

12TH INTERNATIONAL BAUXITE, ALUMINA & ALUMINIUM CONFERENCE & EXHIBITION

INTERNATIONAL BAUXITE, ALUMINA & ALUMINIUM
SOCIETY (IBAAS)
IN ASSOCIATION WITH
INDIAN INSTITUTE OF METALS (IIM), GOA CHAPTER



REPORT

IBAAS-IIM 2024

September 25-27, 2024
BITS, Goa (India)



REPORT

IBAAS - IIM 2024 CONFERENCE & EXHIBITION

GOA



The **12th International Bauxite, Alumina, and Aluminium Conference & Exhibition (IBAAS-IIM 2024)** held during **September 25-27, 2024**, at the Birla Institute of Technology and Science (BITS), Goa Campus, India was a grand success. The event concluded with a highly organized post-conference tour of HINDALCO's Belagavi Alumina Refinery on September 28. The theme, "**Aluminium Industry – Vision 2030**" resonated strongly, reflecting India's rapid expansion in alumina and aluminium production to meet rising domestic demand. Key focus areas for the Indian aluminium industry included value addition, import substitution, and energy conservation. The conference gave special attention to decarbonization and digitalization of aluminium production, aligning with industry trends. A full day was dedicated to discussions on reducing carbon footprints, automation, and the application of AI in aluminium production. Across three days of dynamic interactions, the sessions also covered the entire aluminium value chain—from bauxite evaluation and beneficiation to downstream products.



The IBAAS-IIM 2024 event attracted approximately 230 delegates from 100 companies and organizations worldwide, representing bauxite, alumina, and aluminium industries, research institutions, technology and equipment suppliers, service providers, and academic institutions. Experts from India and countries such as Canada, Cameroon, Guinea, Denmark, France, Germany, Switzerland, UAE, and the USA participated. During the 3 days event, about 70 technical papers including keynote addresses were presented in various sessions. The conference also featured a technical exhibition where seven domestic and international companies showcased the latest equipment, developments in specialty chemicals, and innovations. There were several opportunities; and special spaces are provided at the conference venue for the networking and interactions among delegates and companies.



The inaugural session of IBAAS-IIM 2024 was conducted by Prof. D.M. Kulkarni of BITS, with Dr. Anupam Agnihotri, Director of the Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), as the Chief Guest. Dr. Vilas Tathavadkar, Chief Technology Officer of Hindalco Industries Ltd., and Mr. Errol Jaeger, a renowned alumina technologist, were Guests of Honor. Prof. Meenal Kowshik, Dean (Admin) at BITS, and Brig. Arun Ganguli, Secretary General of IIM, were also honoured guests. During this function, the IBAAS-IIM 2024 conference souvenir was unveiled, containing abstracts of

technical papers, sponsor details, and advertisements. All the delegates have received the full technical papers in soft copy format as BINDER Volume XII.

During the inaugural session, Environment, Social and Governance (ESG) awards were distributed to leading organizations by dignitaries of IBAAS-IIM 2024. The list of awardees are as follows:

SR. NO.	NAME OF COMPANY	INDUSTRY CATEGORY
1	Hindalco Industries Limited, Belagavi Works	Large
2	Hindalco Industries Limited, Kuppam Works	Small
3	Hindalco Industries Limited, Mouda Works	Small
4	TAHA International for Industrial Services, Bahrain	Small
5	Ceraflux India Pvt Ltd, India	Small



The opening ceremony concluded with a vote of thanks by Prof. Varinder Singh, President of the IIM Goa Chapter, followed by the inauguration of the exhibition stalls. Several domestic and international companies supported the event by sponsoring and taking exhibition stalls, contributing to the success of IBAAS-IIM 2024. Their financial support is acknowledged with deep appreciation. A list of companies provided financial assistance to IBAAS-IIM 2024 event is given below:

SR. NO.	NAME OF ORGANIZATION
Gold Sponsors	
1	Tokai COBEX GmbH, Germany
2	SNF (India) Private Limited, India
3	FLSmidth Private Limited, India
Silver Sponsors	
1	Metso, Germany
2	Nalco Water India Pvt. Ltd, India
3	Hindalco Industries Ltd., India
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1	EPIQ Machinery, Canada
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1	AKW Apparate + Verfahren GmbH, Germany
2	Alumina Chemicals and Castables, India
Dinner Sponsor	
1	Ashapura, India
Lunch Co-Sponsor	
1	Dharti Refractory Minerals Pvt. Ltd., India
Exhibitors	
1	Kimberlite Chemicals India Pvt. Ltd., India
2	SNF (India) Private Limited, India
3	FLSmidth Private Limited, India
4	Gaudfrin, France
5	Riedhammer GmbH, Germany
6	Westech Process Equipment India P.Ltd, India
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Advertisers	
1	Kimberlite Chemicals India Pvt. Ltd., India
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3	RIA Cast House Engineering GmbH, Germany
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Media Partners	
1	ALCircle Pvt Ltd., India
2	Aluminium International Today, UK
3	International Aluminium Institute, UK
4	Metalworld, India
5	Metal Asia, India
6	Chemical Today, India

After the inaugural session, six keynote addresses were delivered by leading Indian and international experts. These insightful presentations focused on decarbonization, start-up empowerment, the evaluation of the Indian alumina industry, and the development of special aluminium alloys for space, aerospace, and defence applications, particularly by the Vikram Sarabhai Space Centre and the Defence Metallurgical Research Laboratory. Delegates appreciated these keynote addresses as they provided the latest industry insights and pointed the way forward for future R&D efforts. Later in the day, sponsors and companies showcased their latest technologies, equipment, and specialty chemicals through presentations, videos and demonstrations.

