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Kañch

Celebrating 80 Years of AIGMF 1944 2023
The All India Glass Manufacturers' Federation
www.aigmf.com

Quarterly Journal of **The All India Glass Manufacturers' Federation**

Bi-lingual

(Page #s 28-34)

Main Story

National Education Day celebrated at Goa

Contents

(Page #s 15-25)

glasstec 2024

(Page #s 56-60)

Glasstech Asia and Fenestration Asia 2024

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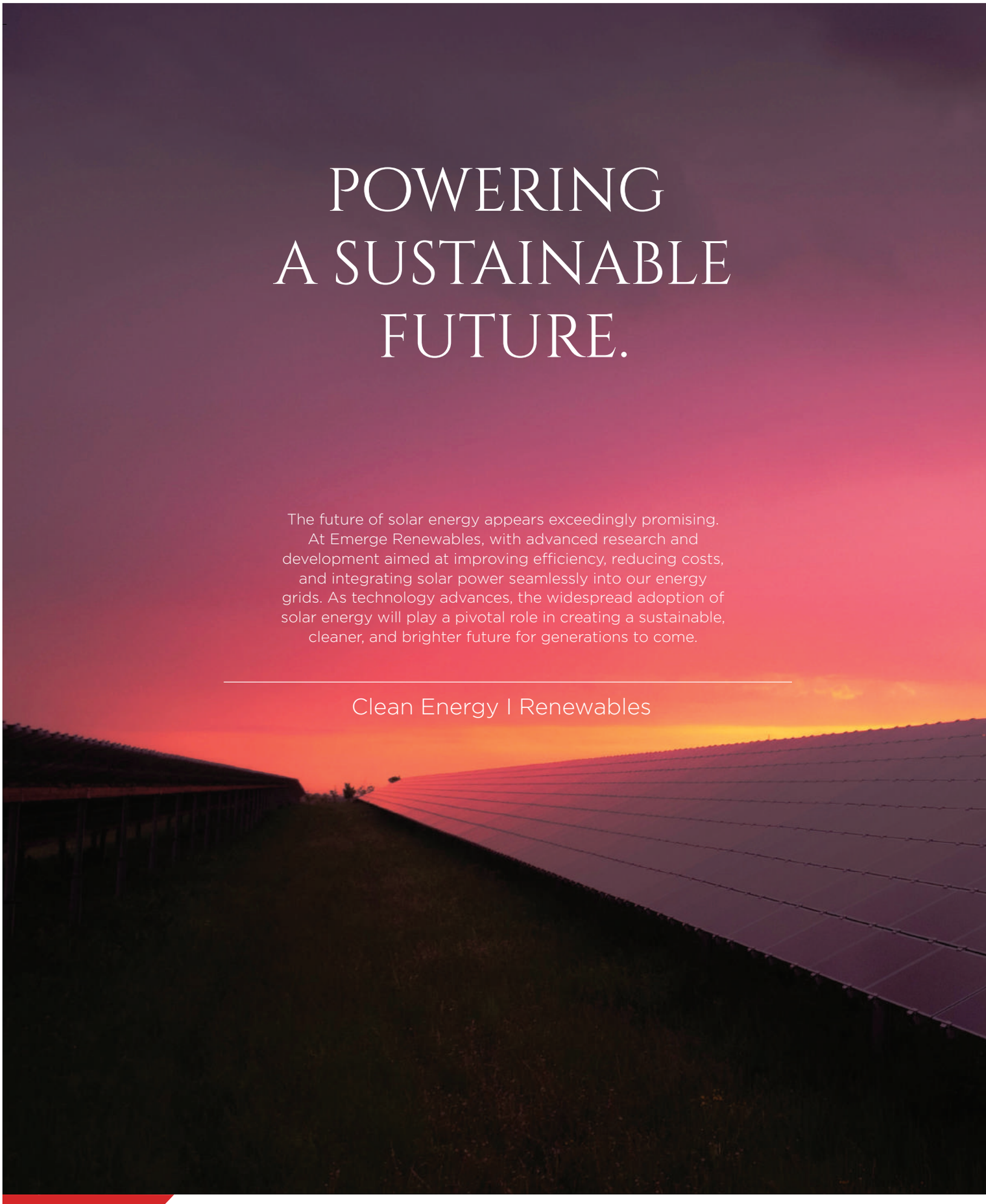

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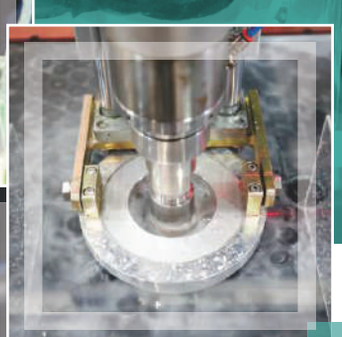

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Kañch

Quarterly Journal of **THE ALL INDIA GLASS MANUFACTURERS' FEDERATION**

Vol. 12 | No. 3 | October-December 2024

Contents

52 YEARS

AGI GREENPAC

Sustainable Packaging Solutions

Glass Packaging | PET Packaging | Caps & Closures

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From the President's Desk

The last 2024 Executive Committee Meeting of the AIGMF was held at GOA on Nov 12. The meeting was sponsored by M/s Nirmal Glasstech Industries at the Grand Hyatt, Bambolim GOA. The group hotel stay was sponsored by M/s Glass Futures Ltd., UNITED KINGDOM at the Park Inn by Radisson Goa Candolim, from Nov 11-13.

A technical presentation on Decarbonization in the Glass industry was given by Mr. Brian Matuszewski (Commercial Project Manager, Glass Futures Ltd.) which was followed by a presentation on All Electric Melting- the proven technology for a sustainable, renewable and low carbon future by Mr. Grahame Stuart (Technical Sales Manager, Electroglass Ltd.,) UNITED KINGDOM.

A group visit to Ponda was arranged where a guided tour at the state-of-the-art Craft and Innovation of Diageo (member of Glass Futures Ltd.) demonstrating its long-term research with a focus on driving Grain-to-Glass sustainability was kindly arranged by Mr. Srinidhi Rao, Head-Sustainability, Diageo India and his team for the visiting delegation. On Nov 12, all participants attended the grand wedding celebrations of Mr. Aditya Mundra, Director, Nirmal Glasstech Industries at Grand Hyatt, Bambolim. The three day event concluded on a high note that covered discussions on sustainability, national education policy, site visits, bonding and local sightseeing.

Unveiling of the annual calendar of AIGMF for 2025 on 'Glass Decorates' or कांच से सजावट was done by the office bearers, overseas guests and the eldest member of the Glass Industry Mr. Mohan Lalvani of Mascot Engineering Company, featuring best entries from the Youth 2024 contest.1000 wall calendars were distributed to AIGMF Members/Regional Associations, Stakeholders: Govt. of India Secretaries/office of Chief Secretaries/LGs/Administrators/CMs/select GoI departments/ Trade Chambers/Education Secretaries/All FOSG Members/Firozabad/CGCRI contacts/General, Foreign Missions, select PAN India schools/colleges/Universities, Niti Aayog, PMO, MNRE, Solar Module/Manufacturers, select worldwide glass associations, etc., by Nov 30, 2024.

For four days, Düsseldorf was the hub of the global glass industry. From Oct 22-25, 2024, glasstec, the international trade fair for glass production, glass processing and glass products, once again impressed exhibitors and trade visitors from all over the world, confirming its importance as a global industry platform for the glass industry. 1,257 exhibitors from 50 countries and over 32,000 trade visitors from 121 nations came together to experience the latest technologies, trends and innovations along the entire glass production and processing value chain.

Like previous years, AIGMF secured a shared exhibition space with Mr. Dave Fordham, former publisher of Glass Worldwide magazine in his new role with Glass Futures Ltd., via booth # 13A22 at glasstec GERMANY. Mr. Dave Fordham works in a team responsible for India/Asia and other sectors for new ventures in Glass technology and innovations with Glass Futures Innovation Centre at St. Helens; and partnering with AIGMF is expected to open new avenues in areas related to research, technology etc.

The 20th edition of Glasstech Asia and Fenestration Asia (GAFA) was held at Saigon Exhibition and Convention Center (SECC) in Ho Chi Minh City, VIETNAM from Dec 11-13, 2024 sharing three days of inspiration, innovation in Glass Façade industry in collaboration with the Vietnam Green Building Council (VGBC), Ministry of Construction (MOC), the Singapore Glass Association, and MMI Asia.

AIGMF supported the event as a Media partner. AIGMF was allocated stall # FAC-06 at the international pavilion and was invited by Messe München to be a part of their show. With over 4,000 trade visitors and delegates from more than 50 countries, along with around 289 exhibitors, GAFA 2024 truly celebrated the global reach of the glass and façade industry.

Touring Exhibition on 'Glass or Class', an Award winning blend of Artwork / Photography / Poems / Essays by young minds on Glass in our daily lives held over the Annual Youth contests organised by The All India Glass Manufacturers' Federation (AIGMF) between 2018-2024 was unveiled at the GAFA 2024. This add-on event was organised by MMI Asia in partnership with the Singapore Glass Association (SGA). The digital exhibition is available under past events at www.aigmf.com

The first Ex-Com Meeting of 2025 is slated to be held at Kaziranga National Park (UNESCO World Heritage site) and to be hosted by North East Sillimanite, GUWAHATI from March 7-9. AIGMF Members will qualify for a complimentary two nights (March 7-9) stay sponsored by North East Sillimanite, those who provide confirmed air tickets and be a part of the entire program while in Kaziranga by Jan 31,2025.

In addition to the normal agenda, visit to the national park/bonding/management/team building sessions, technical presentations will also be organised. The main theme of the program will be centered around Women in Glass Manufacturing on March 8 followed by presentations, Ex Com, other sessions and to celebrate the International Women's Day on March 8.

I invite all Members to be part of the event and benefit at the most ■

Rajesh Khosla
President AIGMF and CEO/President AGI Greenpac

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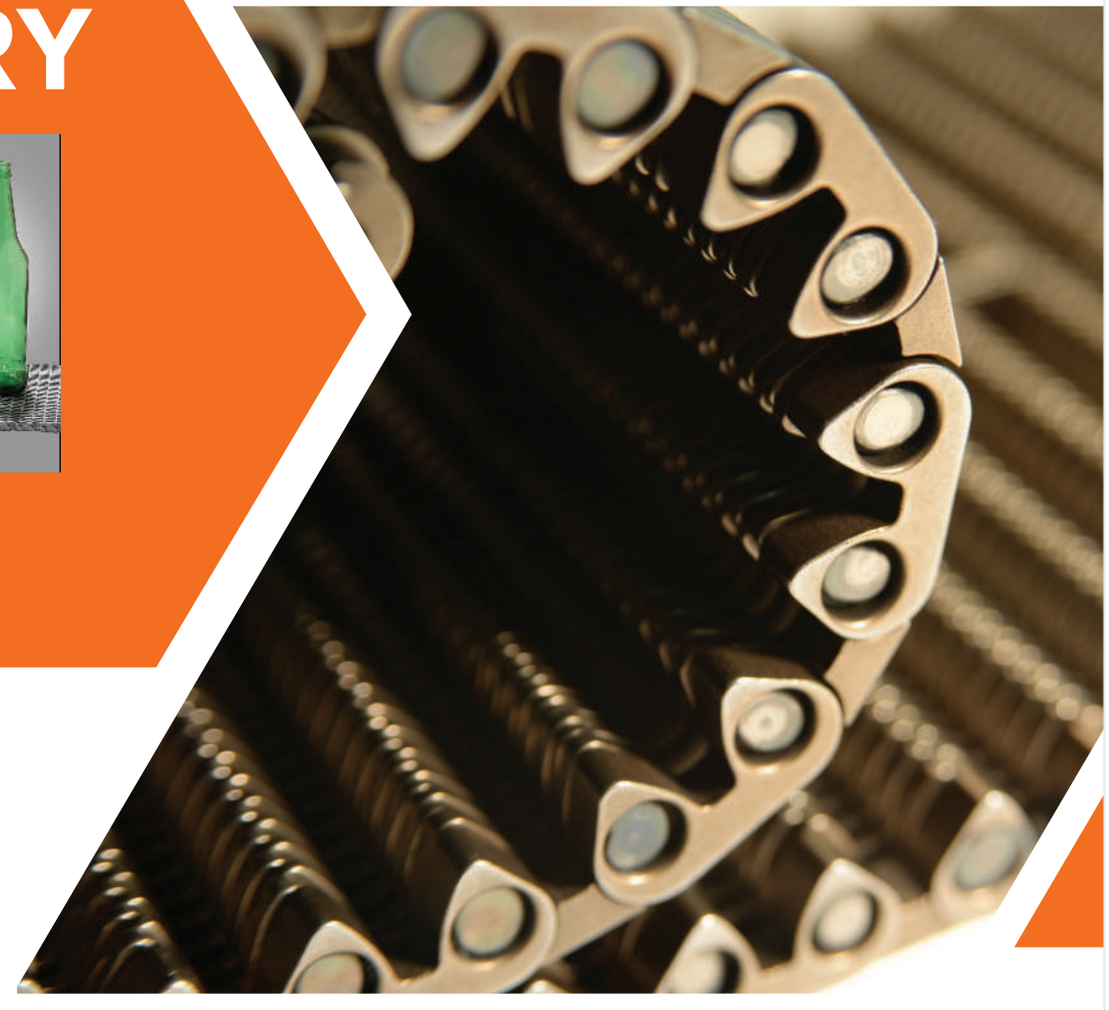

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GLASS News

PROF. BIKRAMJIT BASU APPOINTED AS DIRECTOR CSIR-CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE

Prof. Bikramjit Basu took over as Director, CSIR-CGCRI on Nov 8, 2024. Prior to that, he was a Professor at the Materials Research Center, since May 2011 and held Associate Faculty at the Interdisciplinary Center for Energy Research, Indian Institute of Science (IISc), Bangalore. After his undergraduate and postgraduate degree in Metallurgical Engineering from NIT Durgapur and IISc respectively, he earned his PhD in the area of Engineering Ceramics at Katholieke Universiteit Leuven, Belgium in March 2001. Following a brief postdoctoral stint at the University of California, Santa Barbara; he served as a faculty of Indian Institute of Technology Kanpur during 2001-2011.

