Engineering Corporation Limited). The conference is organized by Suzhou Research Institute for Nonferrous Metals (SINR). The title of the IBAAS-CHALIECO-SINR 2015 symposium is "**The Development and Future of Aluminium Industry in China - Reality and Dream**".

It is very easy to spread pessimism in the present highly depressed metal market where in Aluminium Industry is no exception, but the Organizers strongly feel that the low prices of aluminium and the depressed market sentiments must be taken as a challenge by the Industry. Further upgrading of alumina, smelting & downstream processes for enhanced productivity and reduced cost of production must be made on war footing. In this sphere, Chinese and worldwide aluminium industries and R&D centers are intensively working and these achievements are highlighted in this International symposium. The focus of this conference is also on the outstanding developments of aluminium downstream industry in China.

We welcome you to this symposium and are confident that you will be benefited from the technical presentations and networking opportunities with experts and industry professionals. The present souvenir compiles write up by organizers, sponsors, advertisement and the abstracts received for this conference.

***Wishing you all a pleasant and profitable time during the conference.***

***With best regards,***

***Organizing Committee of IBAAS-CHALIECO-SINR 2015***

**COMPANY PROFILES:**

**ORGANIZERS & SPONSORS**



## International Bauxite, Alumina & Aluminium Society (IBAAS)

IBAAS is an organization formed by professionals active in various fields of Aluminium industry, with its roots in India/Asia. The objectives of this society are as follows:

- Provide platform for Aluminium industry professionals to interact and network for the common goal and development of this industry
- Organize annual and bi-annual workshop, seminar and conferences in association with primary Aluminium producers, Engineering and R&D Institutes
- Represent primary Aluminium Industry as an independent Organization
- Promote latest technology and advertise products and equipment.
- Publish, papers, monographs and books to highlight latest achievements in the field
- Facilitate technology transfer and compile a list of experts available in the field

The Society was established in 2012 and is committed to promote the development of Bauxite, Alumina and Aluminium industry in the Asian region. The Society has since then organised 3 International events in India and China, details are given below:

- **IBAAS - 2012:** First International symposium of IBAAS on the topic 'Bauxite, Alumina and Aluminium Industry of Asia – Vision 2020', December 3-5, 2012 in association with JNARDDC (Jawaharlal Nehru Aluminium Research Development & Design Centre) in Nagpur, India with a special emphasize on non-metallurgical bauxites and alumina products.
- **IBAAS - 2013-** Second International symposium of IBAAS on the topic "Present Status and Future Prospects of Bauxite- Alumina and Aluminium Industry of the World, with Special Reference to China", November 28-30, 2013 in association with **CHALIECO** (China Aluminum International Engineering Co., Ltd.) and **ANTAIKE** (Beijing Antaike Information Development Co., Ltd) in Nanning, Guangxi, China.
- **IBAAS-2014-** Third International symposium of IBAAS on the topic "Technological Improvements & Market Developments in Aluminium Industry with Special Reference to Value Added Products of Bauxite, Alumina and Aluminium" in Visakhapatnam, India during November 27-29, 2014.

The above three International events were highly successful and evoked wide interest of Aluminium industry and experts in the IBAAS symposium and conferences. In continuation of above three conferences, this year IBAAS is organizing fourth International event (**IBAAS-CHALIECO-SINR 2015**) in Suzhou, China during November 25-27, 2015.



## China Aluminum International Engineering Corporation Limited (CHALIECO)

China Aluminum International Engineering Corporation Limited (hereafter referred to as CHALIECO), established on the December, 2003, is the 4<sup>th</sup> business section of Aluminum Corporation of China (CHINALCO) – Engineering Technology Section and appeared on Hongkong Stock Market on the July, 2012. CHALIECO possesses proprietary technology in terms of alumina, aluminum, magnesium, titanium, copper, lead, zinc, manganese, molybdenum, etc and has rich experience about design and project general contracting. CHALIECO has 3679 domestic patents and 33 international patents, and got 608 awards regarding National Science & Technology Progress and National Excellent Engineering Design. In China CHALIECO has designed and constructed 15 alumina refineries with total capacity of more than 20 million tons, 133 aluminum smelters with total capacity of more than 10 million tons and many refineries such as copper, lead, zinc, manganese, molybdenum.

CHALIECO has five design & research institutes of National Grade A and 5000 engineers who have rich experiences and constitutes one team full of creativity. It owns five construction enterprises with rich experiences of engineering construction on nonferrous metal industry. The turnover of CHALIECO on 2012 is 18.4 billion RMB with profit of 1.7 billion RMB.

CHALIECO has successfully exported the technology and design about above-mentioned metals to countries such as India, Vietnam, Iran, Malaysia, Kazakhstan, Azerbaijan, Mongolia, Venezuela, etc. along with the exportation of numerous proprietary equipment. Especially CHALIECO has designed Lanjigarh 3 million tons alumina refinery of Vedanta Resources Corporation in India, which is the largest alumina project in the world in terms of construction scale and single stream scale completed one time. At present, CHALIECO is undertaking 2 alumina refineries with capacity of 650 kt/y in Vietnam by way of EPC contracting.

The business scope of CHALIECO covers:

- ❖ Project feasibility study;
- ❖ Technical consultant;
- ❖ Engineering design;
- ❖ Technical service on site;
- ❖ Procurement of equipment and materials;
- ❖ Project general contracting (EPC);
- ❖ Research and development on new technology and process

# SINR

## RUSAL: Leading Global Aluminium Producer

UC RUSAL is a leading global aluminium producer, accounting for approximately 7% of global aluminium production and 7% of global alumina production in 2014.



*Potroom at Khakass Aluminium Smelter, RA-300 Pots*

UC RUSAL is vertically integrated to a high degree, having secured substantial bauxite and alumina production capacity. UC RUSAL's assets include over 40 smelters and production facilities in 13 countries, across 5 continents.

The Company's current capacity is 4.5 million tonnes of aluminium, 15.3 million tonnes of alumina and 22.3 million tonnes of bauxite. UC RUSAL employs 61,000 people.

The Company's core smelters, located in Siberia, benefit from hydro generated electricity. Today approximately 95% of UC RUSAL's aluminium is produced using hydropower, which is environmentally friendly and does not generate any harmful emissions.