The second day (26th September) featured a series of high-quality technical papers on decarbonization and sustainability within the aluminium industry. With India aiming for significant carbon emission reductions by 2030, these papers outlined strategies for reducing greenhouse gas emissions and adopting technologies that could be implemented at a commercial scale. This was followed by sessions on Aluminium Industry 4.0, highlighting digitization, automation, and AI applications in the aluminium sector. These sessions concluded with productive discussions and Q&A segments. In the aluminium marketing session, a CRU expert provided a comprehensive analysis of the global market for bauxite, alumina, and aluminium, with a special focus on India.

The third day (27th September) included three parallel technical sessions on bauxite-alumina, aluminium smelting, and downstream industries. The bauxite-alumina session covered a wide range of topics, including bauxite evaluation, beneficiation, online analysers, Bayer process improvements, value-added alumina products, specialty chemicals, and bauxite residue valorisation. Industry experts from HINDALCO, VEDANTA, JNARDDC, ALMATIS, AKW, NALCO Water, Malvern Panalytical, Westech, and CSIR delivered compelling presentations. A total of 20 bauxite-alumina papers were presented by industry experts, consultants, specialty chemical producers, and equipment suppliers throughout the day in the Auditorium.

On 27th September, in the parallel technical session of aluminium smelter in Hall-1, about 24 papers were presented by young scientists / engineers of various units of HINDALCO, VEDANTA, BALCO, ABSTCPL, JNARDDC, MRAI, BECHTEL, CALDERYS and

UNISEVEN etc. These papers addressed pot control systems, energy efficiency, reduction in raw material consumption, anode and cathode quality, aluminium quality improvements, waste utilization, and reducing greenhouse gas emissions.

In the third parallel technical session on Aluminium downstream in Hall-2, 15 papers were presented by primary and secondary aluminium producers of India and abroad. Papers were mainly presented by BALCO, VEDANTA, various units of HINDALCO, Bhoruka Extrusions, RiA Cast House Engineering and various R&D Institutes like JNARDDC, CSIR etc. Deliberations and discussions were held around quality improvement, special alloys, import substitution for special aluminium products, extrusions, foil development and recycling of aluminium.

Apart from the paper presentations, three young research scholars of CSIR and BITS were selected for poster presentations on various aspects of aluminium production and decarbonization. These contributions by young scholars were recognized with certificates and awards in the concluding session of IBAAS-IIM 2024.



Each technical session was chaired by a nominated expert, ensuring smooth proceedings and maintaining the quality of presentations. The IBAAS technical committee reviewed feedback from the session chairs and selected the best papers for awards as listed below.

Award Winners for Best Papers

MAJOR AREA	AWARD	TOPIC	PAPER PRESENTER
Decarbonization and Aluminium Industry 4.0	1	Aluminium Via Chlorination of Bauxite	Mr. Sachin Arya & Mr. Chitranjan Jena, Gharda Scientific Research and Foundation, India
	2	Adoption of Digital Solutions for Sustainable Red Mud Management	Mr. Santanu Dey, Manager- Alumina Operations Hindalco Industries Limited,
Bauxite-Alumina	1	Utilization of Bauxite Residue for Road Construction	Mr. S. Acharya, Lead – Environment & Sustainability Utkal Alumina International Ltd, Doraguda, India
	2	A step towards the production of alumina trihydrate (ATH) using non-metallurgical grade bauxites following Soda Sintering process	Ms. Prachiprava Pradhan, Junior Scientist, Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur
Aluminium Smelting	1	Prebaked Anode Quality Enhancement by Process Parameter Optimization & In-house Innovation	Mr. Suryakant Nayak, Head Carbon Process Control Aditya Aluminium (Hindalco Industries Ltd.), Smelter, Lapanga, Odisha
	2	Beyond Traditional Binders: For Sustainable Carbon Anode Manufacturing	Mr. Tushar S. Thorat, Aditya Birla Science & Technology Company Pvt. Ltd., India
Aluminium Downstream	1	Transforming Aluminium Extrusion: Leveraging Digital Transformation for Operational Excellence	Mr. Keerthan Jayaramu and Mr. Rajat Agarwal, Bhoruka Extrusions Pvt. Ltd. India
	2	High Tensile Strength Light Gauge Foil Development	Mr. Monis Raza, Hindalco Industries Ltd.





Awarding the best papers and presentations was aimed at encouraging young scientists and engineers to contribute further to the development of the aluminium industry. In the concluding session, participants of IBAAS-IIM 2024 conference have provided their valuable feedback and requested to encourage papers and presentations by students, research scholars and public sector and Government companies. India can play vital role in the world for the production of value-added bauxite and alumina items, where plants are being closed down in Europe and USA. The conference souvenir, list of presented papers / delegates and photographs of IBAAS-IIM 2024 are uploaded on IBAAS website (<http://www.ibaas.info/>) and all the feedback and comments can be sent to info@ibaas.info.


