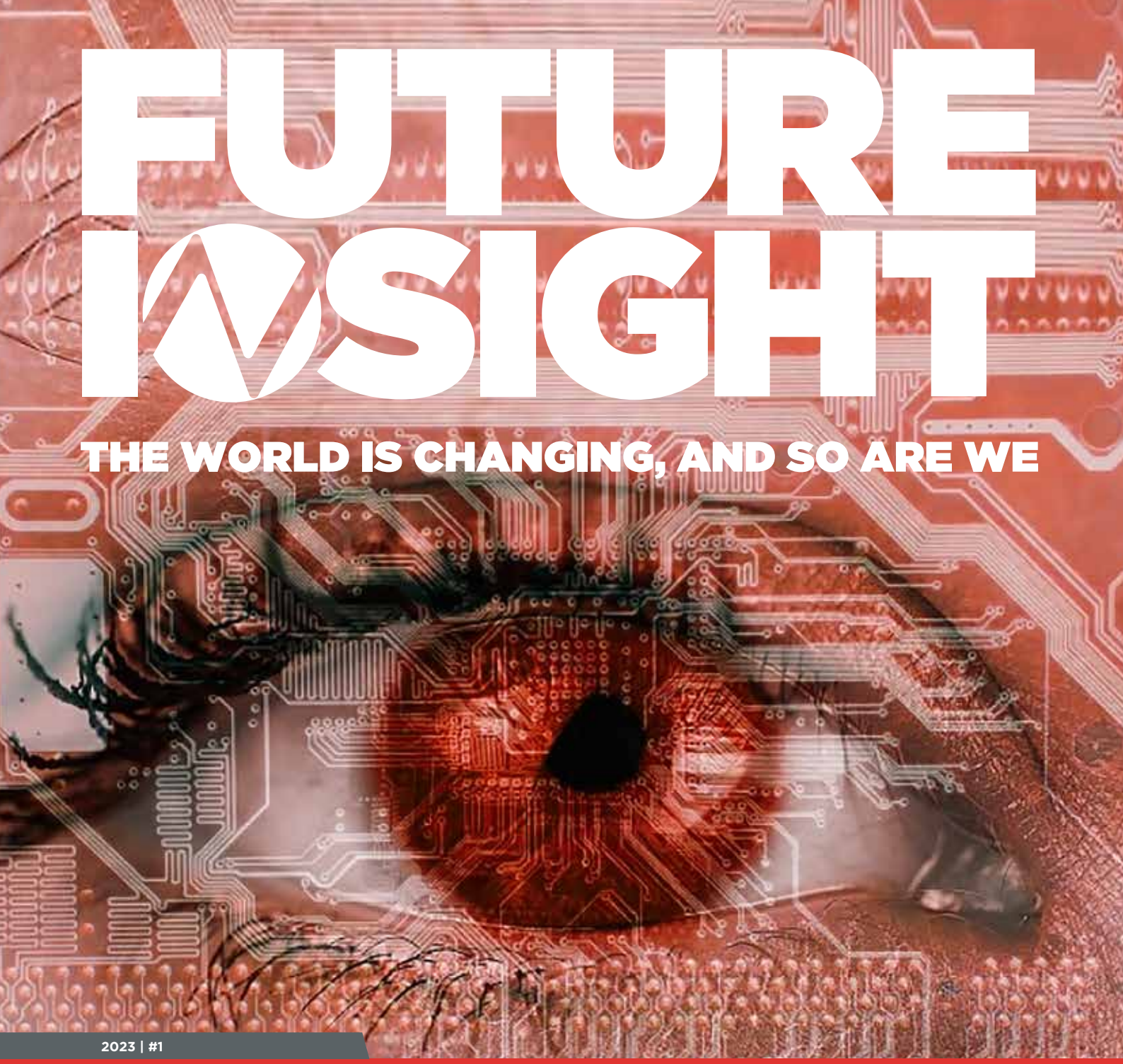
FUTURE INSIGHT

THE WORLD IS CHANGING, AND SO ARE WE



2023 | #1

30 years of BM Group

Hydroalp acquires Al.Fa. Impianti

Polytec and AFV Beltrame Group:
a “Made in Italy” success story

BM GROUP
IN A MINUTE

BM GROUP

30th BM GROUP ANNIVERSARY

CONTENTS

INNOVATION

Borgo Chiese (TN), July 2023

Future Insight is the BM Group's biannual magazine, which stems from the desire to engage our community in our **dynamic** and **ever-changing** world. New **partners**, cutting-edge **products**, and continuous **challenges** are reported in the bilingual publication, in Italian and English, coming out in July and December.

This first edition coincides with the **30th anniversary** of BM Group. What better occasion to inaugurate it, retracing the milestones of the group's evolution. In fact, it will talk as much about **history** as it will about **innovation**, from the testimony of the first BM Group employee to the most recent robotic solution developed for the steel sector.

Keeping our eyes fixed on the future, we wish you an enjoyable read.

SUSTAINABILITY

PEOPLE

TERRITORY

Business stories are the result of the values that drive them, such as integrity, honesty, transparency, enthusiasm, and respect. These are the values you have taught us, which inspire us every day and guide us towards the future. Thank you for making us people who are proud of who we are and what we do.

Thank you for everything Dad,

Mirko and Alex

30 YEARS OF BM GROUP

2023 marks the **30th anniversary** of BM Group, one of the most important Italian industrial groups that combines companies with different specialisations that share a common goal: to enable industry to undergo the technological transformation necessary to become a smart and sustainable factory.

The business opened its doors in **1993**. "I remember my peers immediately giving me raised eyebrows and wide eyes when I told them that I was thinking of starting a company at that time" said **Mirko Bottini**, founder of BM Group. "We have achieved this **milestone** through the **hard work** and **dedication** of our people. We have committed ourselves for 30 years to product innovation and manufacturing efficiency to provide our customers with the **highest quality** of products and services".

After spending the early years working around **automation** systems for small manufacturing **companies**, the group has structured itself through operating companies specialized in different fields, **integrating** mutual skills, **qualifying** more and more, and generating important **added value** as well as a **competitive advantage**.

BM Group companies are internationally recognised for the **automation** systems, **robotics** solutions, and **renewable energy plants** they produce. There are numerous collaborations with leading plant manufacturers to implement the best technologies in production processes.

"I cannot express in words how proud I am of what we have built," said **Andrea Tonini**, CSO and shareholder at BM Group. "Intercepting **startups,** to forge interesting and strategic partnerships with, gives us the opportunity to foster their growth and develop new solutions to serve our customers. We are deeply involved in digital transformation and energy transition, and we aim to be the **ideal partner** for large innovation projects."