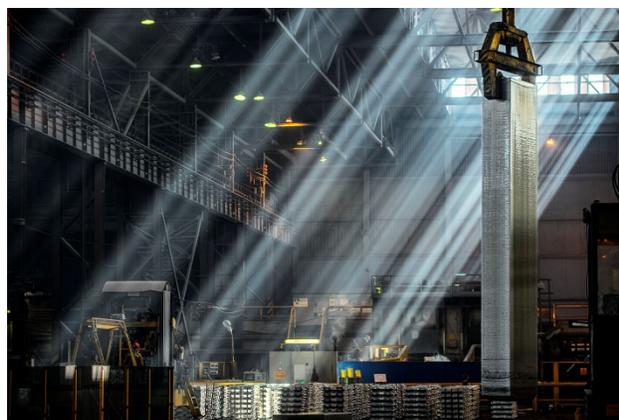
UC RUSAL has a particular focus on production of value added products (VAP), which account for approximately half of total metal produced. Key VAP modernization projects target automotive, construction and electricity sectors.

UC RUSAL is currently focusing on strengthening its competitive advantages, including its considerable raw materials base, access to renewable energy sources, proprietary R&D capabilities and proximity to key markets.

UC RUSAL owns a 27.8% stake in MMC Norilsk Nickel, the world's largest producer of nickel, palladium, platinum and copper.

The Company's key sales markets are Europe, Russia and the CIS countries; North America, South-East Asia, Japan and Korea. Our major end users consist of over 700 companies representing transport, construction and the packaging industries.

All production facilities of UC RUSAL are certified according to ISO 9001 and ISO 14001 international standards, suppliers to the automotive industry are certified according to ISO/ TS 16949. UC RUSAL is REACH, RoHS, ELV and SVHC compliant supplier.



*6xxx slabs, Sayanogorsk aluminium smelter*

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**INNOVATION**

**SECTION - I**  
**ABSTRACTS**

**BAUXITE &**  
**ALUMINA**  
**TECHNOLOGY**

# **Developments of New Bauxite Deposits in the World for Alumina Refineries and Export**

**Ashok Nandi<sup>1</sup>, Mayur Morkhade<sup>2</sup>**

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Nagpur 440033, India

## **Abstract**

With ever increasing demand of bauxite in China, several bauxite projects are being developed all around the world. Among them maximum number of bauxite projects are being developed in Africa particularly in Guinea, followed by Sierra Leone, Ghana, Cameroon and Madagascar. The Greenfield bauxite projects are also being developed in other parts of the world mainly in Australia, Malaysia, Brazil, Dominican Republic, India, Philippine, Laos, Fiji and Turkey. In the present papers, some of the interesting bauxite projects of these countries are described, which may feed to Chinese and other alumina refineries of the world in coming years. Attempt has also been made to assign ranking of bauxite according to their quality and demand in the world market.

**Keywords: New Bauxite Deposits in the World, Alumina Refineries, Export**

## **Madagascar Bauxite as an Alternative Source**

**Yves Ocello**

Managing Partner, Amber Development, L'isle sur la Sorgue, France  
Corresponding author: [yves.ocello@amber-development.com](mailto:yves.ocello@amber-development.com)

## **Abstract**

From Farafangana to Manantenina on the east coast of Madagascar Island an extensive exploration was carried out during the 1960's and in the early 1970's. One of the objectives of that campaign was to evaluate the bauxite resources and reserves of the Manantenina area where some extensive exploration, drilling and testing were conducted from 1967 to 1973. This deposit is now covered by exploitation permits and is an interesting option to supply China and eventually the Middle East. Holes and pits totaling 18 350 m. were drilled in such area. The Manantenina deposit is made up of gibbsite nodules within a clay and sand rich matrix. Recent studies undertaken have been based on such previous extensive exploration work and resource evaluations. Different scenarios were evaluated, based on bauxite mining and recovery percentages and on the basis of both crude and washed ore options. The current preferred option is washed bauxite for export. The key numbers are 200 Mt - 41 % available alumina - 1.3 % reactive silica. Location very close to the sea is a significant advantage. Furthermore, it is very easy deposit to mine: No overburden, no forest to clear, and 3 - 6 m thickness on average.

**Keywords: Madagascar bauxite; % of available alumina in bauxite; washed bauxite**

## **Application Prospects Analysis of Indian Imported Bauxite in China Alumina Refineries**

**Huang He**

(Guiyang Aluminum Magnesium Design & Research Institute, Guiyang, 550081)

### **Abstract**

From China bauxite supply & demand status, the essay analyses that China has continuously high bauxite demand due to continuous & fast development of China alumina industry, while China needs to import large amount of bauxites from overseas due to relatively insufficient bauxite resources. With implementation of Indonesia Bauxites Export Ban, China bauxites import diversification trend becomes more obvious, and India becomes the second largest bauxite importer of China. India has rich bauxites resources but relatively hysteretic alumina industry, so there is relatively bigger space for bauxite export. Compared to West Africa and South America etc., bauxite import from India has obvious transportation advantage, and decentralized import channels can ensure China safe bauxites resources supply.

**Keywords: India, bauxite, alumina, resources**

## **New Red Mud Flocculants for High Silica Bauxites**

**Dr. Dannon Stigers<sup>1</sup>, Dr. Huann-Lin Tony Chen<sup>2</sup>, Dr. Matthew Taylor<sup>3</sup>, Dr. Qi Dai<sup>4</sup>**

1. R&D Group Leader – Alumina Processing Chemicals at Cytec Industries Inc.
2. Principle Research Chemist – Alumina Processing Chemicals at Cytec Industries Inc.
3. Technology Director – Alumina Processing Chemicals and Industrial Minerals at Cytec Industries Inc.
4. New Product Development Director-China at Cytec Industries Inc.

### **Abstract**

The production of alumina from bauxite requires efficient separation of red mud residue in gravity thickeners to generate pregnant liquor with low solid content. As the quality of bauxite reserves continues to decrease due to increasing levels of reactive silica, more efficient flocculants are needed to prevent these solid-liquid separations from becoming production bottlenecks and increasing costs for alumina producers. Of particular concern is the decreasing performance of flocculants when high levels of desilication product (DSP) are produced in the Bayer process, which have been determined to be bound directly to the surface of Bauxite residue solids. Cytec's new CYFLOC® Si-7000 series of red mud flocculants have shown a unique ability to settle bauxite residues containing well over 5 wt% silica with excellent settling rates and impressive overflow clarities from field testing. The results will be presented to demonstrate the ability of this new polymer to handle the increasing silica content in

the bauxite while maintaining or even improving the current flocculation benefits to Alumina refineries.