He has been pursuing research at the confluence of Ceramic Science, Biomaterials, Additive Manufacturing (binderjetting laser/electron beam/ extrusion-based 3D printing), Biological Science, and Medicine, to address many unanswered questions related to renewable energy and regenerative engineering. In the field of healthcare, his research group has effectively applied the principles and tools of these disciplines to develop next-generation implants and bioengineering solutions to address unmet clinical needs for musculoskeletal, dental, and neurosurgical applications; thereby impacting human healthcare.

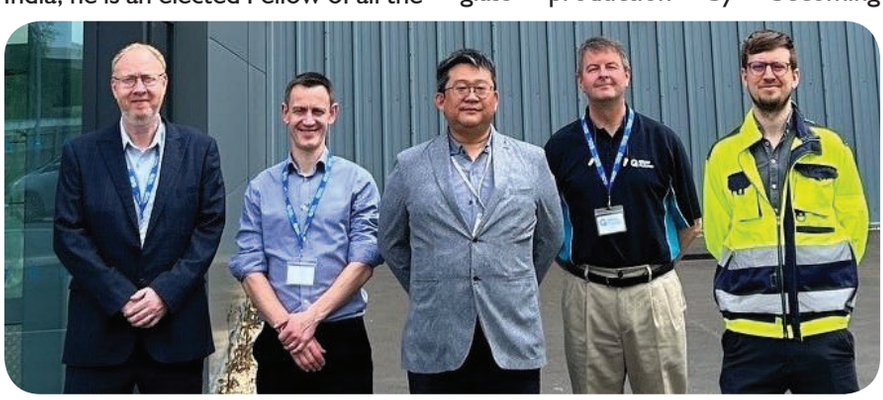
His research group has developed technologies related to the manufacturing of bioceramics,

acetabular liners, customized bone flaps for cranioplasty surgeries, dental implants and variants of 3D bioprintable hydrogels. These technologies are transferred to multinational corporations or start-ups, and many of the products, after regulatory clearances, are currently used for patient care in India. His 250+ peer-reviewed research articles are cited more than 19,000 times with an H-index of 73 (Google Scholar).

A Chartered Engineer of the UK, he has the unique distinction of being the only ceramic scientist from India to get elected to all the major international ceramic societies and academies, including the World Academy of Ceramics (2024), the European Ceramic Society (2023), the American Ceramic Society (2019). In India, he is an elected Fellow of all the National Academies of Engineering, Science and Medicine, including the Indian National Science Academy (2021), Indian Academy of Sciences (2020), National Academy of Medical Sciences (2017), Indian National Academy of Engineering (2015), and National Academy of Sciences, India (2013). Internationally, he is an elected fellow of the International Union of Societies for Biomaterials Science and Engineering (2020), International Academy of Medical and Biological Engineering (2017) and the American Institute of Medical and Biological Engineering (2015). He is a recipient of India's most prestigious Science and Technology award, Shanti Swarup Bhatnagar Prize (2013) from the Prime Minister of India; and globally competent awards, like Humboldt Research Award from the Alexander von Humboldt foundation (2022), and International Richard Brook Award from the European Ceramic Society (2022).

GLOBAL FLAT GLASS GIANT AGC INC. JOINS GLASS FUTURES

The AGC Group have taken another significant step towards sustainable glass production by becoming



Dr. Terutaka Maehara (centre) of AGC with Glass Futures' Mr. Dave Fordham, Mr. Rob Ireson, Mr. Steve Cook and Mr. Aston Fuller

members of Glass Futures. AGC produces many products that play an essential role in maintaining the global environment and supporting society.

AGC Inc. is one of the world leaders in flat glass, producing, processing and distributing glass for the building and automotive industries, solar and high-tech sectors, as well as electronics, chemicals, life science, ceramics, and other products.

Glass has a positive impact on people and the planet. As a truly sustainable material, it is at the heart of sustainable architecture, and AGC has stated a commitment to being at the forefront in developing new glass products with better environmental performance.

To achieve CO_2-neutral glass production by 2050, all parts of the value chain need to be taken into consideration. The international glass producer became members of Glass Futures to collaborate with its membership network across the entire glass supply chain towards a sustainable future.

Glass Futures is a not-for-profit research and technology organisation with a Global Centre of Excellence facility in St. Helens, part of the Liverpool City Region, which allows the glass and foundation industries to trial and demonstrate disruptive technologies and generate ideas that will support industry to decarbonise and become more sustainable, faster.

Mr. Dave Fordham, Global Engagement Lead at Glass Futures said: *"We were pleased to welcome members of AGC's innovation team from Japan and Belgium to our pilot facility where we're currently installing an industrial scale 30 tonnes per day pilot furnace to explore the technical foundations for achieving carbon neutral glass melting. We're delighted the global glass giant has joined our growing network of members to help the industry achieve its sustainability goals."*

Dr. Terutaka Maehara, Leader of the Hot Process team at the AGC Innovative Technology Laboratories in Yokohama, JAPAN said: *"AGC's glass business encompasses a wide range of products, including flat glass, display glass, and specialty glass, with manufacturing sites located around the world. Therefore, the requirements for achieving carbon neutrality vary depending on each business segment and each production site, necessitating the development and focus on various technologies. We believe that joining Glass Futures will be meaningful for this purpose."*

AGC join fellow glassmaking members of Glass Futures including Ardagh, Arc, Bormioli Pharma, Corning, Encirc (founder member), Guardian (founder member), Knauf, NSG Pilkington, O-I (founder member), Stoelzle and Verallia, as well as leading brands such as Diageo, Heineken, Siemens (founder member) and Velux, plus many more technology suppliers, associations, academia and leading users of glass.

GEA SUPPLIES TWO WASTE HEAT RECOVERY PLANTS TO ASAHI INDIA GLASS

GEA is supporting the sustainability strategy of Asahi India Glass Limited (AIS) with the supply of two waste heat recovery (WHR) systems. Asahi India Glass is India's leading end-to-end glass and window solutions company in both the automotive and construction sectors. AIS is implementing an advanced waste heat recovery system from GEA at its two glass manufacturing units – at the greenfield float glass plant in Soniyana, Rajasthan, and at the existing installation in Roorkee, Uttarakhand to have 1.8 MWel capacity for each plant. By utilizing the waste gases from the furnace and converting the heat transferred from the waste gases into electrical energy, each plant will generate approximately 15,500 MWel per year, resulting in an annual reduction in carbon emissions of approximately 13,000 tons per plant.

Another highlight of the green field project in the Rajasthan is, it will be utilizing 94% of required power through WHR.

GEA waste heat recovery plants are state-of-the-art systems that utilize the waste heat generated during glass production and convert it into clean and green energy. This results in a lower environmental impact as well as greater operational efficiency and energy independence for AIS plant operations. AIS chose to partner with GEA because it needed a plant that would operate at optimal standards and performance parameters for its class. Thanks to GEA's process

GEA supports its customers with extensive expertise and experience in waste heat recovery in the treatment of process gases. Numerous plants have already been equipped and retrofitted accordingly. (Photo: GEA)

technology and the seamless integration of the waste heat recovery plant into AIS's existing infrastructure, ensuring optimal performance and reliability, the criteria were met.

Mr. Rupinder Shelly, COO Architectural Glass, Asahi India, said, *"As a leading and responsible glass company, AIS is committed to aligning state-of-the-art technologies and operations with sustainability at our new greenfield float glass plant in Soniyana.*

Our collaboration with GEA is a crucial step towards our goal of achieving carbon neutrality.

AIS' vision on sustainability not only underlines our commitment to the circular economy, but also sets new standards in the glass industry in terms of environmental responsibility and innovation."

Waste heat recovery is a key factor in improving overall energy efficiency. GEA technologies make it possible to capture waste heat and process gases from existing processes and reuse them for other purposes, such as heating or power generation.

Saving energy and reducing emissions are key success factors in the cement, **Glass**, iron and steel, non-ferrous metals and refining industries, and GEA is always at their side as a highly reliable designer and supplier of comprehensive energy recovery plants. Thanks to GEA's extensive experience and expertise with close cooperation with partners and carefully selected sub-suppliers, all solutions include highly efficient components and state-of-the-art technologies such as ORC (Organic Rankine Cycle) based energy recovery. Exactly what is required for efficient energy recovery and emission reduction depends on the individual industrial plant, considering the potential impact of energy recovery on the existing gas cleaning process or, in the case of new plants, its full integration.

GEA is one of the world's largest suppliers of systems and components to the food, beverage and pharmaceutical industries. The international technology group, founded in 1881, focuses on machinery and plants, as well as advanced process technology, components and comprehensive services. www.gea.com

NATIONAL WORKSHOP ON SUSTAINABLE GLAZING STRUCTURES

The National workshop on "Sustainable Glazing Structures - Structural Integrity, Safety and Energy Efficiency" was successfully conducted by IIT Madras and Glazing Society of India (GSI) on Nov 22 at IIT Madras campus in Chennai.

The objective of the workshop was to deliberate on the design parameters for safety, structural and energy performance, selection of materials for Sustainable Glazing Structures and to understand & facilitate the implementation of codes and standards for use of sustainable glass and glazing in India.

In his Chief Guest address, Prof. (Dr.) Ashwin Mahalingam, Professor, Department of Civil Engineering, Dean – Alumni and Corporate Relations and Former Chairman, School of Sustainability, IIT Madras emphasized the importance of sustainability in the Architectural, Engineering and Construction sector and encouraged active participation of all stakeholders in knowledge sharing and innovative thinking to shape a greener, more sustainable future in the built environment. In his special address, Prof. (Dr.) S Arul Jayachandran, Professor, Structural

Engineering, Department of Civil Engineering, IIT Madras expressed sincere appreciation to all the Glass and Glazing Industry for the success of this initiative and highlighted the importance of such partnerships in promoting such sustainable practices. Dr. Alagappan Ponnalagu, Assistant Professor, Structural Engineering, Department of Civil Engineering made the welcome address and Mr. G N Gohul Deepak, Executive Director gave the vote of thanks.

Technical presentations were given by eminent speakers from the Industry and Academia including Prof. (Dr.) Arul Jayachandran; Dr. Alagappan Ponnalagu; Mr. Shailesh Ranjan, National Head – Business, Asahi India Glass Ltd; Ms. Sheetal Khanna, General Manager, Gold Plus Glass Industry Ltd.; Mr. Shoaib Shaikh, National Head Projects, Saint Gobain Glass Industry Ltd.; Dr. Lakshmi Priya, Assistant Professor, Structural Engineering, Department of Civil Engineering, IIT Madras and Dr. Omkar Powar, Innovations Manager, Schueco International R&D. The workshop concluded with an engaging panel discussion on sustainable glazing structures by the above technical experts.

The participants also visited the Structural Glass Research and Testing (SGRT) Facility, Fire Testing Lab, Impact Testing Lab and the Structural Laboratory at IIT Madras as part of the National Workshop.

More than 175 participants from Government including officials from CPWD, PWD, AAI etc, Industry representatives including glass manufacturers, processors, fabricators, etc., scholars from technical institutions including IITM, NIT, etc, architects, structural engineers, students, experts and professionals from glass & construction sector participated in the workshop.

£6M PROJECT KICKS OFF TRIALS TO DEMONSTRATE LOW-COST BIOFUELS HAVE POTENTIAL TO ACHIEVE UK NET ZERO TARGETS

A major industrial trial was successfully undertaken as part of a Glass Futures project to identify and demonstrate a variety of economically and technically suitable low-cost bioderived fuels for a range of industrial glass and ceramics sites with furnaces of varying designs and scales.