Sustainability has always been a core value for BM Group. **Alex Bottini**, shareholder of BM Group and CEO of Nyox, said: "Major companies appreciate our ability to develop and provide the **best technological solution** to maximise plant **performance**. In the renewables sector, we are among the leading EPC contractors with more than 100 MW of renewable energy, and our goal is to reach 300 MW installed in the next year."

BM Group's **30th anniversary** is an important **milestone**: the celebrations will involve all those who have made it possible, retracing the milestones of this exciting journey that continues day after day, ready to face new challenges with enthusiasm and determination. The history of BM Group continues under the banner of the values that have always characterised it: **people**, **innovation**, **sustainability**, and **territory**.

30th BM GROUP ANNIVERSARY

ABOUT US

Foundation of **BM Elettronica**, that later became BM S.p.A., **system integrator** for industrial automation.

1993

Foundation of **Soft Technologies**, software house of the Group.

2007

Opening of a **branch in ILVA Taranto**, Europe's largest steel plant.

2006

Foundation of **Tecnerga**, consulting company operating in the field of **energy efficiency**.

Launch of the brand **BM Greenpower**, operating in the field of **renewable energy**.

2008

150th industrial **photovoltaic system** installed.

polytec

Launch of the brand **Polytec**, focused on applied **robotics** and **mechatronics** for the industrial sector.

2012

Opening of a **branch** in **Brescia**.

2014

HYDROALP

Foundation of **Hydroalp**, manufacturer of hydropower **turbines**, **hydroelectric power plants** and **water-to-wire** solutions, also specialized in revamping and maintenance.

2015

Hydroalp puts its **50th turbine** into operation after only 4 years since its foundation.

Merger of **Polytec** and **BM S.p.A.**

2018

Foundation of **Alpicapital**, **investment company** in the green sector.

Foundation of **Polytec Intralogistics**, developer of guidance systems, AMR, and intralogistics.

2020

30th BM Group **anniversary**

Hydroalp acquires **Al.Fa. Impianti Srl.**, specialized in the production of general-purpose **skids** and **welded** components.

Foundation of **Nyox**, EPC contractor for industrial **photovoltaic** plants.

2023

Foundation of **Polytec South America**, distributor of Polytec's products in South America.

Foundation of **Polytec Korea**, distributor of Polytec's products in South Korea.

Foundation of **Polytec Mexico**, distributor of Polytec's products in Mexico.

2022

Opening of a **branch** in **Rovereto**, within the mechatronics hub "**Polo Meccatronica**" that connects companies, students and researchers.

2019

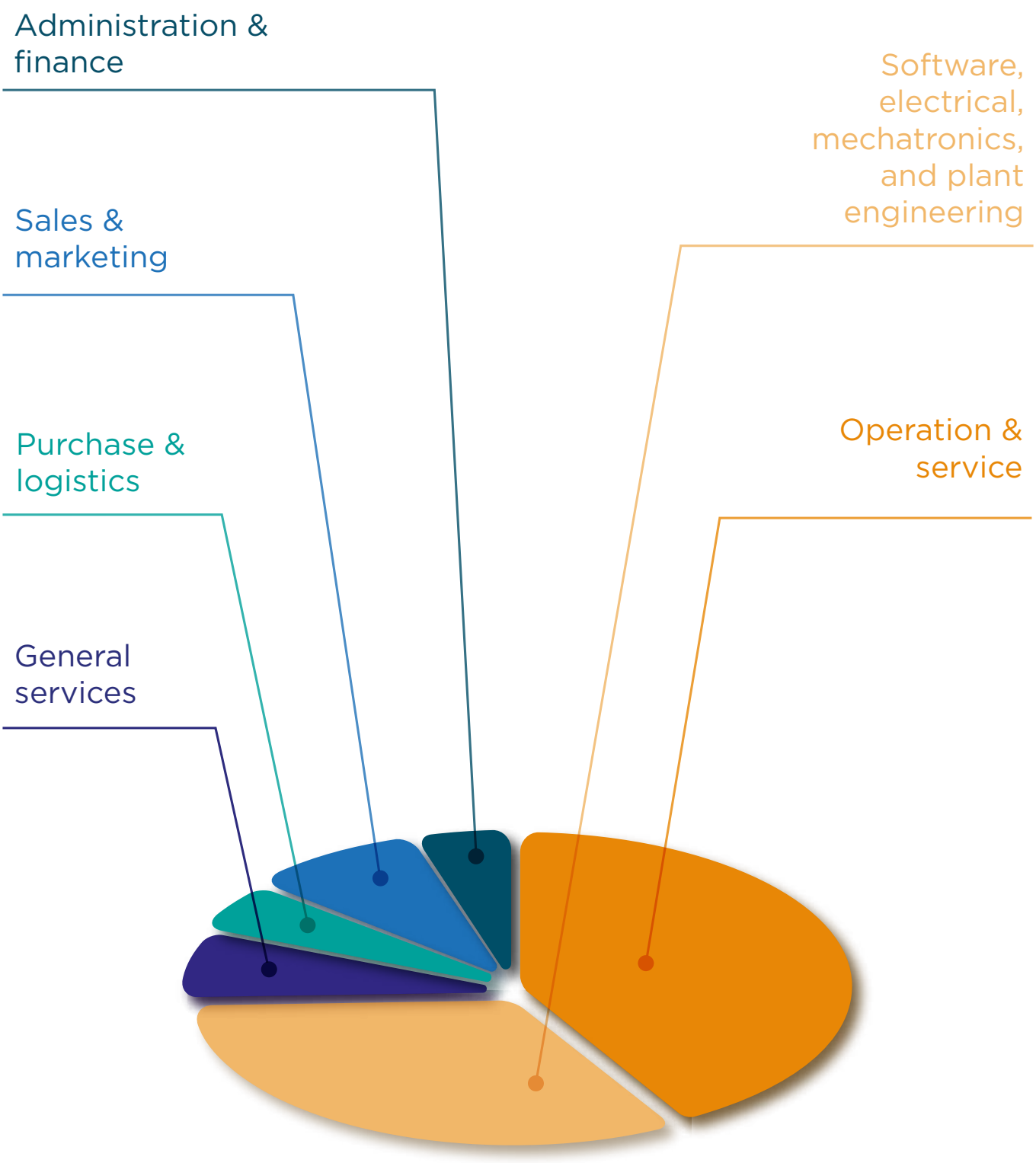
Foundation of **Polytec USA Corp**, distributor of Polytec products for automation and robotics in the **United States**.

150th robotic cell installed by **Polytec**.