**Keywords:** Flocculant, Red Mud, CYFLOC Si-7000, Cytec, High Silica Bauxite.

## **The Application of New Equipment and New Process in Bauxite Processing**

**Qing Linjiang<sup>1</sup>, Zhang Jiangan<sup>2</sup>, Chen Dianzhu<sup>3</sup>, Wang Xing<sup>4</sup>, Song Yan<sup>5</sup>, Deng Hong<sup>6</sup>**  
(Changsha Engineering and Research Institute Ltd. of Nonferrous Metallurgy,  
Changsha, 410007)

### **Abstract**

This paper introduces the effects of the commercial application of new and effective large-size equipment, including the drum washer, trommel washer with scrubber, flotation column, and high pressure grinding roller, and the new desilication processes of selective grinding-aggregation and selective grinding-coarse and fine fraction separation for the bauxite desilication during the bauxite processing. And the future development of the bauxite processing is pointed out.

**Keywords:** Bauxite Processing, Desilication, New Equipment, New Process

## **Analysis of Disaster-Causing Mechanism of Dolomite Karst Sandification & Study of Countermeasures**

**Zhang Aiheng<sup>1</sup>, Xu Dakuan<sup>2</sup>, Li Xiaoluo<sup>3</sup>, Zhong Zhaohong<sup>4</sup>**  
—Case of Maiba Bauxite Deposit of Guizhou Branch of Aluminum Corp. of China  
(Changsha Engineering & Research Institute Ltd. of Nonferrous Metallurgy)

### **Abstract**

Ever since the capital construction, the Maiba Bauxite Mine of Guizhou Branch of Aluminum Corp of China has been troubled by underground disaster of gush-out of mud and boiling of sand. The source of underground mud and sand has become the key factor for the selection of countermeasures. Through large amount of site investigation, sampling, and analysis, it has been preliminarily judged that the main source of underground mud and sand is dolomite sand, dolomite powder, and clay generated by karst sandification of Baizuo Formation and Gaotai Formation dolomite. Also, the mechanism of dolomite karst sandification has been analyzed in details. In combination with mine structural feature and hydro geological conditions, the groundwater flow field theory is applied for analysis, which deems that groundwater plays the key role in dolomite karst sandification and sudden inrush of mud and sand. Accordingly, it is proposed that the control of groundwater flow field is

critical for the prevention of dolomite karst sandification disaster...The method of draining depressurization can mainly be used for effective control and reduction of the hazard of underground inrush of mud and sand. In addition, some other auxiliary measures have been proposed, which has been proven quite effective in the practice.

**Keywords: dolomite sandification, disaster mechanism, groundwater flow field, countermeasures, draining depressurization**

## **A New Dry Red Mud Cake Stacking Process**

**Yang Xiaoquan**

(Guiyang Aluminum & Magnesium Engineering & Research Institute Co., Ltd, Guiyang, Guizhou, 550081, China)

### **Abstract**

This paper presents a new dry red mud cake stacking process, that's the end emissions stacking process. This new process has the following characteristics compared with the traditional front emissions stacking process: No main dam and no complex and difficult construction of vertical shaft--pipeline drainage system, which will save about 1/5 direct project costs of yard for enterprises; Putting the red mud from the upstream to the downstream fabric layer by layer, and rainwater reservoir area along the slope of red mud discharged in time outside the yard, so no risk of flood overtopping the dam and dam breaking happened , which is in favor of yard safety and environmental; Yard is divided into several zones and gradually phased construction and stacking on demand, which eases the initial investment pressure for enterprises; While stacking and while covering process, which reduces the amount of sewage caused due to rain, the pressure of sewage return to the factory and the possibility of environmental pollution owing to sewage outward leakage. Based on the above characteristics, the meaning of this paper is to provide an economical, safe and reliable new technology companies have chosen to red mud yard.

**Keywords: dry cake stacking process, the amount of sewage, barring slag dam, suitability**

## **Design and Application of Bauxite Automatic Crushing Control System**

**Cao Yu**

(Changsha Research & Engineering Institute Ltd. of Nonferrous Metallurgy, Changsha, 410007)

### **Abstract**

The application of PLC in bauxite automatic crushing control system is introduced. SIEMENS S7-300 series PLC product is adopted in Shanxi Xingxian Bauxite Mine. A mine crushing automatic control

plan is introduced from the aspect of design and application, and composed of PLC, transducer, level meter, belt, discharge trolley, and host computer. This article gives a detailed illustration of the hardware design methods and program design concepts in the control system. The automatic system is distributed, accurate, and controllable due to the application of PLC control technology and transducer control technology.

**Keywords: Crushing, Control System, Design, Application**

## **Design of Isolated Island Operation Power Supply System for Alumina Refineries**

**Huan Shuxiao**  
GAMI, China

### **Abstract**

The design of isolated island operation power supply system for large alumina refineries is expounded in this paper, based on power supply network, emergency power supply, and project construction organization etc.

**Key words: power load characteristics, power supply network, safety and stability**

## **Horizontal Belt Type Filter Press in the seed Decomposition of Alumina Production Practice and Improvement**

**Wen-wei Zhao**  
CHALCO, China

### **Abstract**

This paper is combined with the production practice of one alumina plant, introduced application of the horizontal belt filter in the seed filtration process of two stage precipitation, focused on the existing problems in its application, put forward solutions and implement and achieved good results.

**Keywords: seed, liquid-solid separation, horizontal belt filter, application, result**

## **Industrial Practice for the Control of Weight Loss on Ignition Regarding Baked Alumina**

Zhang Qinxuan

### **Abstract**

The paper describes the main factors to influence weight loss on ignition regarding baked alumina and proposes some solutions frequently-used in the industry.