In previous Industrial Fuel Switching (IFS) round 1, phase 3 projects, Glass Futures demonstrated the feasibility of a number of biofuels such as for use in glass furnaces and identified fuels that emit circa 80% less Scope 1 CO_2 than traditional natural gas. However, these fuels were found to be typically 2-3 times more expensive than natural gas and therefore, economically unattractive.

The first of five trials kicked off with a successful industrial-scale trial at Pilkington UK Limited's (part of NSG Group) Greengate site in St. Helens as part of a project funded by the UK government under the Department for Energy Security and Net Zero's (DESNZ) IFS 2, phase 2 programme, funded within its Net Zero Innovation Portfolio.

Not only will the project develop a detailed understanding of these fuels, their availability and potential CO_2 savings but will also assess their compatibility with Carbon Capture Utilisation & Storage (CCUS) technologies in a project led by C-Capture, demonstrating the potential to remove CO_2 from the flue gas emissions.

Glass furnaces and ceramics kilns are pre-dominantly fired using natural gas due to ease of supply, and while the glass industry is already embarking on a range of new technologies to decarbonise glass melting, it is vital that these essential industries continue to find viable low-carbon alternatives to gas.

In March of this year, trials on Glass Futures combustion test bed facility provided valuable insights into the combustion properties of biofuel oil, alongside other biofuels, and the confidence to progress a selection of these fuels for trials on commercial glass furnaces and ceramics kilns.

Mr. Habib Khosroshahi, project team manager and programme lead for IFS said, *"Having demonstrated the capability of these biofuels at our facility earlier this year, we are excited to progress this technology to industrial-*

Image by Mr. Bernard Platt, taken during an industrial scale trial of biofuels at Pilkington UK (NSG Group) in 2022 that showed carbon savings of circa 70-80% of CO_2 vs. natural gas, proving

scale trials, working alongside our members to truly test their suitability for commercial implementation, towards a lower-carbon future for the glass and foundation industries."

The project brings together partners from two essential industries, glass and ceramics. Partners include major glass manufacturers such as Ardagh Glass Packaging, Encirc, NSG Group and O-I, as well as the UK's largest manufacturer of shaped refractories DSF Refractories & Minerals Limited.

Mr. Caio Mendonça, R&D Senior Decarbonisation Technologist at Pilkington UK, said: *"This groundbreaking trial is an exciting step towards net-zero, and highlights our dedication to sustainable innovation within the glass industry. By testing biofuels at an industrial scale, we are pushing the boundaries of what is possible and demonstrating the power of cleaner, low-carbon alternatives to natural gas.*

"This project is not just about reducing our own carbon footprint but also paving the way for the entire industry to transition towards more environmentally friendly practices. The insights we gain will help to accelerate the development of practical, cost-effective solutions that can be implemented across the sector."

Mr. Steve Rotheram, Mayor of the Liverpool City Region said, *"Glass Futures has a central role in our mission to decarbonise the Liverpool City Region. This initiative not only aims to transform the global glass industry, but it's also creating new jobs and developing skills which are essential for the industries of the future."*

"I've been really impressed by the collaboration that's got us to this place, it's a great example of how partnership working can really amplify the talent that exists in the Liverpool City Region and beyond.

"It's exciting to see Glass Futures take the next step, trialling low-cost biofuels which could enable the production of zero-emission gas more cheaply, while contributing to the UK's net-zero mission."

Glass Futures will continue to find solutions for decarbonising energy intensive industries thanks to £7m funding and £11m for its members from DESNZ. Future trials include rapid and dynamic electric boosting of glass furnaces and demonstrating hydrogen in the ceramics sector.

AGI GREENPAC STRENGTHENS GLOBAL PRESENCE WITH NEW REGIONAL OFFICE IN DUBAI

Indian packaging company AGI Greenpac Limited has opened a new regional office in Dubai, expanding its footprint in the Middle East. The move is aimed at supporting the growing demand for high-quality packaging solutions in the region, particularly in the food, beverage, and pharmaceutical sectors.

The Middle East glass packaging market is projected to grow to USD 12.44 billion by 2029, driven by sectors that include food and beverages, pharmaceuticals, and personal care. AGI Greenpac's focus on eco-friendly packaging products, including glass containers and security caps, aligns with the regional push for sustainability, such as efforts to reduce disposable plastics.

"The opening of our Dubai office marks a pivotal step in our global expansion strategy," said Mr. Rajesh Khosla, CEO of AGI Greenpac. *"We are well-positioned to capitalize on the robust growth of the Middle East's food, beverage, and pharmaceutical sectors. Our local presence will allow us to deliver tailored packaging solutions that meet specific customer needs."*

Mr. Manpreet Singh, President of International Sales and Chief Strategy Officer, emphasized the strategic importance of the Dubai office. *"This new office will strengthen our presence in the Middle East, foster deeper customer relationships, and enable us to adapt to local market dynamics,"* he said.

The company has also committed $27.34 million USD (₹230 crore) in the fiscal year 2025 to upgrade its manufacturing facilities. This investment will focus on advanced furnaces and technology upgrades.

CHANGE IN GLASTON'S EXECUTIVE LEADERSHIP TEAM

Mr. Magnus Sjöblom has been appointed as Glaston's new Chief Financial Officer (CFO) and member of the Executive Leadership Team. Mr. Sjöblom will take up this position on March 1, 2025, and will report to CEO Mr. Toni Laaksonen.

Mr. Sjöblom joined Glaston in 2022 and takes over as CFO from the position of VP, Business Control & Strategy. Prior to Glaston, Mr. Sjöblom worked for Posti Group Oyj, where he was Head of Finance, Media and Partners, from 2019–2022. Before that, he held various financial leadership roles at UPM, Microsoft and Nokia.

"I am very pleased with Magnus Sjöblom's appointment as our CFO and happy that we were able to find an internal successor with excellent business and financial skillset for this position. During the past two years, Magnus has demonstrated a strong commitment to the company with a mindset of continuous improvement. I'm confident that with Magnus' contribution, we can further accelerate Glaston's strategy execution," says Mr. Toni Laaksonen, Glaston's President & CEO.

KANCH KI PATHSHALA' or CLASSROOM ON GLASS

To hone the skills of the workforce and refine their glasswork further, understand every aspect, and brighten workers' future in the Glass business, the experts from the Industry once again got together and taught some amazing techniques and interesting tips enabling young workers to learn finer aspects and details of glass installations, etc.

The add-on event was held on Dec 5 and 6 under the aegis of ZAK Trade fair at New Delhi's Pragati Maidan's open ampi-theatre.

An open classroom on Glass was attended by approx. 600 Glass Traders, Installers, Fabricators, Contractors, Architects, Interior Designers, Consultants, Window makers, glass and window canopies amongst Technical professionals.

The program was held at the initiative of the FOSG- Federation of Safety Glass, ZAK Glass Technology, UWDMA- UPVC Windows and Doors Manufacturers Association, CCPS- Confederation of Construction Products and Services, WFM Media, AIGMF- The All India Glass Manufacturers' Federation, Glass Academy and GSI-Glazing Society of India.

कटते रहे पेड़... फिर भी बढ़ गया 2.12 वर्ग कि.मी. जंगल

फिरोज़ाबाद में पिछले दो साल में 58. 85 से बढ़कर 60.97 वर्ग कि.मी. हो गया वन क्षेत्र

हरे पेड़ों पर भले ही आरी चलती रही, हरियाली की हत्या होती रही, लेकिन इस सबके बावजूद पिछले दो साल में फिरोज़ाबाद में 58.85 वर्ग कि.मी. से बढ़कर 60.97 वर्ग कि.मी. वन क्षेत्र हुआ है। फिरोज़ाबाद में 2.12 वर्ग कि.मी. वन क्षेत्र बढ़ा है। जबकि एटा में 2021 में वन क्षेत्र 23.97 वर्ग कि.मी. था जो 2022 में 20.82 वर्ग कि.मी. रह गया।

यहां 3.15 वर्ग कि.मी. कमी आई। हाथरस में 26.24 से घटकर 22.09 वर्ग कि.मी. और भरतपुर में 139.15 से घटकर 132. 75 वर्ग कि.मी. वन क्षेत्र रहा। यहां वन क्षेत्र में 6.40 वर्ग कि.मी. कमी आई है।

आगरा में 12.90 वर्ग कि.मी. वन क्षेत्र बढ़ गया है। वर्ष 2021 में यह आंकड़ा 261.83 वर्ग कि.मी. था। वहीं 2023 में यह 274.73 वर्ग कि.मी. पर पहुंच गया। यह हम नहीं भारत वन स्थिति 2023 की रिपोर्ट कह रही है।

आंकड़ों के अनुसार की तुलना में 2023 में जिले में 4.20 वर्ग कि.मी. मध्यम और 8.70 वर्ग कि.मी. खुले वन क्षेत्र में वृद्धि हुई है। केंद्रीय पर्यावरण मंत्री भूपेंद्र यादव ने सर्वे रिपोर्ट जारी की।

जिसके अनुसार पर्यावरण दृष्टि से संवेदनशील ताज ट्रेनेजियम जोन (टीटीजेड) के जिलों में आगरा मथुरा, फिरोज़ाबाद में हरियाली क्षेत्र बढ़ा है।

आपको बता दें कि फिरोज़ाबाद के वरिष्ठ उद्योगपति श्री मुकेश कुमार बंसल (टोनी) एवं उप राष्ट्रपति द ऑल इंडिया ग्लास मैनुफैक्चर्स फेडरेशन के सफल योगदान के फलस्वरूप जिन्होंने गत 10 वर्षों से हाइवे एवं शहर की हरियाली के लिए साथी फाउंडेशन के प्रयास द्वारा दो लाख से अधिक वृक्षारोपण किया है।

(News Source: AIGMF Research Team / World Wide Web)

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glasstec 2024: World's Leading Trade Fair Meets High Expectations

Under the motto We Are Glass, glasstec 2024 impresses with global market leaders and decision-makers from across the world.

High level of interest in the supporting programme with innovative impulses and networking opportunities.

For four days, Düsseldorf was the hub of the global glass industry. From Oct 22-25, 2024, glasstec, the international trade fair for glass production, glass processing and glass products, once again impressed exhibitors and trade visitors from all over the world, confirming its importance as a global industry platform for the glass industry.

1,257 exhibitors from 50 countries and over 32,000 trade visitors from 121 nations came together to experience the latest technologies, trends and innovations along the entire glass production and processing value chain.

Mr. Bernhard Hötger, CEO Hegla: *"Highlights, trends and a key industry meeting point – glasstec has once again confirmed its status as the world's leading trade fair for the international*

glass industry. Innovations are showcased, visions are discussed and a sense of solidarity is strengthened. We're looking forward to the next glasstec in 2026 and will be back here again."

Like previous years, AIGMF secured a shared exhibition space with Mr. Dave

Fordham, former publisher of Glass Worldwide magazine in his new role with Glass Futures Ltd., via booth # 13A22 at glasstec GERMANY. Mr. Dave Fordham works in a team responsible for India/Asia and other sectors for new ventures in Glass technology and innovations with

Glass Futures Innovation Centre at St. Helens; and partnering with AIGMF is expected to open new avenues in areas related to research, technology etc.

Mr. Jean-Paul Hautekeer Global Strategic Marketing Director, Dow Building & Infrastructure: *"glasstec*

offers a great opportunity for Dow team to connect with industry professionals across the whole value chain. The 2024 edition has seen the introduction of a new range of Technologies and continued the conversations around silicones and their role in sustainable building facades

– topics which have both engaged and inspired visitors to our booth."

July-Sept as a special glasstec issue of both KANCH and Glass News were widely distributed in both hard and soft versions to glasstec visitors/ exhibitors and the worldwide readers.

The who's who of the glass industry

was once again represented at glasstec 2024. Exhibitors were very satisfied across the board. Mr. Marius Berlemann, Chief Operating Officer of Messe Düsseldorf, delights: *"glasstec 2024 has once again proven itself as the central meeting point for the international glass industry. We are proud to organise a trade fair that*

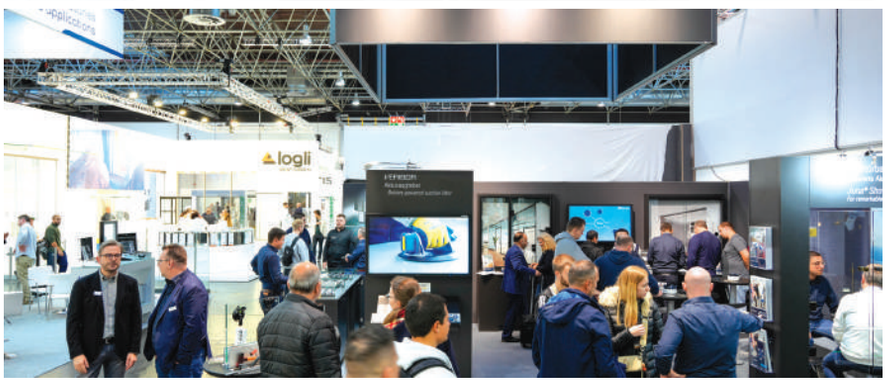
showcases the innovative strength and future visions of the industry. Despite the economic challenges, the mood was very positive and inspiring, with a focus on collaboration and progress. This strong response underlines the importance of glasstec for the further development of the glass industry."