2017

ABOUT US

+320 EMPLOYEES



+115 MILLION | PRODUCTION VALUE (2022)

ENERGY TRANSITION

- Photovoltaic
- Hydropower
- Construction
- Hydrogen

DIGITAL TRANSFORMATION

- Steel
- Other industries
- Aluminium
- Ceramic

ABOUT US

polytec MECHATRONICS

- **INDUSTRIAL AUTOMATION**
- **ROBOTICS**
- **MECHATRONICS**
- **SOFTWARE DEVELOPMENT**
- **COMPUTER VISION**

CERTIFICATIONS:

UNI EN ISO 14001:2015
UNI EN ISO 9001:2015
UNI CEI EN ISO 50001:2018
UNI EN ISO 45001:2018 CERTIFICATE OF COMPLIANCE UL 508A/CSA 22.2
ROCKWELL O&M GOLD PARTNER
SIEMENS SOLUTION PARTNER FOR DRIVES & MOTION
SIEMENS SOLUTION PARTNER FOR FACTORY AUTOMATION
ATTESTAZIONE SOA OG6/II - OG9/VI - OG10/V - OS30/IV-BIS

RESEARCH & DEVELOPMENT
+ 10 patents

NYOX
EDISON NEXT | polytec

- **GROUND, ROOF, AND CANOPY PHOTOVOLTAIC PLANTS**

AS: **EPC CONTRACTOR**
PPA OFF-ON SITE

polytec ENERGY

Construction of a green hydrogen production plant in disused industrial areas

ENERGY TRANSITION

DIGITAL TRANSFORMATION

polytec INTRALOGISTICS

- AUTONOMOUS MOBILE ROBOTS
- NAVIGATION AND CONTROL SYSTEMS
- INTRALOGISTICS SOLUTIONS

Tecnerga®

- CONSULTANCY FOR INSUSTRIAL ENERGY EFFICIENCY

CERTIFICATIONS:

ESCo certificata UNI CEI 11352
EGE certificati UNI CEI 11339
ESCo – Energy Service Company certificata UNI CEI 11352
EGE – Esperti in Gestione Energia certificati UNI CEI 11339
SGQ – Sistema Gestione Qualità certificata ISO 9001
CQOP- SOA – Costruttori Qualificati Opere Pubbliche – certificata OG9 III-BIS
Impianti per la produzione di energia elettrica

AlpiCapital ENERGY INTO INVESTMENTS

- INVESTMENT COMPANY IN THE RENEWABLES SECTOR

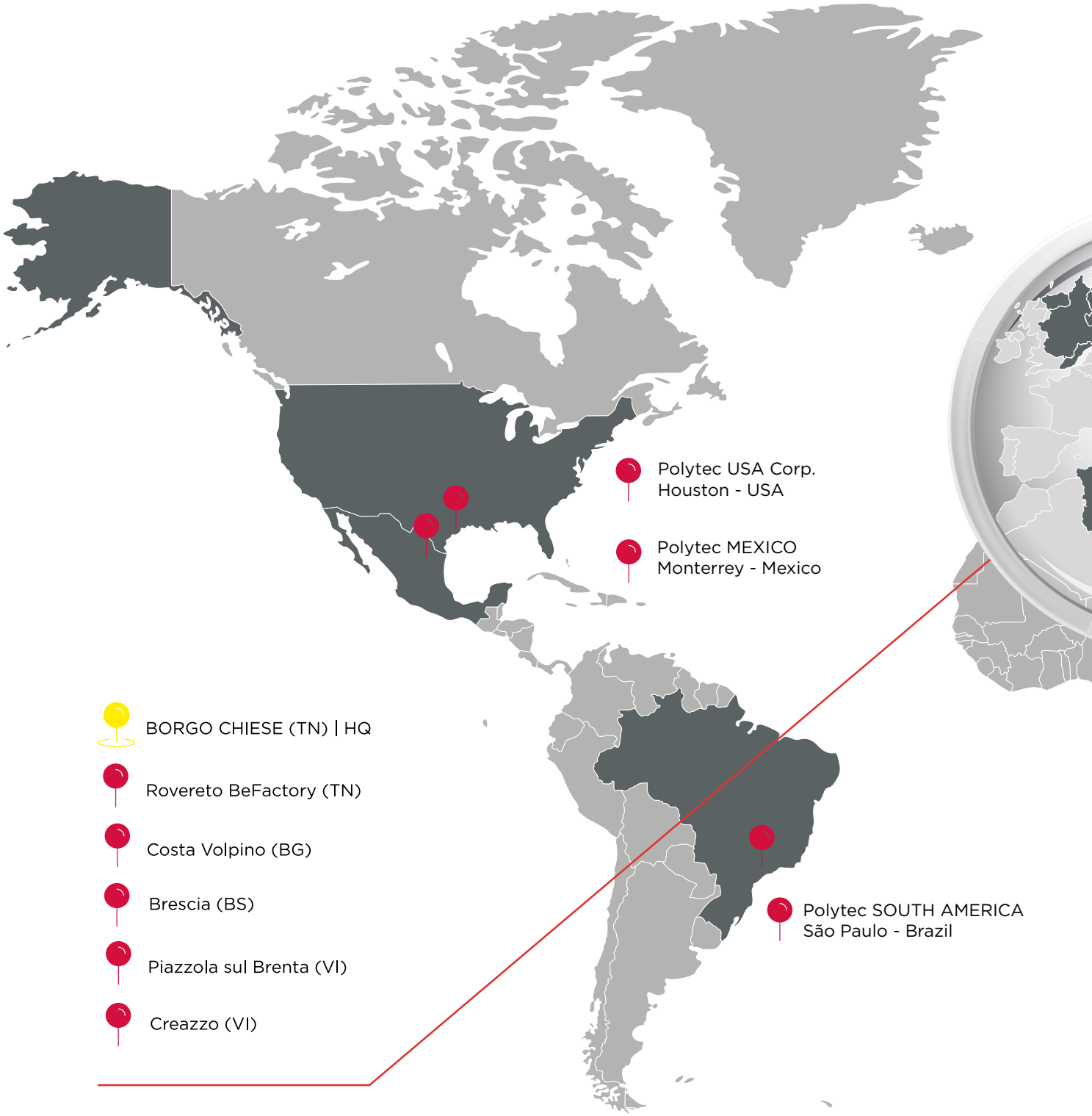
HYDROALP

- HYDROPOWER
- GREEN HYDROGEN
- CONSTRUCTION
- PHOTOVOLTAIC (except for Italy)

CERTIFICATIONS:

UNI EN ISO 9001:2015
UNI EN ISO 14001:2015
UNI ISO 45001:2018
DNV APPROVAL OF MANUFACTURER CERTIFICATE
Manufacture Of Welded Pressure Equipment, Class I & Ii
Welding Of Piping Systems

ABOUT US


Polytec USA Corp.
Houston - USA
Polytec MEXICO
Monterrey - Mexico
BORGO CHIESE (TN) | HQ
Rovereto BeFactory (TN)
Costa Volpino (BG)
Brescia (BS)
Piazzola sul Brenta (VI)
Creazzo (VI)
Polytec SOUTH AMERICA
São Paulo - Brazil


Polytec KOREA
Seoul - Korea

INNOVATION

DOLOMITI ROBOTICS BECOMES POLYTEC INTRALOGISTICS

In 2021 Dolomiti Robotics, startup from the Province of Trento born in 2019, joined BM Group. The company is specialized in collaborative **mobile robotics** and offers to the market its platform of innovative **technology** that makes mobile robots autonomous even when there are unexpected obstacles, such as moving objects or human beings, according to the best **security** standards. The algorithms of these systems are designed to **interact** with humans and predict their behaviour.