## **Integrated Utilization of Digestion Flash Steam**

Xie Xiaoqiang

(Shenyang Aluminum and Magnesium Engineering and Research Institute Co., Ltd., Shenyang 110001, China)

### **Abstract**

Digestion is the main energy consumption section in alumina refinery. Commonly, flash steam in this process cannot be fully used during production, which induces energy waste. This article chooses the typical domestic alumina refinery and analyzes the currently utilization of the flash stream of dilution tank in digestion section and its existing problems and proposes the flash steam's comprehensive utilization plan. By using the spent liquor to absorb the flash steam, the heat of the flash steam is utilized, the condensate water of flash steam recovers and the operation environment improved as well.

**Key words:** Digestion, flash steam, spent liquor

## **Study on Level Detection Technology of Flash Evaporator in Digestion Shop of Alumina Refinery**

Chen Wen Tang and Daquan Wang Chunzhen

(GAMI, Guiyang, Guizhou, 550081)

### **Abstract**

In the digestion shop of an alumina refinery, the slurry level in flash evaporator shall be maintained in certain range, in order to ensure flash evaporation effect. However, due to the complex working conditions inside flash evaporator, such as high temperature, high pressure, scaling and steam etc., slurry level detection in flash evaporator has been always a technical difficulty of process parameter detection in alumina production. In this paper, the optimum level detection solution at present for flash evaporator is proposed based on the actual conditions of flash evaporation process in Chinese alumina refineries and the comparison of various level detection methods.

**Key Words:** alumina; digestion shop, flash evaporator, slurry level, detection technology

# **Study on the Pillar Arrangement Parameters for the Underground Bauxite Mining by Chamber-and-Pillar Method**

**Gan Huaiying and Duan Jinchao**

(Changsha Engineering & Research Institute Ltd.of Nonferrous Metallurgy, Changsha, Hunan, 410011)

## **Abstract**

Based on the orebed occurrence and rock mechanical property of Jiajiawaxi Bauxite Mine of Zhongzhou Mining Co., Ltd. of Chinalco, the size and arrangement parameters of the pillars with different support roof are defined by theoretical calculation. The reliability and feasibility of the parameters are verified through numerical simulation. Based on the comparison of simulation results of several schemes and the ore recovery in different scheme, the scheme is recommended as follows for the design of the stope support roof and pillars: support roof thickness of 0.3m, pillar strike span of 9.0m, inclination span of 9.0m, pillar short axis length of 3.0m, long axis length of 4.5m, which have been applied on the site with good results.

**Keywords:** bauxite; chamber-and-pillar method; pillar parameters; FLAC<sup>3D</sup> numerical simulation

# **The Establishment of Mathematical Model about Bauxite Equilibrium Transportation Based On Whole Value Chain**

**Jiangke Jin**

( Chalco Guagnxi Branch Pingguo Country Guagnxi 531400 )

## **Abstract**

Bauxite production and transportation is the beginning of Alumina production. Through mining, washing, crushing, storage, loading, transport, unloading, belt transport, distributing, grinding etc, bauxite into the alumina production process. Due to the expansion of production scale and the non renewable characteristics of bauxite, the mining area expanded continually. As a result of the regional grade differences of bauxite, how to ensure the homogenization of bauxite in the alumina process is an unavoidable topic. Transportation is the role of connecting, transportation not only a work task but also a value point in whole chain, equilibrium transport is nubbin of transportation, and truck assignment is the key of equilibrium transport. In this paper, the truck assignment mode well is discussed and established.

**Key words:** Bauxite transportation homogenize model

# Process Modeling of Alumina Trihydrate Precipitation Circuit

Vineet Pandey and Kumaresan T.\*

Aditya Birla Science and Technology Company pvt. Limited, Navi Mumbai, India

Corresponding author: kumaresan.t@adityabirla.com

## Abstract

Precipitation is a major rate determining step in the white side of Bayer alumina process. It consists of multiple growth phases like nucleation, crystal growth, agglomeration and breakage. Online real-time monitoring of precipitation process is cumbersome due to their slow kinetics and scale of operation. Process modeling thus becomes a handy tool for such studies. The present study aims at understanding the fundamentals of precipitation process and industrial production of aluminium trihydrate particles. The model investigates the effect of process parameters like temperature, concentration and seeding on nucleation, growth and agglomeration using SysCAD simulations. The modeling has been conducted using full particle size distribution (PSD) method with size dependent agglomeration kernel in 'Restricted in Space' equation applicable for dense systems.

**Keywords:** Aluminium hydrate, precipitation, nucleation, crystal growth, SysCAD

**SECTION – II**  
**ABSTRACTS**

**ALUMINIUM**  
**SMELTING**

# **Analysis on Energy Saving Technology of Aluminium Electrolysis Cell**

**Zhu Jiaming**

China Aluminum International Engineering Corporation Limited, Beijing 100093

## **Abstract**

Improving the technological and economic indicators of cell is a significant task in aluminium field in the long term. This paper discusses on the energy saving technology of aluminium electrolysis cell, analyzes factors that can affect the working voltage and current efficiency of cell one by one, thinks that controlling every step on cell design and operation to reduce the cell working voltage, improve CE and cut down the cost of production of aluminium as well as increase the technological and economic indicators of aluminium smelters.

**Key words: Aluminium electrolysis cell; Energy saving; Working voltage; Current efficiency**

# **Application of Patent Intelligence Analysis for Aluminum Industry Technology Innovation**

**NongGuoWu**

GuangXi Branch of CHALCO, PingGuo GuangXi ,531400

## **Abstract**

This paper introduce application of methods for patent intelligence analysis , and using methods of patent intelligence analysis establish enterprise technology innovation strategy for aluminum industry in implement process of technology innovation.

**Key word: technology innovation, patent intelligence analysis, aluminum industry**

# **Application Practice of Full-current Magnetic Reduction Welding Technology in 500kA Aluminum Overhaul Cell**

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Guiyang Aluminum Magnesium Design & Research Institute, Guiyang, Guizhou, 550081.

## **Abstract**

This essay introduces the application of full-amperage magnetic reduction welding technology & devices in 500kA aluminum reduction overhaul cell, and the practices demonstrate that this technology can weaken magnetic filed at target welding position effectively so that the common

welder can be applied in the potroom for welding operations among cathode connector bars, connector panels and explosive welding blocks of overhaul cell. And the essay also gives description & analysis on application of end cell in one cell line.