Mr. Egbert Wenninger, CCO Grenzebach Maschinenbau GmbH and Chairman of the glasstec Exhibitor Advisory Board, confirms: *"glasstec was once again the meeting place for the global glass community. Nowhere else is all the information about glass production and glass processing is*

available in such a condensed form. Plus many innovations and trends, glasstec is simply a must."

The outstanding range of exhibitors met with an extremely positive response from trade visitors from all over the world. glasstec 2024 not only impressed with its high level

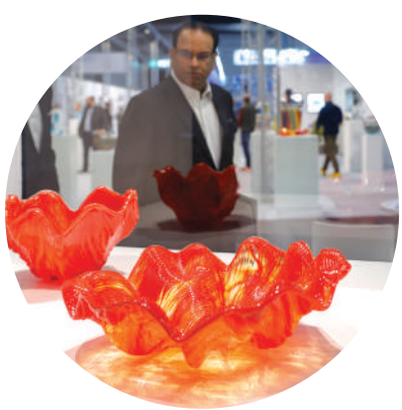
of internationality, but also with a remarkable proportion of decision-makers. With an almost 80% share of executives, visitor quality rose once again. Around 75% of trade visitors came from abroad, including numerous attendees from Europe,

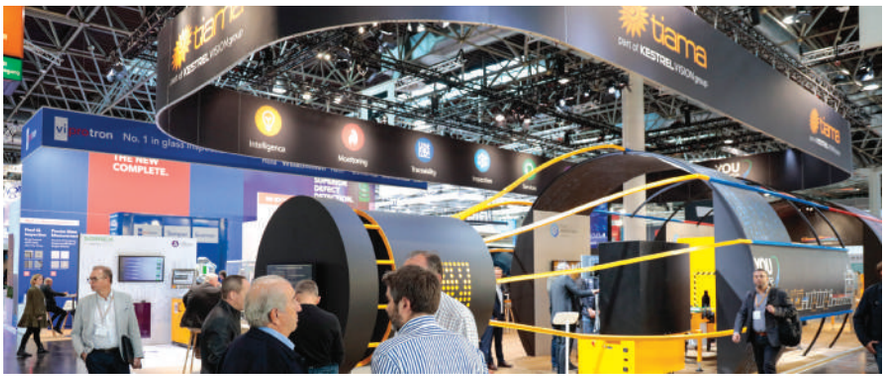


North America and Asia. Germany, Italy, France, Poland and the Netherlands were particularly well represented, as were the USA and China – impressive proof of the global appeal of the trade fair.

Mr. Christophe Schulz, Head of Marketing, Saint-Gobain Glass

Deutschland:*"glasstec offers us an outstanding international platform for intensive networking and exchange on sustainable solutions like our low-carbon glass and lightweight glass solutions. We are delighted by the great interest shown in our innovative services, which, together with our partners, allow*





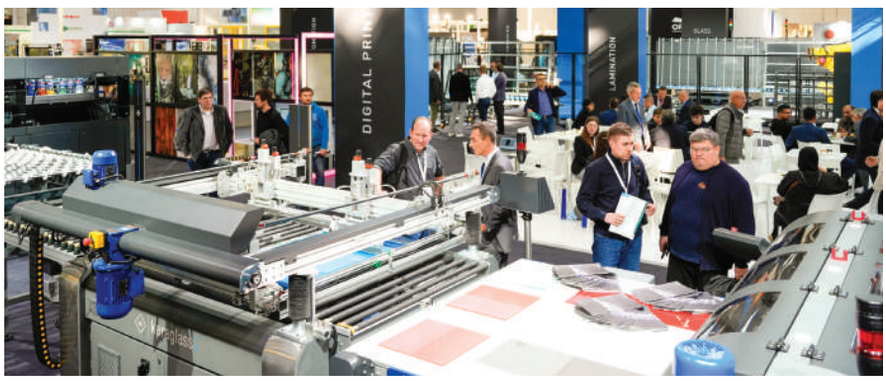
us to successfully implement our CO_2 roadmap and make a key contribution to achieving our climate targets."

glasstec 2024 focused specifically on the key topics of the industry: digital technologies, the circular economy and decarbonisation. A first-class supporting programme featuring

lectures, interactive workshops and special shows offered trade visitors in-depth insights into the current challenges and opportunities facing the glass industry and provided valuable networking opportunities. Under the motto "We Are Glass", these focal points resonated well

with both the exhibitors and in the supporting programme. New formats such as CircuClarity One, the glass melting pot, the glass trends sessions and the architecture forum were all successfully introduced, while the innovation show glass technology live showcased the latest technological developments as a crowd-puller.

Dr. Johann Overath, Managing Director at BV Glas: *"As the trade association for the glass industry and sponsor of glasstec, we can look back on an exciting week at the trade fair. The strained economic situation is obviously also dampening the mood in the industry. Even so, as always, it*



was exciting to experience glass in its many applications! Glass is a fantastic material! #WeAreGlass"

The special Handwerk LIVE area also proved very popular in 2024. Offering practical demonstrations of the latest craft techniques it consistently met with strong levels of interest. From safety glass to glass art, the entire spectrum of handcrafted glass production and finishing was vividly presented.

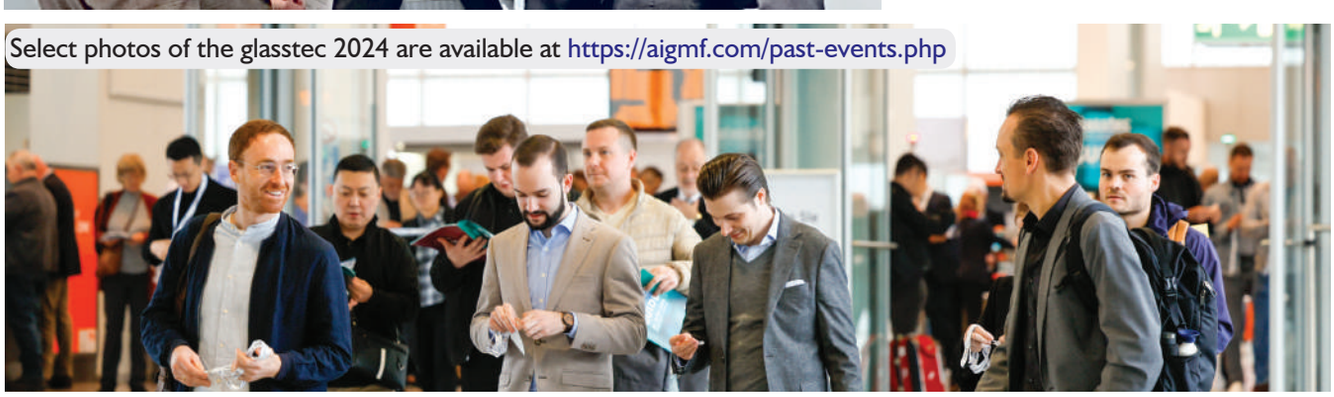
Mr. Arne Klöfkorn, COO Bohle: *"As the world's leading trade fair, glasstec has once again lived up to its name this year. Over four successful days, we welcomed visitors from throughout the world to the Bohle stand. Both the glass industry and the glazier trade were represented. We were particularly impressed by the quality of the discussions, reflecting a high level of interest in our first-class product solutions. Despite the challenging economic forecasts, we detect a positive mood in the industry, which should give us all a tailwind for the months ahead."*

Ms. Gesine Bergmann, VDMA e.V. Forum Glass Technology: *"The topics at glasstec were right on target. Energy efficiency and the reuse of materials resonated strongly with visitors. It also became clear that special applications are currently playing a very important role."*

Mr. Salvatore Ruggiero, Vice President Marketing & Communications, Schott AG: *"glasstec remains the premier gathering for the glass industry, offering an opportunity to connect with customers, discover fresh ideas, and engage with those seeking innovative solutions. For us, it's the ideal platform to showcase our latest innovations, advancements in cutting-edge technologies, and sustainability initiatives, as we collaborate with our partners to shape the future."*

Following the success of glasstec 2024, exhibitors and visitors alike look forward to the next edition from Oct 20-23, 2026 in Düsseldorf ■

Select photos of the glasstec 2024 are available at https://aigmf.com/past-events.php



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National Education Day Celebrated at the Executive Committee Meeting and Related Events in Goa

(Nov 11-13, 2024)

The last 2024 Executive Committee Meeting of the AIGMF was held at GOA on Nov 12. The meeting was sponsored by M/s Nirmal Glasstech Industries at the Grand Hyatt, Bambolim Goa.

The group hotel stay was sponsored by M/s Glass Futures Ltd., UNITED KINGDOM at the Park Inn by Radisson Goa Candolim, from Nov 11-13. All Guests were provided airport transfers including local transportation.

On Nov 11, the dinner was hosted by Glass Futures Ltd., at Park Inn by Radisson Goa Candolim, GOA. Welcome speech was delivered by Mr. Dave Fordham, longstanding collaborator with AIGMF. Mr. Dave Fordham is a Former Publisher of Glass Worldwide magazine (UK); and currently serves as Member Editorial Board of KANCH in addition to his prime role as Global Engagement Lead with Glass Futures Ltd., St. Helens, UNITED KINGDOM.

After the breakfast at Park Inn by Radisson Goa Candolim on Nov 12, the plantation drive was done over a Group photo and before departing for the Executive Committee meeting at Grand Hyatt.

The welcome speech was given by Mr. Purvish Shah (Hon. General Secretary AIGMF; Director of Gopal Glass Works Ltd., and Gobind Glass and Industries Ltd). Mr. Shah welcomed all participants to this first-ever gathering of the Executive Committee Meeting

President AIGMF Mr. Rajesh Khosla (centre) and host of the Ex-Com Meeting Mr. Nirmal Mundra of Nirmal Glasstech Industries welcoming Youth icon Mr. Vaibhav Gehlot (right), son of former CM RAJASTHAN Mr. Ashok Gehlot. An active Politician who also served as the President of the Rajasthan Cricket Association was welcomed at the AIGMF Meeting to encourage Youth participation for educating benefits of Glass as a 100% sustainable packaging and building material.

with family at GOA. He said that "*the program evolves around sustainability, we are extremely grateful to Glass Futures not only for sponsoring the accommodation of all participants but also for their efforts to educate the industry on next-generation biofuels, electric energy, and decarbonization*

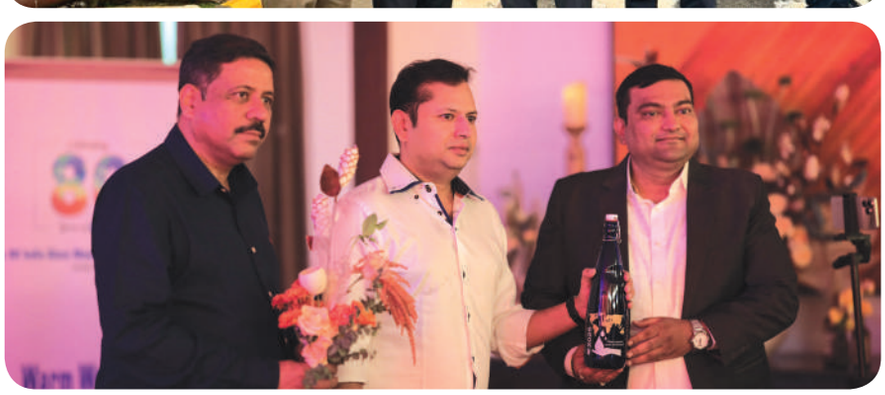
for manufacturing units. This aligns perfectly with the overall theme in the green city of GOA, where we all need to seriously think and find ways to make our environment clean. As a corporate social responsibility, and as a not-for-profit organization, AIGMF's mandate

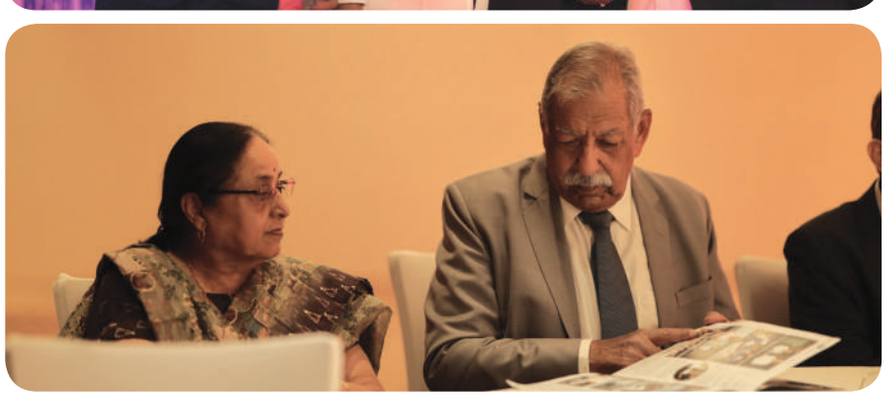
is to bring everyone together for this green-building exercise."