BM Group shareholders immediately recognized the **competence** and **passion** for technology of the three cofounders, Fabiano Zenatti, Stefano Divan and Paolo Bevilacqua, and they decided to invest in this young reality.

During the last period, the world of industry became more and more interested in technological systems to make the management of production processes more efficient.

Polytec Intralogistics was founded with the aim of offering advanced technological solutions, namely AMR and AGV devices for intralogistics. Together with Polytec, the ambition is to become a brand of **excellence** worldwide, characterised by **quality**, **commitment**, and **innovation**.

Polytec has been providing **integrated technological solutions** all over the world for over ten years. Polytec's offer is now expanded thanks to the entry of Polytec Intralogistics and includes mobile robotics and advanced solutions for efficient intralogistics management.

With the new company name, the brand becomes internationally recognised and **future-oriented** and represents a **young**, **innovative**, and **solid** company.

Polytec Intralogistics headquarters at Be Factory – Rovereto (Trentino, Italy)

FORMEST: A DESIGN PARTNER

The collaboration between **Formest Srl** and **Polytec Intralogistics** began last year: Polytec Intralogistics, when designing the new **AMR Voyager robot**, involved Formest to study and produce the **design of the protective casing**. A machine with cutting-edge technology and innovative design.

Formest works to add value to customers' brands by designing and producing **tailor-made suits** for their technologies. They are "**stylists and tailors**" of sheet metal, working it as if it were fabric to create works of industrial design. The works they create are intended to promote wellbeing, bringing aesthetic sense and beauty into production sites. When designing a new "suit", they consider the people who inhabit the workplaces and the ways they interact with the machines.

Quoting Rita Salmaso, Head of Human Resources and Communication at Formest: "Designing the casing for Voyager gave us the chance to approach a **new technological field**: it is no longer a human governing a stationary machine, but a machine that moves and interacts in a **dynamic environment**. This connotation inspired us to study a design that would make the robot **friendly**: the zoomorphic imprint of the expression served to make it a friendly presence for the operators and **improve human-machine interaction**. The first prototype was delivered in October 2022. The result was **stunning** and earned a nomination in the prestigious **ADI Design Index** design competition, for the category 'Design for Work'. Fingers crossed that it will occupy a place of honour among the award-winners".

The strategic collaboration between **Polytec Intralogistcs** *and* **Formest** *told by the testimonials of the two companies.*

POLYTEC INTRALOGISTICS & FORMEST

Voyager N50 by Polytec Intralogistics

HYDROALP ACQUIRES AL.FA. IMPIANTI

Founded in 2015 as a spin-off of the Greenpower division of BM Group, in just a few years Hydroalp has gained a prominent position in the market for the construction of **hydroelectric turbines**, **water-to-wire hydropower plants**, **revamping**, and **maintenance** services. Hydroalp has a high-level professionalism, a wide range of reliable and innovative products, and an effective after-sales service.

Recently, Hydroalp acquired 100% of **Al.Fa. Impianti S.r.l.**, a company specialized in the production of **general-purpose skids** and **welded components** for piping and pressure vessels. Through this new operating unit, Hydroalp carries out the design and manufacture of plant components related to the management of fluids, gases, biofuels, and innovative fuels (biomethane, methanol, ammonia, green hydrogen) aimed at the **power generation**, **transport**, and **marine** sectors.

By combining these new competencies with its experience as an **EPC** (Engineering, Procurement and Construction) **contractor** for the **energy transition** of industry, Hydroalp positions itself in the market also as an EPC for the construction of **turnkey plants** for **green hydrogen** production.

The reliability that Hydroalp can guarantee today will be one of the strategic elements in qualifying as a partner for the realisation of innovative plants.

Skid system for the naval sector by Hydroalp

Carbon and stainless-steel welding by Hydroalp

SPONSOR

POLYTEC AND ATALANTA BERGAMASCA CALCIO

Polytec renews **Fan Sponsor** contract with **Atalanta Bergamasca Calcio** for the season 2023/2024.
We are delighted to have renewed the sponsorship, thanks to which our customers have enjoyed unique experiences on the sidelines. The decision to enter the football world confirms Polytec's desire to **expand its brand** and to actively contribute to the **promotion of Italy** and its excellences.
The sponsorship includes the presence of the Polytec logo on the skyline LED and on the official Atalanta website, as well as an exclusive "hospitality and experience" package.
Polytec and Atalanta Bergamasca Calcio: two realities linked by **passion**, **determination**, **commitment**, and a strong **desire to win**, each in its own field.

Fan Sponsor
2023/24

POLYTEC WILL PRODUCE GREEN HYDROGEN IN VALLE DEL CHIESE

Borgo Chiese (TN): Polytec Energy, a BM Group company, has been awarded the provincial tender of the Autonomous Province of Trento for the construction of a green hydrogen production plant in disused industrial areas as part of Mission 2 "Green Revolution and Ecological Transition" of the National Recovery and Resilience Plan (PNRR).

Of the 14 million euro that the Ministry of the Environment and Energy Security has allocated to the Autonomous Province of Trento for the Mission 2 tender "Green Revolution and Ecological Transition", **7.5 million** will be destined to support the implementation of this large "green project" in **Valle del Chiese**.

Polytec Energy will build **5 MW of photovoltaics** to power the **production**, **compression**, and **storage** of green hydrogen, a key resource for a more **sustainable** energy system that will contribute to achieving the decarbonization targets set for 2030 and 2050, in line with provincial planning as envisaged by the PNRR.

Green hydrogen plant

The plant will be built on a brownfield site in the municipality of Storo, in the province of Trento. With a total hydrogen production of 143.3 tH2/year, CH4 consumption will be reduced by 500,000 Scm and CO2 emissions by 992.2 t/year. The hydrogen will be used on site and will serve the thermal treatment lines of a company adjacent to the plant.

The reconversion and redevelopment of the disused industrial area in Storo (TN), where new plants and technologies for the production and storage of green hydrogen will be put into operation, is one of the important **positive effects** on the territory of this project signed by Polytec Energy. Equally significant will be the reduction of carbon dioxide emissions and pollutants derived from fossil fuels and employment growth, with a view to **sustainable local development**.