**Keywords:** full-amperage, magnetic reduction, drainage magnetic compensation device, riser busbar, downstream cell

## **Busbar Design for High Amperage Prebaked Anode Cell**

**YAN Feiya**

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### **Abstract**

This paper summarizes the development of the busbar design of large aluminum reduction cell in China, puts forward the design requirements of the large aluminum reduction cell from the aspects of magnetic fluid stability, electric balance design, operation safety, insulation and economy of busbar, and discusses the development trend of future electrolytic aluminum busbar design.

**Key words:** reduction cell, busbar design, magnetic fluid stability, electric balance, economic current density

## **China Carbon Production & Technical Development for Aluminum Industry**

**Gong Shikai**

Guiyang Aluminum Magnesium Design & Research Institute Corporation Ltd.

### **Abstract**

The essay introduces the mutual promotion and development relations between aluminum carbon materials (anode and cathode carbons) and aluminum production & technology, reviews the production and technical development history of China aluminum carbon materials, and puts up the direction and ideas for China aluminum carbon technology development.

**Keywords:** Aluminum carbon, prebaked anode, cathode, electrolytic aluminum, technology development, review, expectation

# **Current Efficiency and Control of Bath Temperature in High Amperage Aluminium Electrolysis Cells**

**Zhu Jiaming**

(China Aluminum International Engineering Corporation Limited,  
99 Xingshikou Road, Haidian District, Beijing 100093)

## **Abstract**

Many factors can affect on the current efficiency of the pot, but the temperature of the electrolyte is one of the key parameters. The temperature of the electrolyte must be controlled within an acceptable window of operation to ensure the stability and efficiency of the process. The bath temperature is affected by a number of factors such as the measurement error, manual operation... if we want to control the bath temperature better, we must think about these factors.

**Keywords:** Aluminium electrolysis pot; Current efficiency; Control of Temperature.

# **In-Depth Analysis of Lining Designs for High Amperage Electrolytic Cell**

**Zhou Jianfei<sup>1</sup> and Wang Yuequan<sup>2</sup>**

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<sup>2</sup>. Yunnan Aluminum Yongxin Coporation Limited, Jianshui, Yunnan

## **Abstract**

With the increase in market's demand and the development of technology, high amperage electrolytic cells in China have become widely used. In recent years, over 40 prototype cells each operating above 400 kA has been constructed. With different electricity prices in different regions and hence different cell heat balance requirements, a wide variety of lining design were tested, each having its advantages and disadvantages. This study aims to analyze and compare each lining design components in terms of cell productivity, energy efficiency, lining life and safety aspects in order to identify the most pertinent and rational design.

**Keywords:** cell lining design, cell productivity, energy efficiency, lining life, safety

# **Mechanics Property Analysis of Crust Breaker Unit for PTM**

**Yang Zhiqiang**

(Guiyang Aluminum Magnesium Design & Research Institute Co. Ltd , Guiyang 550081 , China)

## **Abstract**

PTM (pot tending machine) is the dedicated equipment for prebaked pot production in the pot room. The counterforce of crust surface to drill rod of breaker is obtained by analyzing the stress on

four-bar mechanism for breaker. The Solidworks Simulation finite element analysis (FEA) software is applied to the FEA of breaker unit. The results show that: ①the stress on upper bar of four-bar mechanism is bigger than that on lower bar; ②the maximum sum displacement of four-bar mechanism is about 45mm.

**Key words:** PTM; crust breaker; four-bar mechanism; FEA

## **Problems and Countermeasures of Fire Safety in Nonferrous Metal Processing Industry**

**Shi lei Gong xiao bo**

China Nonferrous Metals Processing Technology Co., Ltd.

### **Abstract**

Non-ferrous metal processing industry is developing rapidly, the industry influence is increasing, and the scale of non-ferrous metal processing enterprises is large, the rapid development of enterprises, resulting in the problem of fire safety is more and more. In accordance with the principle of "prevention first and combination of prevention and control", we should have a deep understanding of the fire hazard in the non-ferrous metal processing industry, and summarize the mature experience and profound lessons of the fire safety in the non-ferrous metal processing industry.

**Keywords:** non ferrous metal processing; fire safety; fire prevention; fire protection measures

## **Research and Application on Aluminum Reduction Cell Pre-stressed Shell**

**Wang Wei<sup>1</sup>, Zheng Pu<sup>2</sup>**

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### **Abstract**

Based on the pre-stressing technology research & application in the field of steel structure, this paper puts forward a new aluminum reduction cell shell technology, i.e. pre-stressed cell shell. By pre-stressing on cell cradle, the deformation amplitude of the prestressed cradle is changed, especially the tensile stress of diagonal rib panel significantly improved. which can improve the yield strength of the component. the technology improves significantly the cell structure performance, increases structure safety and reduces materials consumption, and is beneficial to prolong the cell life. In this paper, the technical principle of the pre-stressed shell is described, and its application prospect and economic benefit are analyzed in detail.

**Keywords :** Shell, cradle, pre-stressing force, economic benefit, application prospect

# **Study on the Influence on Thermal Field by the Entropy Change during Aluminum Electrolysis**

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National Engineering & Technology Research Center for Aluminum Magnesium Electrolysis  
Facilities, GAMI, Guiyang, Guizhou, China, 55000

## **Abstract**

In this paper, the minimum energy required for aluminum electrolysis based on the chemical reaction in molten salt system for aluminum electrolysis is discussed, and the physical, chemical and thermodynamic properties of complex electrolyte are summarized. The change regulation of complex electrolyte heat entropy change and cell thermal field can offer theoretic support for the development of energy-saving aluminum electrolysis technology characterized with low voltage and high efficiency.