Mr. Shah thanked Mr. Nirmal Mundra of Nirmal Glasstech Industries for hosting the Executive Committee meeting and aligning it with his son's wedding in GOA.

Mr. Dave Fordham (Global Engagement Lead, Glass Futures, UK) thanked AIGMF and glass members for getting together to discuss sustainability via decarbonisation which is need of the hour.

Unveiling of the annual calendar of AIGMF for 2025 on 'Glass Decorates





or कांच से सजावट was done by the office bearers, overseas guests and the eldest member of the Glass Industry Mr. Mohan Lalvani of Mascot Engineering Company featuring best entries from the Youth 2024 contest.

To commemorate International Youth Day, The All India Glass Manufacturers'

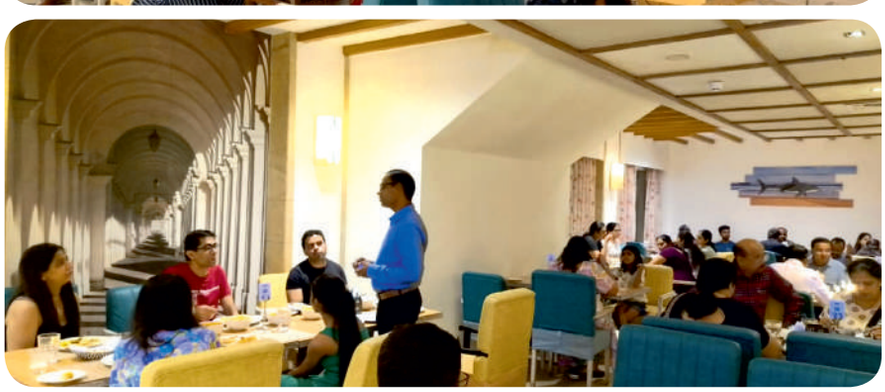
Federation (AIGMF) invited online entries from the age group between 7-24 years to participate in the contest themed 'Glass Decorates' or कांच से सजावट।

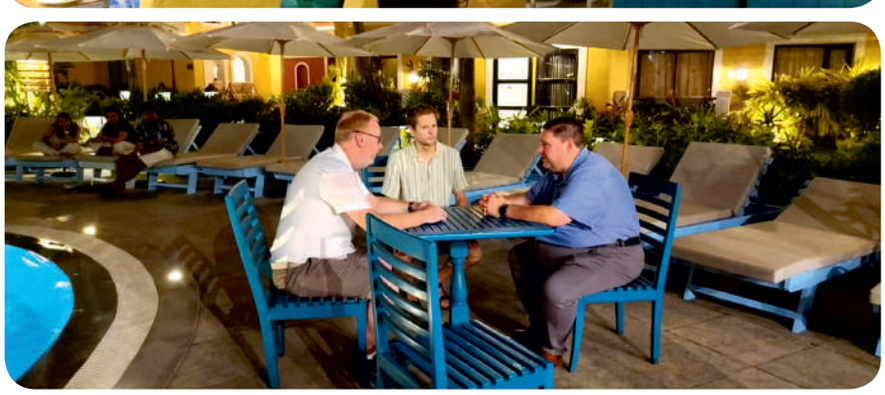
Winners were given cash prizes. And later the entire project was converted

into the 2025 Calendar by using their creatives and poems.

As the National Apex Body of the Glass Industry, the AIGMF undertakes socially responsible steps as a voluntary service to society, thereby bringing increased awareness of Glass being a safe and 100% recyclable packaging material.

It was told that as a part of an educative process, 1000 wall calendars will be distributed to AIGMF Members/ Regional Associations, Stakeholders: Govt. of India Secretaries/office of Chief Secretaries/LGs/Administrators/ CMs/select GoI departments/Trade





Chambers/Education Secretaries/All FOSG Members/Firozabad/CGCRI contacts/General, Foreign Missions, select PAN India schools/colleges/ Universities, Niti Aayog, PMO, MNRE, Solar Module/Manufacturers, select worldwide glass associations, etc., by Nov 30, 2024.

The keynote speech on Role of Educational Institutions for building Industry workforce was given by Dr. A S RAO (Prof. & HoD, Department of Applied Physics, Delhi Technological University, DELHI).

Mr. Rajesh Khosla (President AIGMF and CEO / President AGI Greenpac) spoke about Need for Educating-Glass as an Eco-friendly material. He said "*as we gather at the National Education Day, the topic clearly conveys our humble role to showcase the wonderful product glass as 100% recyclable and its role in reducing unsustainable packaging on the planet Earth.*"

"Glass is fully recyclable, and with the support of global research organizations like Glass Futures and Electroglass, we

Mr. Mohan Lalvani presents the glass tumblers made by AGI glaspac to its CEO and President AIGMF Mr. Rajesh Khosla. These tumblers were made available from the personal collection of Mr. Lalvani that dates to 1990's showcasing Glass will never be out of lust.

have an ideal opportunity to discuss green policies that each of us can adopt for a better environment."

Mr. Khosla said*" Education can flow from any level, on the AIGMF website you can check how young minds have beautifully expressed their thoughts through drawings, poems, essays, and photographs on the benefits of glass for health and eco-reasons."*

He also mentioned that *"this excellent work will be featured in the first-ever touring exhibition, 'Glass or Class', from December 11-13 at Glasstech Asia and Fenestration Asia in VIETNAM partnered with Messe München. The top entries from leading schools and colleges in INDIA will be displayed to a global audience. We believe that this is a two-way communication process, and I invite all members to share ideas as we move forward for a better living society".*

A technical presentation on Decarbonization in the Glass industry was given by Mr. Brian Matuszewski (Commercial Project Manager, Glass Futures) which was followed by a presentation on All Electric Melting- the proven technology for a sustainable, renewable and low carbon future by Mr. Grahame Stuart (Technical Sales Manager, Electroglass Ltd.).

After the lunch, the group departed for Ponda where a guided tour at the state-of-the-art Craft and Innovation of Diageo (member of Glass Futures) demonstrating its long-term research with a focus on driving Grain-to-Glass sustainability was kindly arranged by Mr. Srinidhi Rao, Head-Sustainability, Diageo India and his team for the visiting delegation. Members learned that Diageo has also launched an employability linked skills training program to train 1,000 youth over 3 years, in association with the Skill Development Mission of Government of Goa. More information is available at the video link- https://youtu.be/jl4zSSDHjkc?si=Q_TxBS-qG912x0hg

Later, the evening program provided an opportunity for all participants to attend the grand wedding celebrations of Mr. Aditya Mundra, Director, Nirmal Glasstech Industries at Grand Hyatt, Bambolim.

The three day event concluded on a high note that covered discussions on sustainability, national education policy, site visits, bonding and local sightseeing ■

All presentations and select photos are available at https://aigmf.com/past-events.php

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In a move set to redefine the IS Machine landscape in India, leading innovator Shamvik Glasstech has announced the development of a groundbreaking Servo-enabled machine line.
With a focus on technological advancements and user-centric design, this unveiling marks a pivotal moment in the company's mission to contribute to the future of glass container production "Made in India".

The new product line, promises to deliver a fusion of high performance and seamless integration.

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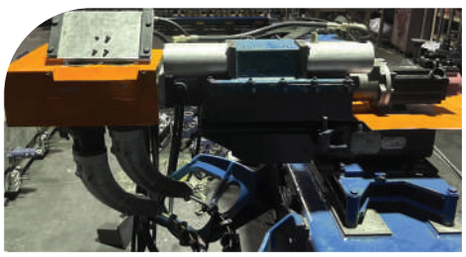
While trial under glass is already underway, Shamvik will complete additional new installations by Q2 2024 with a further 5 lines in the pipeline. Shamvik anticipates these to serve as the benchmark for the future of the Indian Glass Container Production Industry.



We are thrilled to introduce our latest innovation to the world. At Shamvik, we believe in pushing boundaries, challenging conventions, and shaping a future where technology serves as a catalyst for positive change. With this new product line, we are confident in our ability to empower individuals, businesses, and communities to thrive.

Rahul Munshi, Director

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Grahame Stuart
Technical Sales Manager., Electroglass Ltd.
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Mr. Grahame Stuart joined Electroglass Ltd. (AIGMF's Affiliate Member) almost 24 years ago and has held key roles in a number of the company's activities. These have included hands-on equipment installation, maintenance and servicing, followed by wider responsibilities in system design, engineering, commissioning and customer training. He has been actively involved in the company's research and development work and customer operational advice and support.

Mr. Stuart is responsible for marketing and promotional activities and for system and equipment sales. He has led many of the company's direct sales activities, handling the technical correspondence with potential and existing customers in response to enquiries, coordinating preparation of tenders for larger projects, making sales tours and targeted technical sales visits to customers in various countries. He has been a key member and sometimes the lead member of the technical sales teams at numerous trade shows around the world, has authored a range of articles that have appeared in leading glass industry publications and delivered technical presentations at a number of industry conferences and seminars and AIGMF events.

There has been a common theme during discussions with customers, at conferences and at exhibitions during 2024; - reducing reliance on fossil fuels and moving to a more sustainable and therefore greener energy policy.

For many the key to meeting these two goals in our industry lies in the melting stage of the glass making process, a high proportion of which takes place in fuel fired furnaces with thermal efficiencies of 50% or less. In other words, over half of the melting energy applied is simply lost, despite the industry's efforts to minimise both the losses and their environmental impact.

While concentrating on this area of the glass making process will no doubt bring further medium- and long-term improvements, there are solutions elsewhere within the overall process that can offer major benefits, both in terms of carbon reduction and operating cost savings, using proven technology and in a much shorter timescale. One of these areas is the conditioning of the glass within the distributor and forehearth system.

The majority of distributor channels and forehearths used by container glass manufacturers are gas heated. In terms of energy usage, these are inefficient. Total heat energy input can be many times higher than needed in an equivalent well designed all-electric system, in many cases eight to twelve times higher. Even allowing for sometimes significant differences in the unit energy cost between electricity and gas, such savings translate directly to major energy cost savings as well as eliminating all combustion gas emissions.

The gas heated approach requires the application of often complex, special shaped roof blocks and superstructure designs to attempt to control the distribution of heat release from the combustion process, allow the evacuation of waste gases and contain any forced air cooling in order to achieve acceptable thermal homogeneity. Whilst many designs have been successful in this quest, they remain thermally inefficient and ultimately rely on non-renewable, polluting fossil fuels.

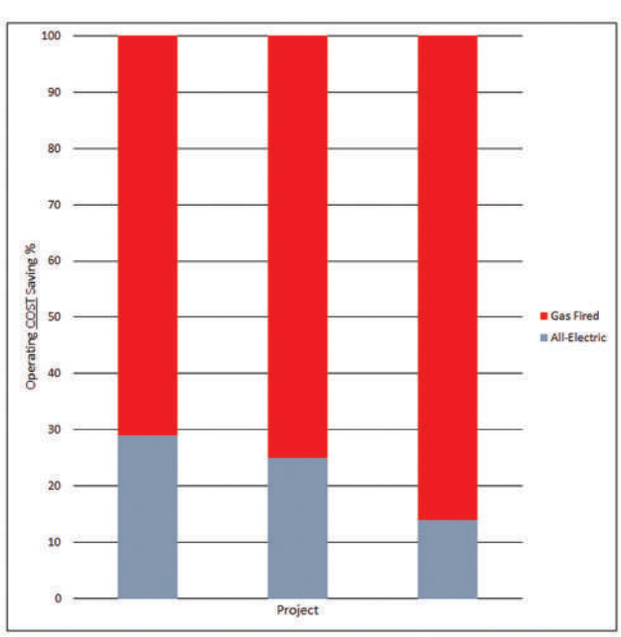

Figure 1 - Operating cost savings for three current projects

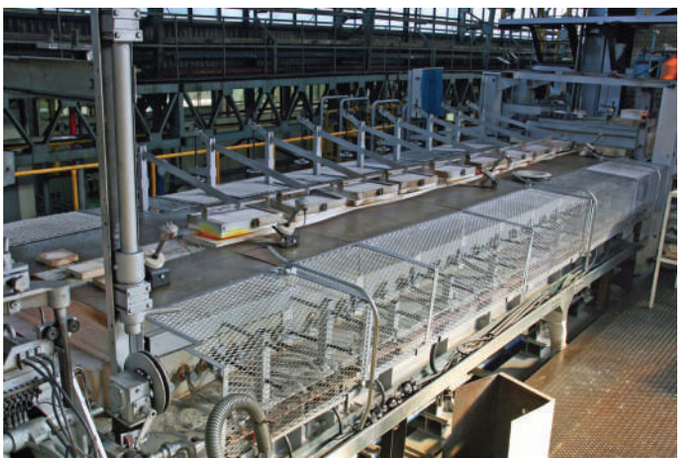

Figure 2-Typical Electroflex all-electric forehearth

From soda-lime container glass to aggressive specialist glasses such as borosilicate and fluoride opal for tableware, cookware and containers, all-electric forehearth systems have demonstrated proven performance in terms of both energy usage, cost reductions and simplified, low maintenance operation.