Mirko Bottini, shareholder of BM Group, comments with satisfaction on this new great achievement: "We looked at this tender as an unmissable opportunity for our territory, and, thanks to the skills and commitment of our team, we won. The birth of this new reality will encourage the **exchange of ideas** and **technological research** and will also help create interesting opportunities for **professional growth** for **young people**. In this way, Valle del Chiese establishes itself as a pole of excellence for sustainable innovation in Trentino. This direct experience will enable us to gain the necessary **know-how** to **transfer** our technological expertise to the market and to propose ourselves as a **partner** for the realisation of turnkey plants for green hydrogen production."

MOSE AND AL-BAYT: POLYTEC'S AUTOMATION FOR INFRASTRUCTURE

Infrastructures and buildings are often compared to industrial production processes as they present similar critical issues; in fact, they require **efficient energy management**, precise **cost** and **performance monitoring**, **safety**, and **operational continuity**. When the external environment becomes harsh and problematic, these large structures must ensure their **availability**. For this reason, integrated automation with specific hardware and software components is increasingly required by infrastructural systems, from energy to water treatment plants, transport and public safety infrastructures, to cultural and sports facilities.

In recent years, Polytec has followed numerous automation projects in this field. Technology for the control, automation, and software that manages the huge **opening roof of the Al-Bayt stadium** in Doha is signed by Polytec. The roof of the 60.000-seat stadium has been developed in a similar way to Wimbledon's centre court stadium, which allows the roof to be opened or closed during events in order to maintain ideal climatic conditions inside the sports building. Polytec has been chosen as a **technological partner** for its hardware and software solutions based on the Siemens TIA platform.

Furthermore, Polytec is supplying the new automation system for the **Malamocco inlet in Venice**, in the navigation lock "Porta Lato Mare/Porta Lato Laguna", the deepest through which ships transit towards the commercial port. As part of the new General Plan of Interventions for Safeguard Activities, "**MOSE**" combines the defence of Venice and the lagoon ecosystem from high tides and the subsequent environmental issues that affect the territory. It is a **unique engineering work**, a futuristic infrastructure recognised as a successful model of resilient territory, protecting Venice's global heritage. Moreover, it stands as a relevant reference for the implementation of adaptive and defensive measures, not only for the mobile barriers but also for the entire plan of interventions involving the entire lagoon. It includes the restoration and defence of lagoon habitats and the securing of the most fragile urban areas at greatest risk of flooding and of polluted sites.

HMI for the management of Al-Bayt stadium's roof

Al-Bayt stadium (Qatar)

HMI for the management of MOSE – Porta Lato Mare

Malamocco inlet (Venice, Italy)

INNOVATION

OUR LATEST INNOVATIONS: POLYTEST

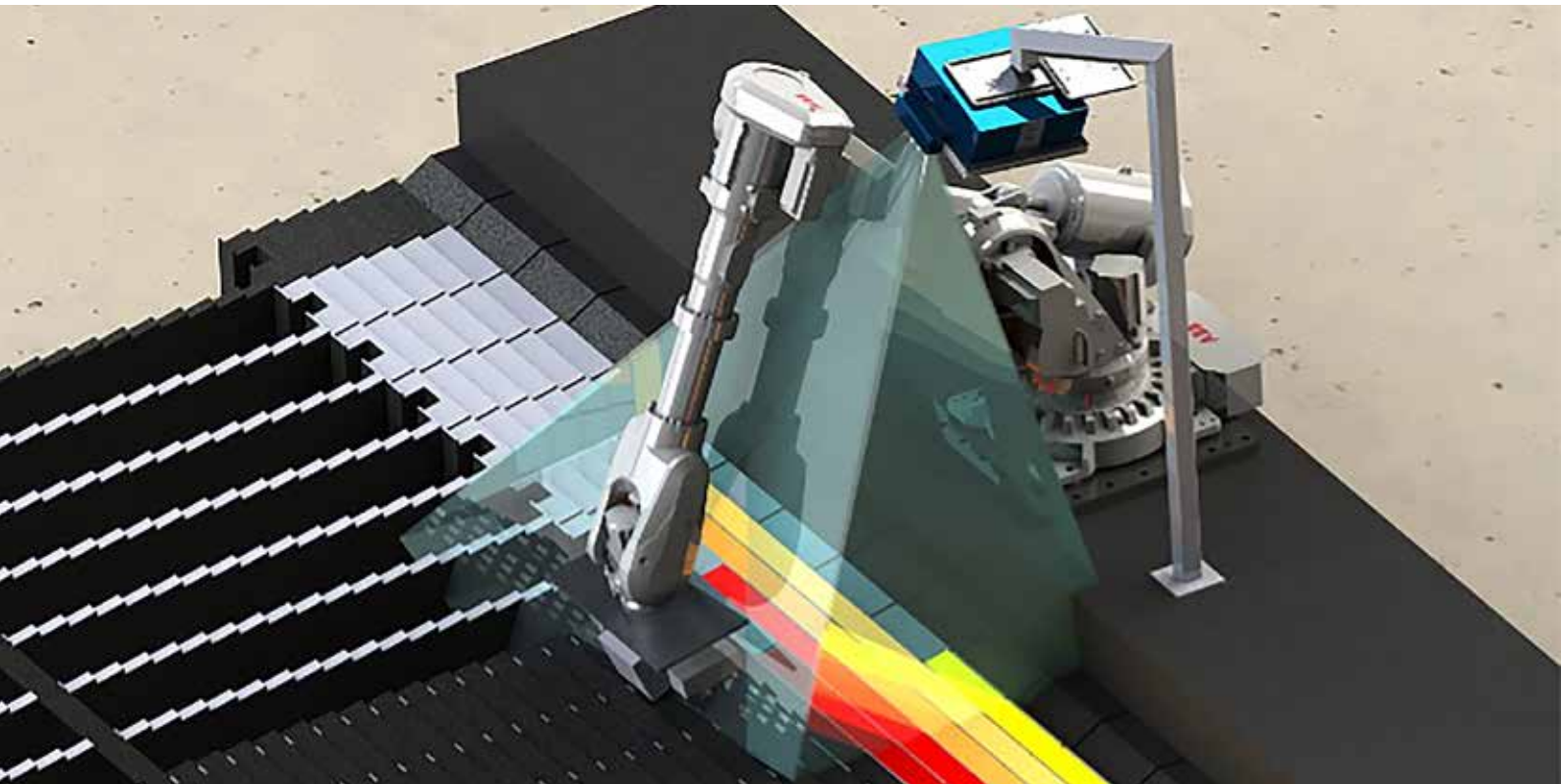
Steel production requires continuous **monitoring of the quality** of the material throughout the whole production process. Polytec has recently developed a system for an operation that, as of today, is still carried out manually with great exposure to risk for the operator. The activity consists of **cutting and removing a material sample from rods or long products on the cooling bed**.