**Key words: Aluminum electrolysis, reaction, entropy change, thermal field, energy-saving**

**SECTION – III**  
**ABSTRACTS**

**ALUMINIUM**  
**DOWNSTREAM**

# Study of Hot Deformation Behavior of 6016 Aluminum Alloy

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<sup>2</sup>CHINALCO Research Institute of Science and Technology, No.62, Xizhimen North Street, Haidian District, Beijing, 100082, China)

## Abstract

The hot deformation behavior of 6016 aluminum alloy was studied by hot compression test under the temperature range of 270°C~550°C and strain rate range of 0.1s<sup>-1</sup>~80s<sup>-1</sup>. The hot deformation activation energy was estimated as 158.5kJ/mol, and the constitutive equation and processing map were established. Results indicated that the softening mechanism was mainly controlled by dynamic recovery, and the dynamic recrystallization only occurred in the condition of 510°C~550°C and 0.1s<sup>-1</sup>~0.6s<sup>-1</sup>. The applicable hot rough rolling temperature range is 465°C~550°C and strain rate range is 0.1 s<sup>-1</sup>~15s<sup>-1</sup> for 6016 aluminum alloy. The applicable hot finish rolling entry temperature range is 450°C~550°C, and the exit temperature of hot finish rolling should be higher than 330°C. However, the exit temperature of hot finish rolling can also decrease to 300°C when the hot finish rolling strain rate lies in 20s<sup>-1</sup>~30s<sup>-1</sup>.

**Key words:** 6016 aluminum alloy, hot compression, constitutive equation, processing map

# Characterisation of AA6063 Billets for extruders

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## Abstract

AA6063 alloy is one of the most common alloys in the AA6XXX series which is used in extrusion industry due to its high extrudability, good surface finish and excellent anodizing characteristics; the alloy. It is typically used in pipe, railings, furniture, architectural extensions, truck and trailer flooring, doors, windows, pipes etc. In the present investigation metal quality is assessed at every stage of production e.g. pot purity, alloy additions, cast structure of billets, extent of homogenization and finally extruded components were characterized for the designated properties. Variation in the molten metal quality including alloying additions, impurities & inclusion were observed to ensure minimum variations in the billet quality for extruders. Homogenised billets were also characterized for extent of homogenization and broken AlFeSi Size; finally extruded components were also characterized to ensure the designated properties of AA6063 alloys were obtained in various thickness and tempers.

**Keywords:** AA6063 Alloy, Billet casting, Homogenisation

## **Analysis of Shape Aim Curve Setup for Aluminum Strip Cold Mill**

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### **Abstract**

Shape aim curve setup should compensate influencing factors such as temperature, coil form and detecting error, to ensure shape precision for application request. Some key influencing factors are analyzed in this paper, at the mean time, principle and method of shape aim curve setup is presented.

**Key words:** aluminum strip cold mill; aim shape curve; setup principle

## **Numerical simulations and validation for bearing length optimization in extrusion of AA6063 alloy**

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Mayur Mankar<sup>4</sup>, Anupam Agnihotri<sup>5</sup>

1. Scientist-III, 2. Scientist-II, 3. Scientist-IV & Head of Department, 4. Senior Project Fellow, 5. Director

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Amravati Road, Wadi, Nagpur, India-440023

### **Abstract**

Aluminium extruded profiles are extensively used for various applications that demand stringent quality norms. In order to meet the customer requirements and achieve desirable properties, process parameters in extrusion process have to be precisely controlled. In addition, the material flow during extrusion is very complex in nature that is not only dependant on bulk material properties of billet such as flow stress but is also influenced by design parameters of die. In a flat face solid die, bearing curve determines material flow across different regions of profile, aesthetics of the product and also contributes to the tonnage requirements of press. Consequently, bearing lengths in production dies are determined by skilled die designers, whose knowledge of flow is based on experience. Bearing length assignment for a solid die varies from designer to designer for the same profile and leads to number of trial runs to meet product quality requirements. The implicit knowledge of operators can be made explicit by using systematic approach for design of bearing dies. Numerical simulation techniques are one of the methods to scientifically design dies for reducing development time and also to increase product quality. In the present work, a scientific based systematic approach was employed to optimize the bearing curve of a solid profile using a FEM based software. Subsequently, die with optimized bearing lengths was validated on extrusion press which led to obtaining extrudate with desirable quality in the first tryout.

**Keywords:** Bearing length, Numerical simulations, optimization, metal flow, validation

## **Study of the Application of Multi-Stand Aluminium Hot Rolling Mill in China**

Cheng Chuanqi Han Zhengying

### **Abstract**

This paper introduces the development of multi-stand aluminium hot rolling mill in China, and analyses the special features of the foreign and Chinese manufacturers of multi-stand aluminium hot rolling mill, and illustrates the operation situations of these hot rolling mills in China as well. This paper also summarizes the achievements of CNPT in multi-stand aluminium hot rolling mill research combining the classification of different mill type. In the end, the paper studies the development tendency of multi-stand aluminium hot rolling mill.

**Keywords:** hot rolling mill, multi-stand, hot tandem rolling mill, rolling force

## **Super Thermal Resistant Al-Zr Alloy for Overhead Power Lines**

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### **Abstract**

To meet the ever increasing electricity demand, emerging economies are increasing capacity of the existing plants and also coming up with new units which implies that upgradation or uprating of the transmission and distribution (T&D) lines will be required with advanced technologies. Traditionally Aluminium Conductors Steel Reinforced (ACSR) is used in transmission lines which are characterized by their low permissible work temperature (~80°C). New generation high-temperature low-sag (HTLS) type conductors permit high working temperature (150 – 240°C) thereby enabling more current carrying capacity. JNARDDC is working on the development of super thermal aluminium alloys (STAL) required for manufacture of HTLS conductor cables. In the present work EC grade primary aluminium (0.07%Si & 0.14%Fe) and Al-5Zr master alloy are used to produce Al-Zr conductor alloy (STAL). In order to simulate the industrial wire rods casting, water cooled Cu-Cr-Zr linear mold is used. Cast bars with varying Zr concentration (from 0.1-0.30%) were produced and subjected to heat treatment process (300-550°C) followed by characterisation of electrical & mechanical properties. Initial experiments exhibit encouraging results where electrical conductivity is improved significantly (~58% IACS) within 48 hrs. Further, these cast bars will be rolled down to 9.5 mm wire rod to match

the industrial wire rod production system and similar heat treatment process will be implemented to obtain properties as per IE62004 specifications. Main emphasis of the research is to minimise overall production time by reducing the existing prolonged heat treatment process.