In the last decade there has been an increased interest in high and very high-capacity all-electric distributor and forehearths systems, particularly for the cooling and conditioning of container glass. This is of little surprise when three of our most recent projects offered operating COST savings ranging from 71% for 3 x 48" high-capacity forehearths, 75% for 2 x 36" forehearths and 86% for 3 x 52" very high-capacity forehearths.

For many, the move to all-electric conditioning has relied on modified gas heated forehearth designs, where gas burner systems are maintained for warm up and emergency use, with electrical energy input directly into the glass by means of some form of molybdenum electrode. These design compromises are not optimised in terms of insulation, heat loss, or energy input and are likely to result in much higher than necessary energy usage, risk of glass reboil due to localised heating around the many high-power electrodes often used and, in many cases, where certain dry electrode designs are employed, a risk of oxygen blister generation.

To truly benefit from a move to all-electric conditioning a different approach is needed, - an approach that offers a purpose-built design without compromises carried over from other gas or electric forehearth design types. Key to this approach is the selection and use of low thermal mass insulating materials to significantly reduce losses and the application of radiant heating elements above the glass surface to apply heat where needed.

Element type and zoning is an important part of our approach when designing our Electroflex Forehearths for container and other non-volatile glasses. The use of profile heating elements to apply heat along the channel sides where the glass is coldest and the ability to offer independent side to side heating where needed enables Thermal Homogeneity Index figures higher than similar gas heated designs, up to and over 98%.

When producing dark or low transmission glasses it is often advantageous to provide additional thermal homogeneity security by applying specially designed low power dry electrodes in the conditioning or equalising zone. These will typically be operating at powers less than 6kW for the entire zone and give the ability to control the power independently to each channel side with automatic temperature setpoint control from tri-level thermocouples placed ahead of the spout entrance.

Dry electrode design is critical to ensure satisfactory long-term operation and to prevent glass defects and refractory erosion. In their simplest form dry electrodes can be a section of G.M.E grade molybdenum connected via a thread to a piece of stainless steel or Inconel. This concept relies on the junction between the two dissimilar materials being at a point where the glass temperature is low enough to create a cold glass seal thereby preventing oxidisation of the molybdenum. However, there is significant risk of galvanic reaction at the junction of the two materials leading to the generation of small DC voltages which can cause the glass to disassociate creating bubbles of pure oxygen.

These bubbles will of course impact production yield, but a more serious and often overlooked problem is the risk of oxidisation of the molybdenum electrode at its junction with the stainless steel which if left unchecked will lead to electrode failure, increased localised heating, and accelerated refractory wear.

The approach used in our dry

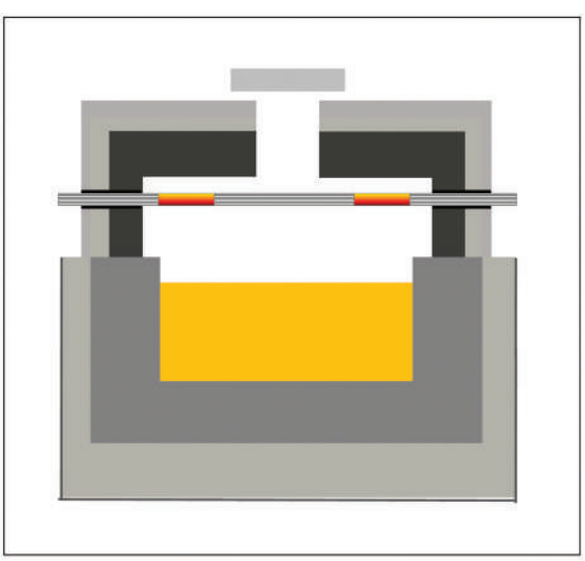

Figure 3-Targeted heating using profile heating elements

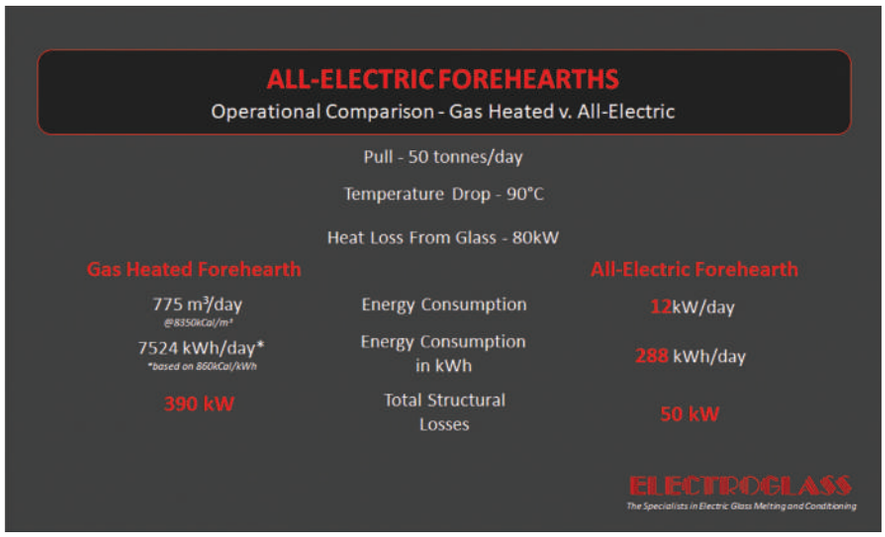

Figure 4-A comparison between gas and Electroflex All-Electric designs

electrode design is different and ensures that the entire current path from electrical connection to glass contact is through the molybdenum. The protective stainless-steel sheath of our design is electrically isolated from the molybdenum ensuring no dissimilar metal contact in the current path. Their use is not limited to our own systems, and they are widely used by glass makers looking for a better dry electrode solution in their own and other suppliers' systems.

CONVERSION FROM GAS TO ELECTROFLEX ALL-ELECTRIC

Whether planned for the cold repair of an existing distributor or forehearth system, or for a new build, it is a very quick process for us to calculate energy consumptions, operating COST savings, capital costs and associated payback times of adopting the Electroglass all-electric solution. Energy cost savings of between 60% and 90% are typical.

On one current project for example, it was quickly shown that savings of 90% in overall operating cost would be achieved. As in almost every such conversion project from gas to all-electric conditioning we will maintain the widths and lengths of the existing gas heated system and will reuse existing support steel and casings.

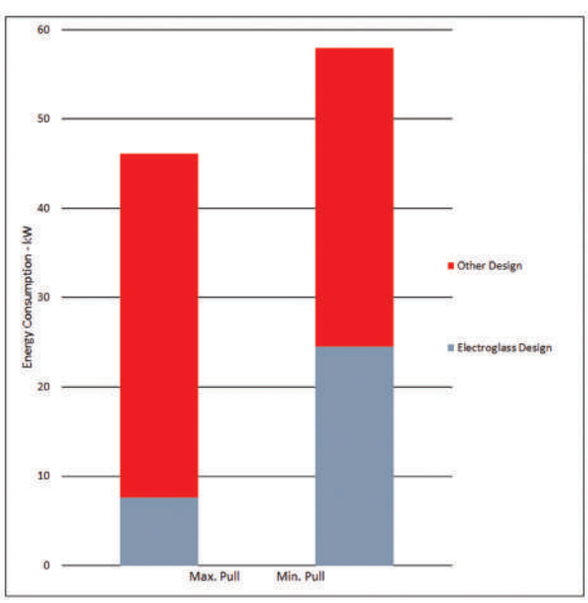

Figure 5-A comparison between energy consumption for two all-electric designs

In this particular case the calculated energy cost savings of £750,000 over a typical campaign are for just one forehearth and if so desired can have the conversion carried out during furnace operation offering immediate savings whilst totally removing the use of fossil fuels.

These savings are for a single forehearth, imagine the savings that could be realised by converting the distributor and all other forehearths.

NOT ALL ALL-ELECTRIC FOREHEARTH DESIGNS ARE EQUAL

The concept of electric heating of distributors and forehearths is far from new, - Electroglass has been developing, designing, and supplying this technology to all sectors of the glass industry for over 45 years. There are however important differences in the concepts that various designers have used which can significantly affect operating cost, energy consumption, thermal homogeneity and operating stability.

As an example, a recent comparison showed that when comparing an Electroflex All-Electric design to another all-electric design the energy inputted could be as much as 550% higher!

CONVERT NOW, - NO NEED TO WAIT FOR A MAJOR REPAIR

Where converting from gas to all-electric makes financial and operational sense it can be done relatively easily during furnace operation without the need to wait for a major furnace stoppage or repair. Most conversions can maintain the existing steel support structure, casings, substructure, and glass contact material. Work to replace the superstructure with a special low thermal mass design, install the heating element zones and damper systems can be carried out following a controlled cool down, with production restored in a matter of weeks.

This means that the many benefits including energy cost savings, improved homogeneity, simplified operation, and minimal maintenance requirements can be realised now ■

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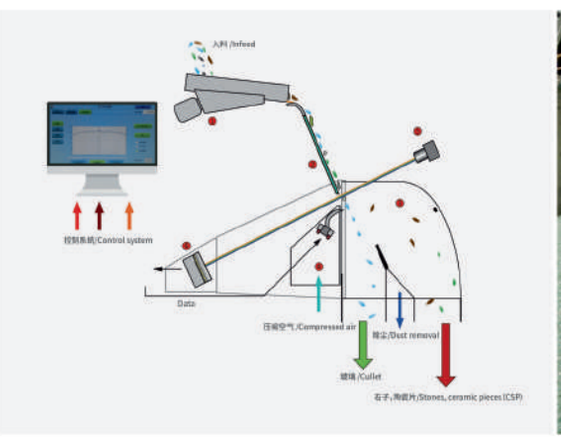

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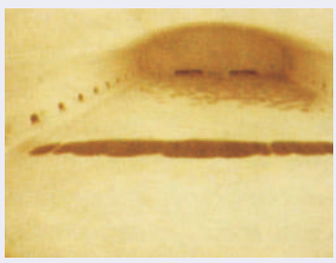







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Heye BlankSideRobot Enhances Efficiency of Glass Container Production

The latest addition to Heye International's line-up of equipment advancements is the cutting-edge swabbing robot for the blank side, further enhancing the efficiency of the glass container production process.

The Heye BlankSideRobot's compact design eliminates the need for extra control cabinets, as the entire control system is seamlessly integrated within the robot and the set-up section.

Furthermore, Heye engineers have paid much attention to the oil supply system, with a key emphasis on minimizing the distance for oil supply.

By having the lubricant container directly mounted in the robot housing, the lubricant supply line to the spray nozzles has been significantly shortened. This brings the crucial advantage that the hose line is considerably shorter, thereby preventing sedimentation of the graphite particles out of the emulsion. This ensures a permanently consistent emulsion mix and clogging of the supply lines is avoided.

The redesign of the spray tool and its attachment to the robot arm have significantly increased the spray tool's lifespan and operational safety.

The robot's integrated LED strips not only offer a clear visual representation of its operating status but also serve as a convenient way to monitor the lubricant level in the tank.

OPERATING PRINCIPLE

The robot moves along a track mounted on the overhead beam. This ensures that the floor remains free from obstacles, allowing for seamless mould changes without any interference by the robot.

Heye IS machines are prepared for the installation of the Heye BlankSideRobot. Due to the sturdy mounting of the robot on the overhead beam, the effect of vibration is eliminated. By excluding vibrations, it is ensured that the lubrication points are always precisely targeted.

The robot sprays an emulsion into the opened moulds on the blank side. "Swabbing on the fly" is another key advantage, eliminating the need for production downtime.

Short spraying cycles with a small amount of lubricant avoid the need to reject bottles after swabbing. In conjunction with a servo invert mechanism, it is possible to use a special program for lubricating the neck rings.

SET-UP

Another notable advantage is the robot set-up process, which is realised using a set-up section located in front of the IS machine. A significant benefit is the integration of the control system within the set-up section, eliminating the need for additional control cabinets.

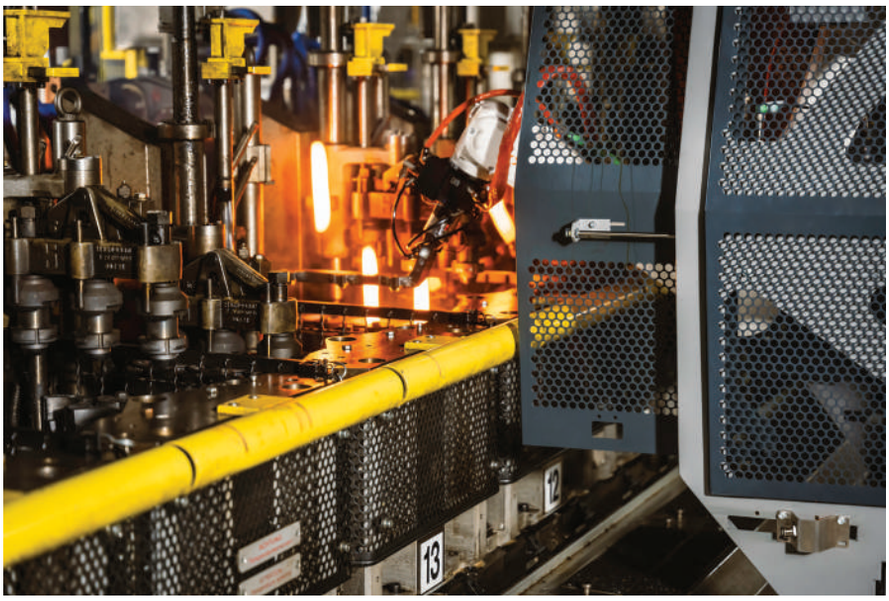
The operator enters the coordinates of the motion profile and sets the movement speeds. Once the job is saved in the article database, it can be recalled and re-applied during a subsequent production of the article.