As material transits on the cooling bed straight after the rolling process, samples of the product have to be taken for qualitative and dimensional checks. The known technique requires a pause in the process and a human operator entering the dangerous area to cut and remove the steel sample from the desired product. This operation has several drawbacks, both from a safety and production efficiency point of view. Another problem is connected to the quality of the sample itself, as hard reachability often translates into low quality.

In order to eliminate the above drawbacks, Polytec developed a **fully automated system** for the complete cutting of steel samples from bars positioned on a cooling bed. The main component of the system is a 6-axis industrial robotic arm with a custom-designed tool performing the action of cutting and moving the sample. Another component of the device is the **artificial vision system**, which determines the best position to collect the sample and communicates it to the robot that executes the movement.

This latest innovation by Polytec is proof that robotic systems can introduce considerable **advantages** in areas where innovation has not been considered until now. The integration of the latest technologies in robotics, vision systems, and artificial intelligence helps in designing new systems, further enhancing operator **safety** and **productivity** improvement in the harshest areas of the steel production process.

3D render of PolyCAST by Polytec



PolyTEST: Cooling bed sampling robot

TECHNICAL SPECIFICATIONS

CYCLE TIME ROLLING PAUSE	20 SEC
ESTIMATED PRODUCTION TIME SAVING	300 HOURS / YEAR
CUSTOMIZED CUTTING TECHNOLOGY BASED ON THE TYPE OF MATERIAL	• CIRCULAR OR BAND SAW • SHEAR • OXYGEN TORCH • LASER
ROBOTIC ARM SYSTEM FOR REACHING THE PICKUP POINT	INCLUDED
3D SYSTEM FOR IDENTIFYING MATERIAL ARRIVAL POSITION	INCLUDED
USER-FRIENDLY HMI INTERFACE	INCLUDED
VPN REMOTE ACCESS AND MAINTENANCE	INCLUDED
SAMPLE DIMENSIONAL INSPECTION	OPTIONAL

HIGHLIGHTS

SAFETY
HIGH RELIABILITY
QUALITY IMPROVEMENT
ADAPTABILITY
DESIGNED FOR ROLLING MILL HARSH ENVIRONMENT
TIME SAVER
PRODUCTIVITY INCREASE

OUR BEST SELLER: POLYCAST

The PolyCAST solution is a revolutionary **multi-tool system** that automates the casting process between the ladle and the tundish in the **Continuous Casting Machine** (CCM). Custom-built to meet the exact requirements of the customer, PolyCAST can be controlled by one or two 6-axis robots, depending on the number of tasks and the cycle time needed.

This system consists of a **robotic cell** that includes a series of tools to open the slide gate with the oxygen lance, manipulate the ladle shroud, take samples and temperature measurements in the tundish, distribute powder and artificial slag on the tundish, and more. The main goal is to completely **enclose the area** and have no operators on the casting floor, automating every operation typically performed manually.

The system combines different **technologies**, such as **robots**, **manipulators**, and **vision systems**. Customers take part in the Factory Acceptancy Test of the system at Polytec's headquarters in Borgo Chiese (TN) to familiarise themselves with the machinery and check its compliance before installation in the plant. In this way, Polytec ensures that the PolyCAST solution is tailored to the exact needs of the customer and provides the highest level of **efficiency** and **reliability**.

During the last METEC 2023 fair, held in Düsseldorf from June 12 to 16, the basic version of the PolyCAST robot was **exhibited** and put into operation on our booth, meeting with great success among the more than 60,000 visitors from all over the world.

PolyCAST installed at AFV Beltrame Group Vicenza (Italy)

POLYCAST MULTITOOL ROBOT FOR CASTER OPERATIONS

PolyCAST: Multi-tool robotic solution for continuous casting machines

TECHNICAL SPECIFICATIONS

LADLE NOZZLE CALCULATION USING 3D MACHINE VISION SYSTEM	INCLUDED
SHROUD HANDLING	INCLUDED
ARGON FLOW CONNECTION TO SHROUD	INCLUDED
OXYGEN LANCING	INCLUDED
VPN REMOTE ACCESS AND MAINTENANCE	INCLUDED
USER-FRIENDLY HMI INTERFACE	INCLUDED
AXIS TEMPERATURE MONITORING AND AIR COOLING SYSTEM	INCLUDED
PROTECTIVE HARD COVER FOR THE ROBOT	INCLUDED
SAMPLING & MEASUREMENT	OPTIONAL
COVERING POWDER ADDITION	OPTIONAL
TEMPERATURE & SAMPLING LANCE	OPTIONAL
LADLE SHROUD CLEANING (OXYGEN SHOWER)	OPTIONAL
HYDROGEN MEASUREMENT	OPTIONAL
SHROUD GASKET APPLICATION	OPTIONAL

HIGHLIGHTS

- OPTIMIZATION
- SAFETY
- HIGH RELIABILITY
- CUSTOMISED SOLUTION ACCORDING TO CCM LAYOUT
- DESIGNED FOR MELTSHOP HARSH ENVIRONMENT
- AUTOMATIC TOOL CHANGE

AN EVENTFUL FIRST SEMESTER

2023 began with numerous **trade fairs** related to the renewable and circular economy sectors. From Malaysia to Norway, via Italy, BM Group brands exhibited their solutions for the **energy transition**: turnkey industrial photovoltaic systems, water-to-wire, and automation systems for biogas plants.