**Keywords:** Super Thermal Aluminium Conductor, STAL, HTLS, Al-Zr alloy

## **Development and Application of Shape Control System for Cold Mills**

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### **Abstract**

This paper describes development and application of shape control system for cold rolling mills. The system is composed of high performance controller, engineer stations, operator stations and so on. The shape controller acquires the measured values of shapemeter in real time, compares them with the target curve to get the shape deviation, then utilizes the optimization algorithm to compute the control outputs which will be sent to the shape control actuators such as the work roll bending, tilting, selective cooling. The shape control system has been used in the aluminum cold mill and copper foil mill to improve the shape performance and productions. The results show that the system is effective and stable, and can be applied to cold mills and foil mills of aluminum, copper and other non-ferrous metals.

**Keywords:** shape; control; nonferrous metals

**SECTION - IV**  
**ABSTRACTS**

**WASTE**  
**MANAGEMENT &**  
**UTILIZATION**

# **Modification and Valorization of Bauxite Residue: A Model of Beneficial Reuse and Long-term Social Value for China and India**

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## **Abstract**

The physical and chemical properties of bauxite residue have long been the subject of scientific investigation because the residue contains iron, aluminium, silica, titanium, sodium and other elements and compounds of potential value. In the last ten years, this investigation has centred not only on the recovery of valuable components but also on the various beneficial reuse possibilities associated with this type of waste, both as a way of reducing the amount of stockpiled waste as well as harnessing the inherent valuable components within it. As two of the largest producers of bauxite residue in the world, the China and India alumina industries have devoted a considerable research and industrial effort to developing alternate uses for this waste, and thereby to seek a long-term sustainable future of social value for the industry.

This paper considers not only the industrial, commercial and chemical imperatives which drive residue reuse in China and India, but also includes the regulatory, environmental, investment, research and social licensing dimensions (among other factors) of a complete and holistic future for the modification, valorization and beneficial reuse of alumina refinery residue. The paper argues that only through a comprehensive understanding and consideration of all aspects of bauxite residue can meaningful engagement with the broadest possible range of stakeholders be realized by society and industry, thus leading to a sustainable future for the alumina industry. Data on potential beneficial reuse applications and projected volumes of consumed bauxite residue in China and India are also provided.

**Key words: Sustainability, bauxite, alumina refinery residue, bauxite residue, beneficial reuse**

## **Process Optimization Research and Practice for Iron Extraction from Red Mud**

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### **Abstract**

This paper presents process optimization aim at the existing problem in the production of iron extraction from red mud in Chalco Guangxi Branch, sends tailing after separation back to feeding flow to over fulfill production target, efficiently recovery iron concentration ore from red mud, its yield reached 11.3%, efficiently realize comprehensive utilization for red mud. The optimization can be reference for the same industry.

**Key words:** red mud, iron concentration ore, iron extraction, strong magnetic separation

## **Technical Research for Iron Extraction from Pingguo Bauxite Slurry**

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Changsha mining and metallurgy design institute, Changsha, Hunan, China 410000

### **Abstract**

This paper presents lab test and industrial test for first extracting iron then extracting alumina technical scheme focus on the characteristic of Pingguo bauxite slurry. With the condition of iron content 14.64% in the slurry, strong magnetic iron concentrated ore with yield 9.09%, iron content 52.71%, recovery rate 32.74% can be achieved by one coarse separation and one strong magnetic separation process. The result shows for Pingguo bauxite slurry, using extracting iron first then extracting alumina technical solution can achieve certain separation result, it can be reference for the development and utilization of same type iron –aluminum symbiotic composite ore resource.

**Key words:** bauxite, slurry, iron extraction, strong magnetic separation

## **Treatment & Comprehensive Utilization of Red Mud of Alumina Refinery**

**Liu baowei**

(Chalco Guangxi Branch, Pingguo, Guangxi, China 531400)

### **Abstract**

This paper introduces the characteristic, disposal process and technical methods for comprehensive utilization of red mud of alumina refinery of Pingguo, Guangxi, China.

**Key words:** Bayer Process, red mud, dry method disposal, iron extraction, comprehensive utilization

## **Digestion Studies on Recovery of Alumina from Red Mud**

**C. Sateesh Kumar<sup>1</sup> & Bimalananda Senapati<sup>2</sup>**

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<sup>2</sup>Senior Vice President, Plant Head, Vedanta Limited, Lanjigarh, Odisha-766027, India

### **Abstract**

In India, due to continuous depletion of gibbsitic bauxite, non-grant of mining permission of gibbsitic bauxite ores, the remaining bauxite reserves shows high boehmitic content. With recent step increase in energy costs, alumina producers are looking for ways to process boehmitic or monohydrate bauxites that require higher digestion temperatures while keeping the energy costs low. Feeding such type of bauxite in low temperature digestion technology plants are deteriorating the alumina extraction, increases caustic consumption in an adverse manner. Vedanta alumina refinery located at Lanjigarh, India has adopted Low temperature (medium pressure) digestion technology due to availability of bauxite containing gibbsitic alumina content in the surrounding areas. Since captive mines are not operational, bauxite is being obtained from various sources with huge variation in quality, Mono Hydrate Alumina (MHA) ranging upto 3%-6%. To process such types of bauxite in an economical manner, Vedanta intends to modify the plant design and operating conditions to produce additional volumes with the same bauxite charge by improving the alumina recovery, leading to reduction in specific consumption of raw materials, less generation of red mud and facilitate the additional sourcing of domestic bauxite containing high monohydrate alumina. The results of detail digestion studies by using bauxite containing MHA >3% are presented in this paper and it is expected that these findings will lead to improved bauxite resource utilization minimize caustic consumption and helps towards viable alumina refinery operations.

**Keywords:** Digestion, Recovery, Red Mud and Monohydrate

## **Explore the Feasibility of X-Ray Fluorescence Spectrum Analysis in the Melting Method Determination of Red Mud**

**Zhu Hua**

Technology Centre of Chalco Guangxi Branch  
Pingguo County Guangxi Province

### **Abstract**

Using molten glass method for sample preparation, with the theory fixed  $\alpha$  factor correction element matrix effect, using X-ray fluorescence spectrometer in red mud alumina, Determination of silicon oxide, ferric oxide and titanium oxide, sodium oxide and magnesium oxide content. Results

comparing with tableting method, melting method accuracy and precision are better than tableting method, the relative standard deviation (RSD) less than 1.74% among these components.