In multi-weight operation, the Heye BlankSideRobot has the capability to handle up to four different mould and finish jobs simultaneously, making it ideal for product testing purposes.

HEALTH AND SAFETY

Particular attention was paid to the

Heye SpeedLine tandem line equipped with Heye BlankSideRobot



Maximum operation safety

safety of both the system and the user personnel.

When it comes to system safety, the focus is on detecting and preventing collisions between the robot and the invert, as well as the use of a non-destructive tool.

The first stage is collision avoidance, where the SpeedLine's invert mechanism stops as soon as the swabbing robot enters the potential collision area. The second stage involves collision detection. If a collision does occur, the section will automatically stop to avoid any additional damage. The third stage involves the use of a "non-destructive" lubrication tool. Heye International uses a breakaway magnetic coupling. If there is physical contact between the invert and the lubricating head, the front part of the tool disconnects from a magnetic coupling on the lubricating tool. A safety rope, similar to the wheel tethers used in Formula 1, prevents the lubricating tool from falling uncontrollably into the machine.

The safety of the personnel is guaranteed by several equipment features. Firstly, the robot's housing protects the operator from contact with the moving robot arm. The entire unit (hanging on the overhead rail) is equipped with sensors. When the robot starts its lubrication cycle, the area in the direction of travel is monitored by sensors. If someone enters this area, the Heye BlankSideRobot stops automatically. In addition, the retractable panels prevent the operator from reaching into the IS machine past the robot.

The robot's integrated LED strips indicate the operating mode, the direction of travel, the countdown to the robot's start and the oil level in the oil tank.

ADVANTAGES

With Heye's cutting-edge robot technology, a glassmaker can experience the following benefits:

- Precise and on-time swabbing with minimized lubricant consumption
- 24/7 consistent and reliable swabbing performance
- Multi-weight production possible (different articles on one machine)
- Oil storage tank and oil mixing unit both integrated in the robot
- Short piping and less wiring
- Magnetic coupling between the spray tool and the robot arm
- 7th axis (decoupling) for manual robot relocation along the production line
- Neck ring swabbing (in combination with a servo invert)
- Clear display of operating status by LED lights
- Easy-to-use touch panel for programming and set-up

The Heye BlankSideRobot can be easily integrated into a Heye SpeedLine. It is suitable for all production processes (Blow & Blow, Press & Blow and NNPB), as well as for round and non-round articles in any glass colour.

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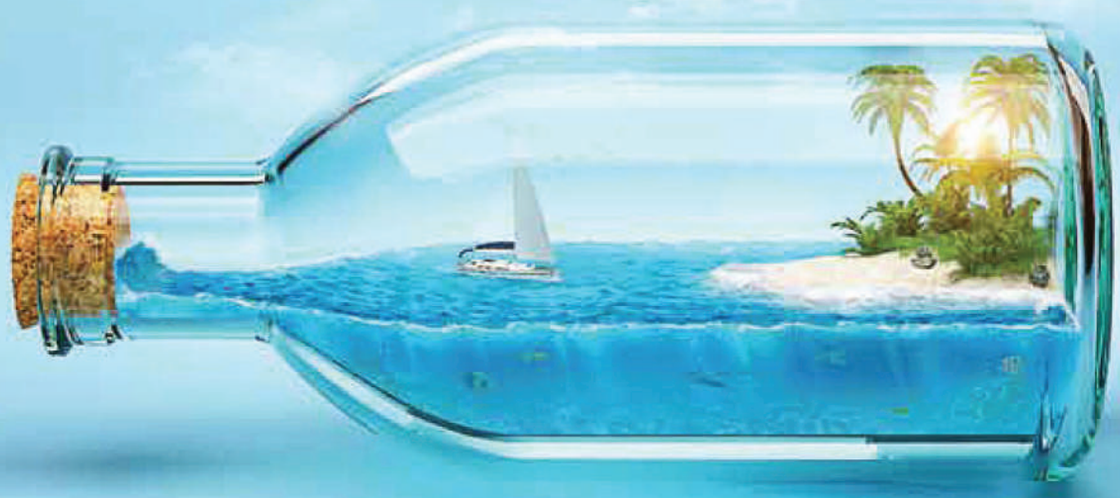

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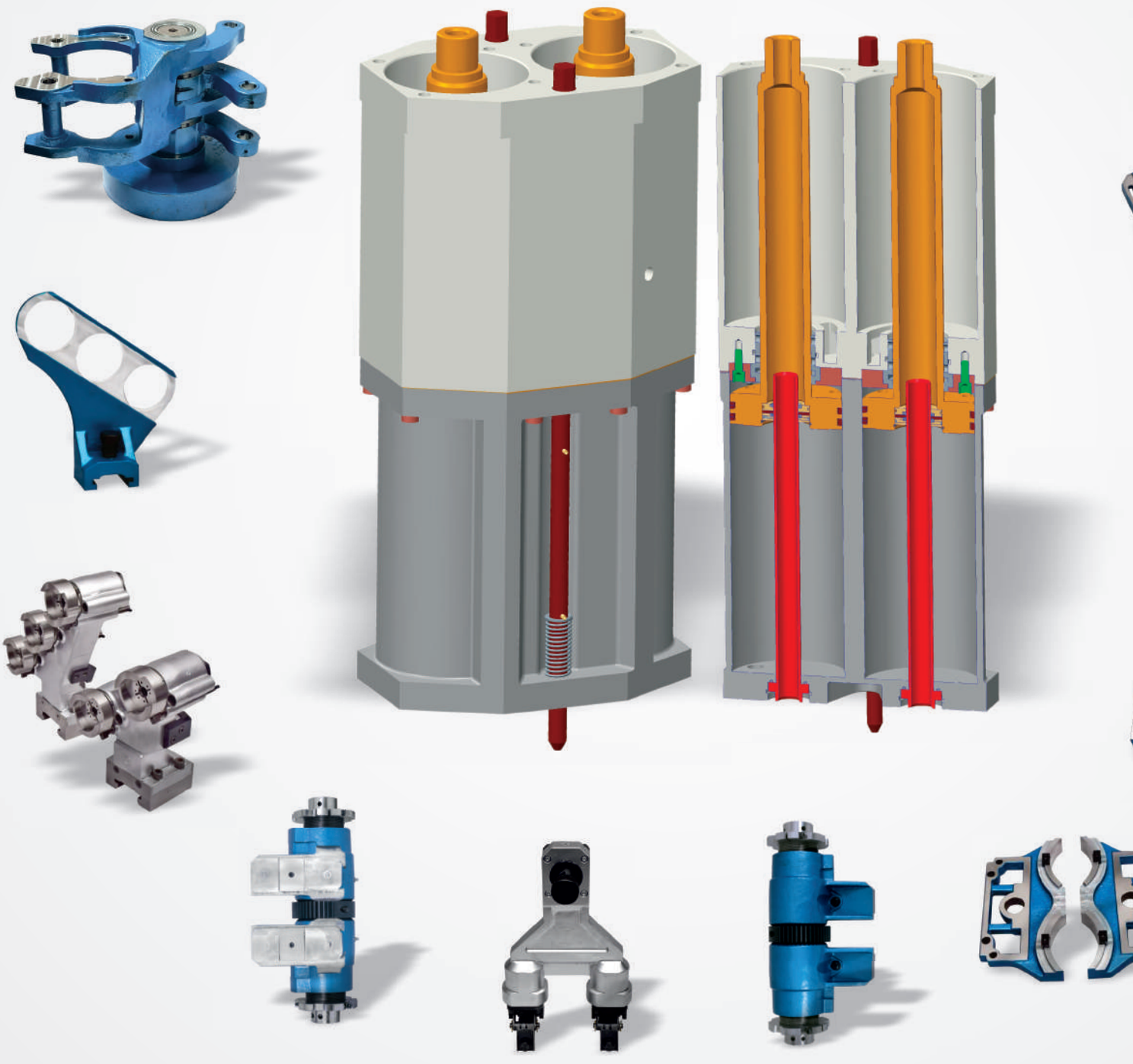

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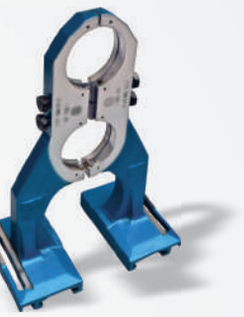

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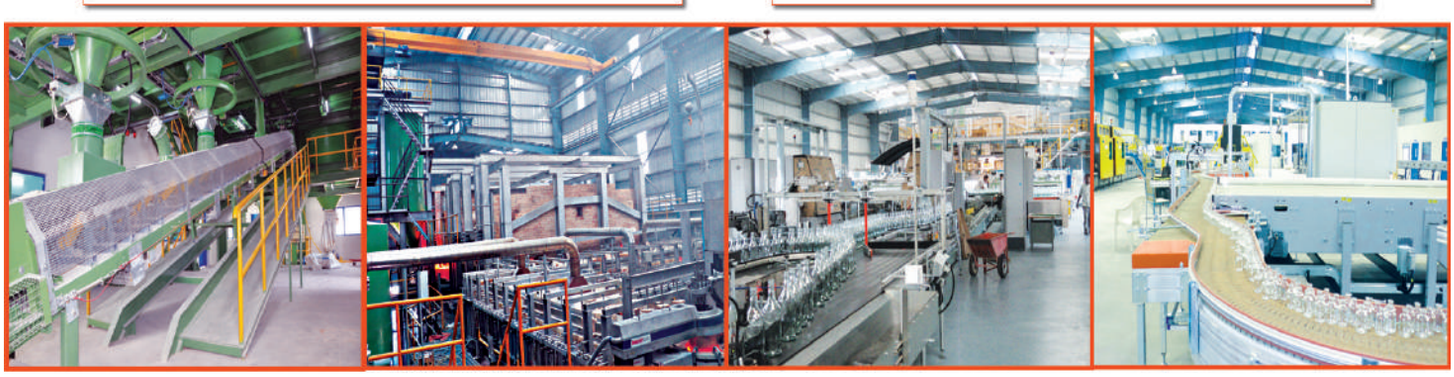

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GAFA 2024: A Resounding Success for Southeast Asia's Glass and Façade Industry

The 20th edition of Glasstech Asia and Fenestration Asia (GAFA) was held at Saigon Exhibition and Convention Center (SECC) in Ho Chi Minh City, VIETNAM from Dec 11-13, 2024 sharing three days of inspiration, innovation in Glass Façade industry in collaboration with the Vietnam Green Building Council (VGBC), Ministry of Construction (MOC), the Singapore Glass Association, and MMI Asia.

The event centred on all things glass and buildings which includes sectors in manufacturing, processing, and supplies for glass machineries, along with construction and façade.

AIGMF supported the event as a Media partner. AIGMF was allocated stall # FAC-06 at the international pavilion and was invited by Messe München to be a part of their show.

With over 4,000 trade visitors and delegates from more than 50 countries, along with around 289 exhibitors, GAFA 2024 truly celebrated the global reach of the glass and façade industry.

Day 1 was packed with dynamic conference sessions, cutting-edge

product showcases, and vibrant networking. The evening wrapped up with a memorable Gala Dinner, hosted by Vieglass and MMI Asia, where industry professionals celebrated innovation and forged valuable connections.

GAFA 2024 offered exclusive business matching and featured the Future Arcologies: Glass-Centric High-Rise Design competition, connecting industry leaders and innovators to forge new partnerships and drive collaborations. The participants joined

Franz Dorninger

HUB Director

This exhibition is very important to us. We truly value being in vibrant countries like Vietnam, as it gives us the opportunity to better understand the culture, industry, and trends. It's an amazing experience to see the local dynamics up close.

LiSEC

Christian Seibt

Senior Technical Advisory Service Manager

Participating in such an exhibition is very important for us because it is a key starting point for exploring new markets. as we aim to find new partners and grow our business in Southeast Asia.

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Putra Narjadin

Chairman

Indonesia Flat & Safety Glass Association:

GAFA 2024 has been a key platform for industry players across Southeast Asia to connect. The conference, featuring experts, the Green Building Council, industry leaders, and government representatives, provided valuable insights into upcoming trends, developments, and the future of the glass industry. It was an excellent opportunity to stay informed and understand where the industry is heading.