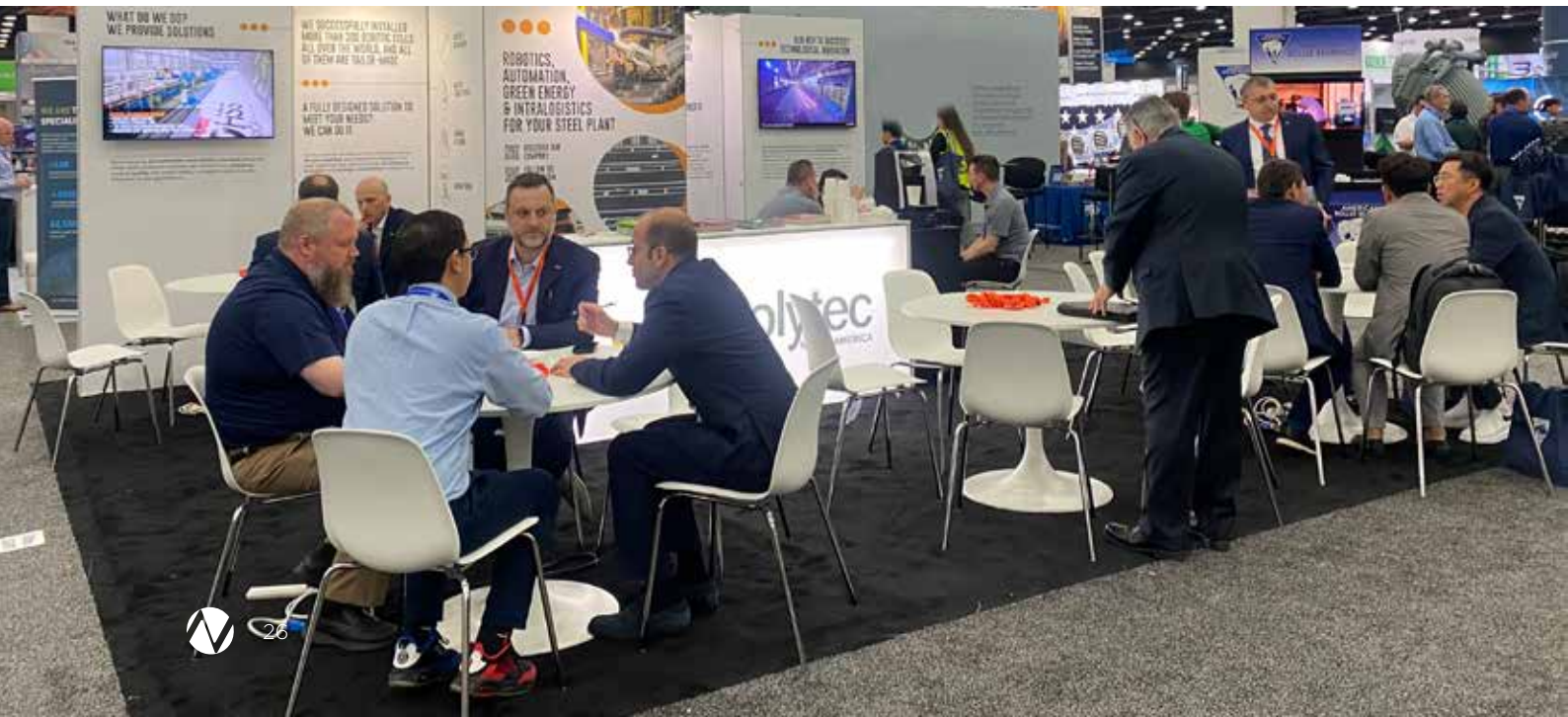
Moreover, thanks to a powerful Research & Development team, which has always been a distinctive feature of Polytec, the fleet of mobile robots with 100% Polytec Intralogistics guidance and engineering system was presented at the most important **B2B events** related to logistics and efficient warehouse management.

Thanks to Polytec's continuous growth in the steel industry, participation in the most important trade **fairs in the sector** on all continents was confirmed. At **METEC 2023**, held in Düsseldorf in June, more than 120 square metres of exhibition space welcomed over 2500 visitors interested in Polytec robotics and automation. The multifunctional continuous casting robot PolyCAST was the real star of the event, attracting the interest of numerous buyers.

Thanks to the strong partnerships with **representative agencies** in the various European and non-European countries, **technical seminars** and **presentations** are being organised to meet the important demand, especially from the **APAC** area, with the aim of testing the potential of countries such as South Korea, where Polytec is currently present with a company and an office.

In total, in 2023, Polytec will be involved in no less than **20 trade fairs and thematic events**, including congresses, conferences, and international forums, in addition to in-house events. In fact, it will be the **BM Group's 30th anniversary** celebration event that will close this incredible 2023.

Polytec at AISTech Exhibition 2023



2023

DATE	LOCATION	COUNTRY	EVENT
22-24 February	Turin	Italy	**A&T Automation and Testing**
14-16 March	Kuala Lumpur	Malesia	**Asia 2023**
22-24 March	Rimini	Italy	**Key Energy**
27-29 March	Bergen	Norway	**Smakraftforeninga**
18-20 April	Bergamo	Italy	**Waste Management Europe**
8-11 May	Detroit	USA	**AISTech**
9-11 May	Milan	Italy	**Made in Steel & Lamiera**
11-12 May	Quebec City	Canada	**Future Aluminium Forum**
22-24 May	Manila	Philippines	**SEAISI Mega Event Philippines**
12-16 June	Düsseldorf	Germany	**METEC-GIFA & ESTAD**
21-22 July	Valence	France	**Hydro Electricitè**
1-3 August	São Paolo	Brazil	**ABM Week**
13-14 September	Memphis	USA	**AIST Safety & Health, Galvanizing, and Digitalization Applications Technology**
20-21 September	Vienna	Austria	**Future Steel Forum**
9-10 October	Grenoble	France	**Business Hydro 2023**
11-13 October	Cincinnati	USA	**Clean Currents**
11-13 October	Bologna	Italy	**HESE - Hydrogen Energy Summit & Expo**
12-14 October	Lucca	Italy	**MIAC**
16-18 October	Edinburgh	United Kingdom	**Hydro 2023**
17-19 October	Leoben	Austria	**AIST European Steel Forum**
25-27 October	Bilbao	Spain	**Steel Tech**
6-9 November	Boston	USA	**Rockwell Automation Fair**

2024

DATE	LOCATION	COUNTRY	EVENT
15-19 April	Düsseldorf	Germany	**Wire and Tube**
6-9 May	Columbus	USA	**AISTech**
8-10 October	Düsseldorf	Germany	**Aluminium**
24-27 September	Rimini	Italy	**Tecna**

Jindal Steel delegation at Polytec booth at METEC 2023

HUMAN RESOURCES: OUR STRENGTH

People are the beating heart of BM Group companies. People who are **competent**, **motivated**, and **determined** to develop their skills and potential through targeted and specific **training**. People who are tenacious, reliable, and able to transform good ideas into effective solutions. These are also the essential qualities for joining the BM Group team.

For each new figure included, an **induction programme** is defined in the hiring phase in accordance with experience and skills. We organise and promote **training courses** with a view to continuous improvement. The initiatives in collaboration with **research centres** and **universities** are numerous, such as internships, thesis projects and initiatives, and are aimed at getting to know the local resources.

What we offer

- Direct entry into a solid and rapidly growing international group with 30 years of history in innovation, technology, and energy.
- Opportunity to grow and improve the job position, aspiring over the years to acquire responsibilities within the company.
- Opportunity to take part in innovative research and development activities.
- Job posting also on foreign branches (USA, Mexico, Brazil, South Korea).
- Technical, linguistic, and managerial training.
- Opportunity to travel and meet new people from different linguistic and cultural backgrounds.
- Shared apartment/hotel for non-residents during any training/work periods at the Borgo Chiese headquarters.