**Keywords:** red mud, the melting, X-ray fluorescence, Theory fixed  $\alpha$  factor, Powder tableting

## **Value-Added Products from the Recycling of Aluminium Salt Slag**

**H. Epstein**

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### **Abstract**

The international aluminium industry faces increasing environmental pressure. One example is the disposal of salt slag, a hazardous waste generated by aluminium refining operations. In Western Europe environmental regulations prevent the land filling of salt slag. In other areas of the world, where salt slag is still dumped, growing environmental awareness is likely to require alternative routes to disposal.

Recycling is becoming an increasingly important source of raw materials. Aluminium salt slag may be recycled into three value-added outputs: aluminium metal; melting salt and an oxide material known as Valoxy.

Valoxy is rich in alumina. In certain applications Valoxy may be substituted for alumina or bauxite, significantly reducing raw material costs. Being derived from an established recycling process, Valoxy offers supply and price stability - a sharp contrast to the price variability of virgin material extracted from nature.

This paper summarises the aluminium salt slag process, its environmental importance and role as generator of incremental profit for companies in the aluminium supply chain. Various applications of the alumina-rich material, Valoxy, are surveyed.

# 华中铝业项目情况介绍 >>>



华中铝业有限公司  
Central China aluminium co.,LTD



洛阳华中铝业有限公司年产15万吨精密铝材加工项目，由伊龙科技实业（集团）有限公司与洛阳有色金属加工设计研究院联合投资兴建。项目主导产品为现代交通运输、航空航天、石油化工、电力电子、光伏能源、军工、高科技等行业用精密铝合金大型复杂断面挤压型材、管材及棒材等各类工业基材生产，生产装机水平跻身国内领先行业。项目为河南省“双百计划”重点项目、洛阳市、伊川县重点建设项目。项目建设地址位于伊川县产业集聚区东园，占地469亩，东距省会郑州148km，北临洛阳新区，附近陇海、焦枝铁路近在咫尺，连霍、二广、郑少洛高速公路交汇贯通，交通极为便利。周边地区主要原料电解铝以及电力、天然气供应充足。

项目由洛阳中色科技股份有限公司做总体设计、技术指导，于2011年1月经河南省发改委批复备案。项目计划总投资17.69亿元，建设规模年产15万吨（共二期），一期主要建设内容为年加工铝合金工业型材5万吨（包括：熔铸车间和7条年生产10万吨的挤压生产线及相关配套公用辅助设施）。

熔铸车间主要生产设备有：12吨熔炼保温炉组生产线2条，25吨熔炼保温炉组生产线2条；25吨均质炉、铸锭锯床、铸锭车锉床等设备。

挤压车间主要生产设备有：8MN、16.3MN、55MN单动正向、12.5MN双向反向、36MN、110MN、150MN双向正向共7条挤压生产线，20吨、10吨时效炉，18米3吨立式淬火炉，400吨、1200吨、2500吨、4000吨4台张力矫直机等配套辅助设备。



项目于2013年5月份在伊川产业集聚区开工，截止目前：1、建筑面积5590m<sup>2</sup>职工宿舍楼完工并已经启用；2、总面积13000 m<sup>2</sup>的办公楼、质检研发中心及职工食堂、浴室已完工；3、建筑面积20893 m<sup>2</sup>的熔铸车间、75023 m<sup>2</sup>的挤压车间及辅助设施已建成；4、主要设备订购已经全部到厂，其中熔铸车间12吨、25吨熔炼保温炉组主体安装完成。挤压车间分别为8MN、12.5MN、16.3MN的三台挤压机主机辅机及配套设施已基本安装结束，55MN主机与机后设备安装基本完成，36MN、110MN、150MN挤压机主机已经开始安装。截止2015年8月，项目累计投资为9.5亿元。

目前，8MN~16.3MN三条挤压线将在年内试生产，四条大型挤压线将在春节前后相继投入生产。

“以质量品种求生存，以技术效益求发展”，“做超大高端铝材的领跑者”是企业的经营理念 and 愿景，我们将本着“以为人本，励精图治，创新求强”的企业精神，竭诚为广大用户提供最优质的产品，更全面的服务，热诚希望成为各界人士的合作伙伴！热忱欢迎各位领导莅临我公司参观，指导！



## 霍林郭勒——坚持绿色发展、创新发展、循环发展， 打造高端铝材产业集群，创建国家循环经济示范市。

### 资源优势：

霍林郭勒煤炭资源丰富，霍林河煤田面积544平方公里，精查储量119.2亿吨，周边200公里半径内煤炭储量达500亿吨，平均发热量3100大卡/千克。境内及周边现有千万吨级煤矿9座，年产量超过1亿吨。

### 产业优势：

利用低热值煤发电，打造低电价成本洼地，形成了以煤为基础、电为支撑、铝为龙头的“煤电铝一体化”循环发展产业体系。现已形成3500万吨煤炭、450万千瓦电力装机、168万吨原铝及80万吨铝深加工产能。

### 成本优势：

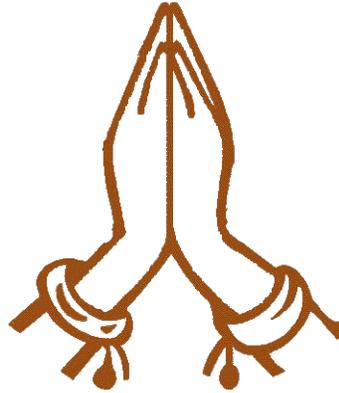
列入国家微网建设试点范围，园区微电网初步建成，实行阶梯电价，0.38-0.42元/千瓦时。落实大用户直供电政策，2015年争取大用户直供电量41亿千瓦时，平均电价0.32元/千瓦时。

### 区位优势：

霍林郭勒坐拥蒙东、连接东北、直通俄蒙，境内4条公路、4条铁路交汇贯通，可直达东北、华北各港口和俄蒙边界口岸，年运力超过1.5亿吨，电气化改造后超过2.5亿吨/年。霍林郭勒机场全面开工建设，预计明年通航。



4<sup>th</sup> Annual IBAAS Conference



# Thank you for being a part of IBAAS-CHALIECO-SINR-2015.

Our sincere thanks to the organizers, associated organizers, all sponsors, partners and supporters, media partners, exhibitors and all the participating companies.

Thank you for making this event a grand success.

## Organizing Committee



# IBAAS - CHALIECO - SINR 2015

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