Jose Sales

Philippine Chamber of Glass and Aluminium Industries

Attending this event is a great honor for us, as it allows us to experience the new technologies available in the market, reconnect with old friends, and learn from their success. It's an excellent opportunity for networking, sharing ideas, and improving our companies to reach greater heights in the industry.

Jacob Jiang

Sales Director

Glasstech Asia provides a fantastic platform for manufacturers like us to meet customers, establish new contacts, and build connections that lead to orders. We're grateful to Messe München for offering such a valuable stage for our business growth.

UC THINH GLASS

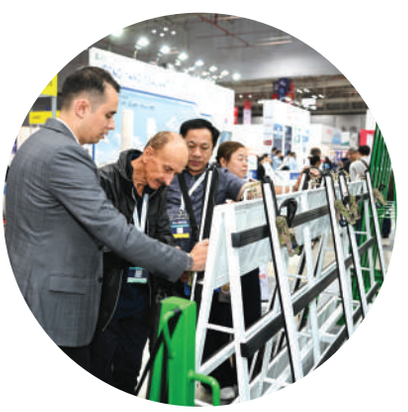
the inspiring sessions, live demos, and prime networking opportunities.

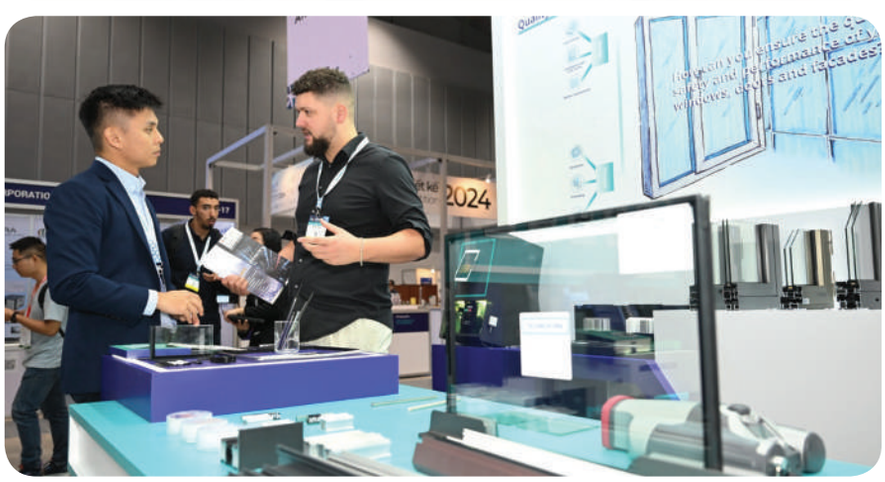
The event facilitated valuable connections and showcased cutting-edge innovations that are set to shape the future of the sector.

GAFA 2024 was a celebration of bold ideas and visionary talent!

The spotlight shone on the Future Arcologies Design Competition Finals, where groundbreaking concepts in glass and façade design took centre stage.

In partnership with the University of Architecture Ho Chi Minh City,





this inspiring showcase highlighted creativity and innovation, setting new benchmarks for the future of sustainable architecture.

Six awards were presented: three for professionals' group and three for students' group. These groundbreaking designs showcase the best in sustainable innovation and are setting the stage for the future of architecture.

The grand finale of GAFA 2024 concluded with the exciting Innovation Pitching Forum, where speakers and exhibitors unveiled groundbreaking ideas and transformative technologies that are shaping the future of glass, façade technology, and architectural design.

In recognition of their exceptional contributions, some speakers were honoured with the Innovation Pitching Forum Trophy, celebrating their role in driving innovation and inspiring the industry.

Touring Exhibition on 'Glass or Class', an Award winning blend of Artwork / Photography / Poems / Essays by young minds on Glass in our daily lives held over the Annual Youth Contests organised by The All India Glass Manufacturers' Federation (AIGMF) between 2018-2024 was unveiled at the GAFA 2024.

This add-on event was organised by MMI Asia in partnership with the Singapore Glass Association (SGA). The digital exhibition is available under past events at www.aigmf.com

The 2025, 21st edition of Glasstech Asia and Fenestration Asia is slated to be held from Nov 6-9, 2025 at BSD City, INDONESIA.

AIGMF would again be supporting the event as an important partner from INDIA ■

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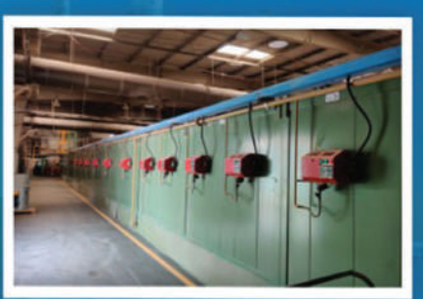



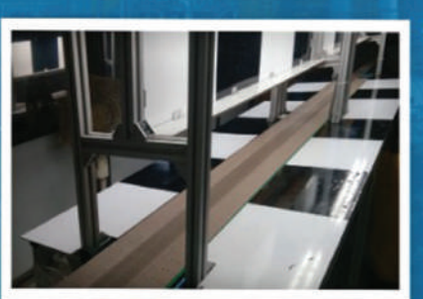

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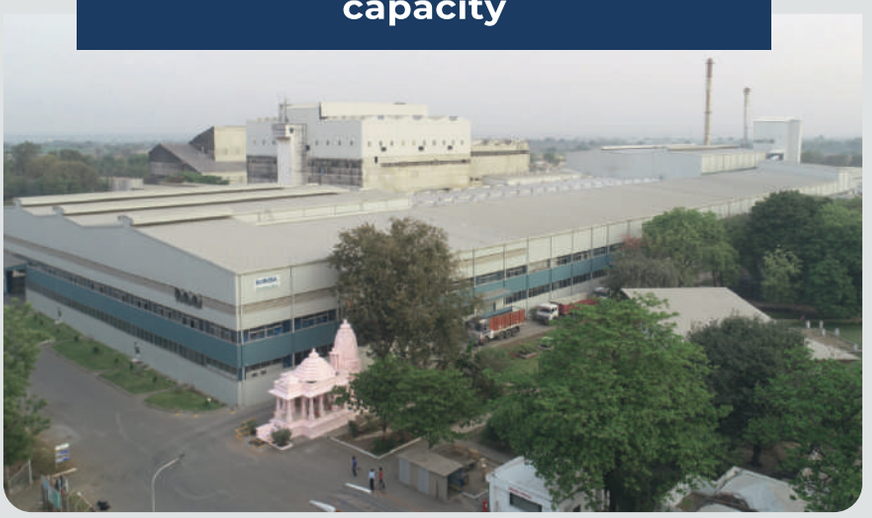

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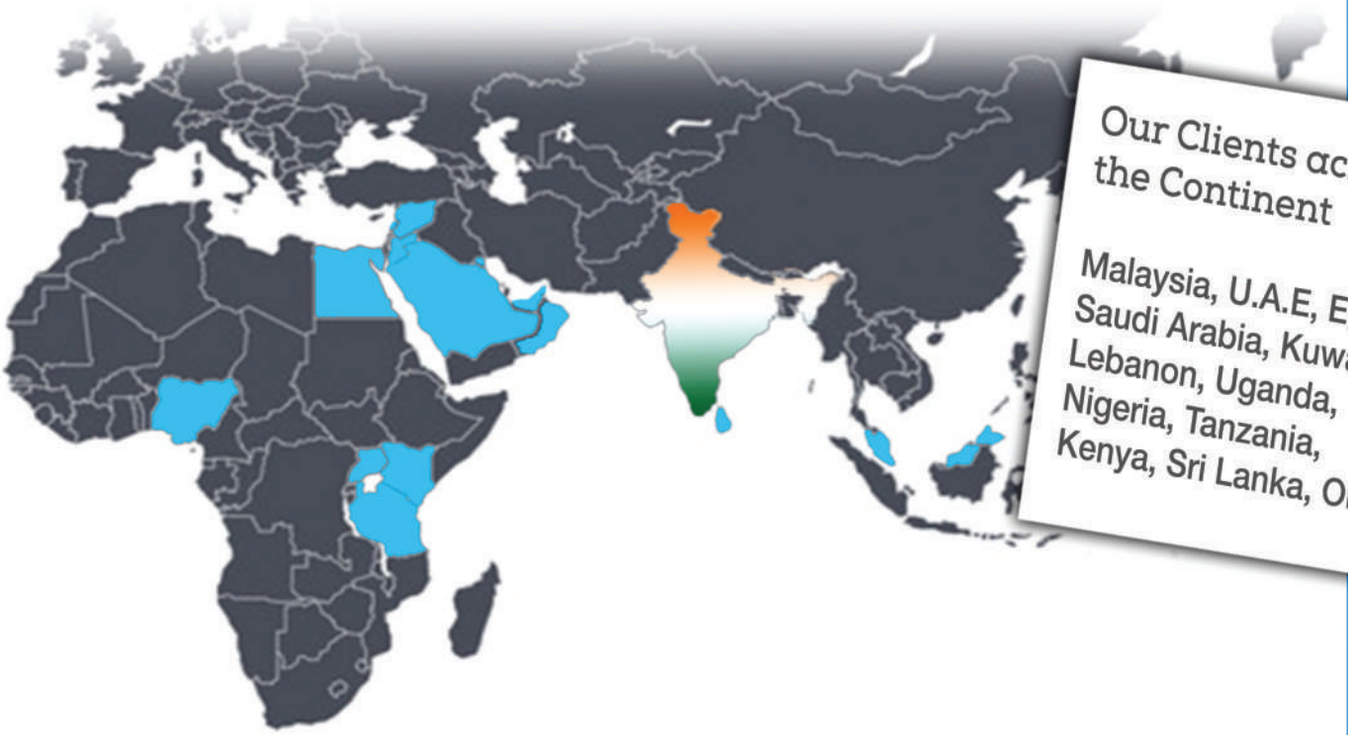

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Foreign Companies supplying machinery etc., to the glass industry are also enrolled as **Affiliate Members**.

Membership forms can be downloaded from www.aigmf.com/membership.php

Members of the Federation are enrolled on the recommendation of Zonal Associations viz.:

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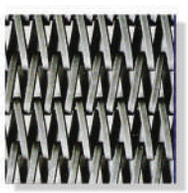

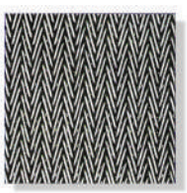

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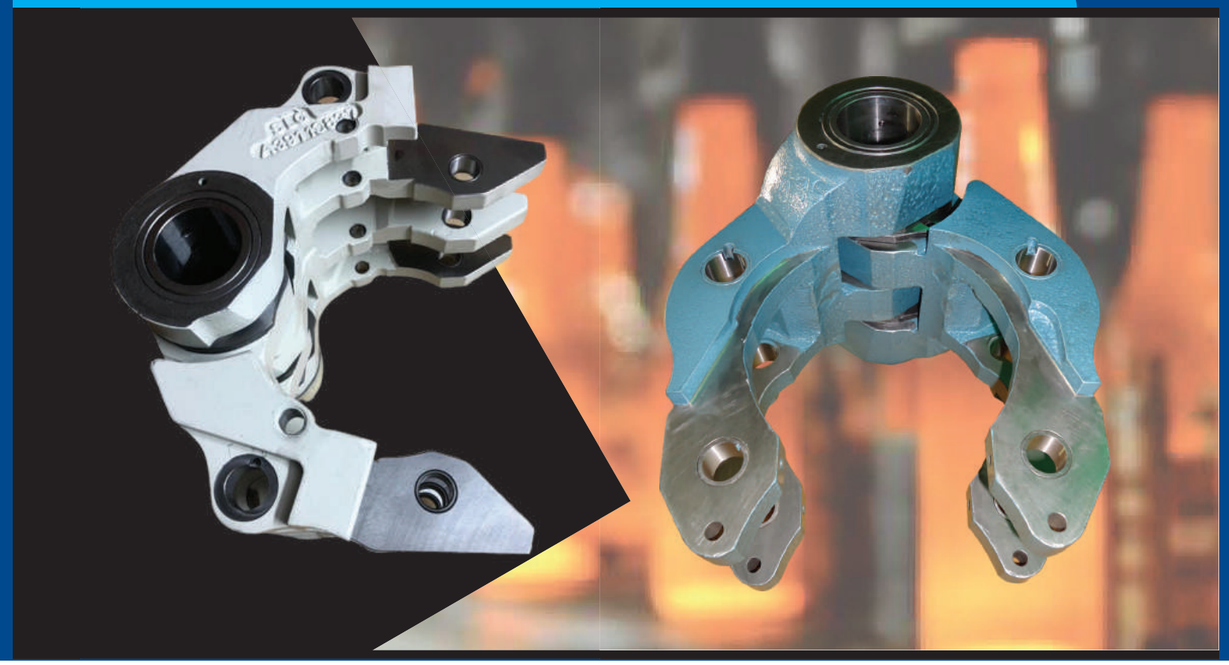

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