Job opportunities

Check out the job opportunities in the different locations worldwide:

- Computer Vision Software Engineer
- Electrical Project Engineer
- Field Service Engineer
- Full Stack Developer
- Junior administration officer
- PLC Software Engineer
- Project Engineer Automation
- Project Manager
- Robotics Software Engineer
- Sales Manager

FIND OUT MORE:
polytec.bmgroup.com/en/career

WE BELIEVE IN FUTURE GENERATIONS

BM Group has always invested in **young people** by supporting **education** so that they could look to the future with **confidence** and **enthusiasm**.

From primary education to university, there are numerous **hospitality** and **workshop** projects aimed at bringing together schools and BM Group. Participating in **career days** and activating **school-work projects**, **internships**, and **thesis** are unique chances to get in touch with young talents and start engaging them in our corporate life.

Each step of the educational path is crucial for the future of a student, and, for this reason, our doors are open to young **pupils** from primary schools too.

Believing in young generations means working in favour of **sustainability** in all its forms – environmental, economic, and social – and having a vision of the **future** in which new generations will be protagonists.

Robotics workshops at Polytec

POLYTEC AND AFV BELTRAME GROUP: A “MADE IN ITALY” SUCCESS STORY

Technological transformation in the industry is driven by **digitalisation**, mainly aiming at increasing **safety**, **health**, production **efficiency**, and **sustainability** to reduce the industrial environmental impact. That is particularly true for “energy-consuming” industries like the steel sector. The digital transformation of steel production mostly concerns the use of certain technologies in the steel production processes, where the ongoing technological developments are focused on two fields: advanced tools for the optimisation of the whole production chain and specific technologies for low-carbon production.

The **strategic collaboration** between Polytec and AFV Beltrame Group and the sharing of strong values, such as people, innovation, sustainability, and territory, gave rise to interesting initiatives. Among these, a two-day **press trip** was organised in March 2023, in which important national and international journalists participated in technical workshops, stimulating debates, and guided tours around Polytec and AFV Beltrame Group plants.

The strategic collaboration between Polytec and AFV Beltrame Group moves forward with a view to **continuous product improvement** and the enthusiasm to share this unique synergy between customer and supplier.

Double billet labelling robot installed at AFV Beltrame Group Vicenza (Italy)

Polytec S.p.A.

Polytec leads the industry towards digital transformation by developing technologically advanced automation systems and robotics solutions.

Polytec is a world leader in robotics applied to the steel industry.

www.polytec.bmgroup.com

AFV Beltrame Group

Active in the iron and steel sector since 1896, AFV Beltrame Group is synonymous with excellence and innovation in the production of merchant bars and special profiles for multiple applications: construction, shipyards, and excavators.

www.gruppobeltrame.com

The winning combination of a forward-looking Italian **steel manufacturer**, AFV Beltrame Group, and a **system integrator** focused on technological innovation, Polytec, told by the testimonials of the two companies.

POLYTEC & AFV BELTRAME GROUP

Journalists in the EAF pulpit

INNOVATION

POLYTEC
FOR BAYKER
IPERCERAMICA

POLYTEC FOR BOX PICKING IN BAYKER IPERCERAMICA

In the ceramic sector, the handling of tile boxes requires procedures and attention that guarantee **operator safety** and production efficiency at the same time. The **intralogistics** solution developed by Polytec combines **robotics**, **automation**, and **artificial intelligence** for efficient picking management, according to specific customer requirements.

The handling and transportation of packages containing boxes of tiles of different designs, decorations, and thicknesses, known as "multi-reference pallets", are tiring and repetitive tasks. The improvement in the **quality** of operators' work, thanks to Polytec's robotic solutions, is remarkable: the operator becomes a **supervisor**, minimising the lifting and carrying of heavy loads..

Bayker Iperceramica, thanks to Polytec's expertise, has fully automated its warehouse, implementing box picking and mobile robotic solutions that include:

- **PolyMOVE_BOX_120**: robotized picking island equipped with an anthropomorphic robot with grippers capable of handling boxes of different sizes, from standard to large formats;
- **Palletizing and depalletizing robotic cell**: packaging optimised according to box weight and size and integrated deep learning system for continuous performance improvement;
- **AMR "Voyager"**: autonomous mobile robots to automate and optimise the transport of tile boxes on trays, for fully automated handling of loads;
- Integrated interface with the customer's computer system of the systems involved, including PLC, robot, machine vision, and AMRs.

According to this configuration, the robot depalletizes the packages the AMR transports them to the warehouse with an optimal route already predetermined at software level. Through a specific application, the AMR receives the instructions to pick the goods from the warehouse, which are then taken to the second work island, where the robot "reassembles" the multi-reference pallet.

One of the main advantages of this system is the net **time saving** on warehouse organisation and order preparation. Furthermore, the **optimisation** of the final composition of the load on the pallet is ensured by software guided by Artificial Intelligence algorithms.

The strength of an automated warehouse is its **flexibility** in the event of format, package, and product changes, as a software modification is sufficient to completely reorganise the warehouse.

Fully automated warehouse at Bayker Iperceramica by Polytec

Picking robot for tile box by Polytec

OUR HEADQUARTERS: INNOVATIVE DESIGN

Believing in the area where we grew up is one of the **values** we are proud of, and most of our employees come from nearby hamlets. For these reasons, we chose to **stay** in Borgo Chiese and converted a brown-field in our headquarters. In the **design** phase, we decided to express our corporate identity also through the **colour**, **shapes**, and **materials** of the building to communicate **passion**, **innovation**, **determination**, and the **future**.

PROJECT PARTNER

BF S.r.l.
Via Roma, 3
38083 Borgo Chiese (TN) Italy
Tel. +39 0465 670062

READ THE MAGAZINE YOUBUILD
www.youtradeweb.com/2023/03/youbuild-marzo-2023/

BF

Carta d'identità *IN SUPERFICIE*

Per il suo headquarter in Valle del Chiese (Trento) BM Group ha scelto una facciata ventilata composta da pannelli in HPL tinta pietra che riflettesse la filosofia dell'azienda

di Anna Molentini

Core business di BF, azienda di Borgo Chiese (Trento), la facciata ventilata è una soluzione per il rivestimento degli edifici, che consente la maggiore libertà d'espressione sotto il profilo estetico, oltre a offrire molteplici vantaggi dal punto di vista dell'isolamento, grazie alla naturale circolazione dell'aria tra le pareti e i pannelli applicati, e della protezione dagli agenti atmosferici. Proprio per questo è stata la soluzione scelta da BM Group, azienda industriale italiana fondata nel 1993 in Valle del Chiese (Trento) e pioniera nei campi dell'innovazione tecnologica per l'industria e degli impianti energetici da fonti rinnovabili. Il gruppo ha deciso di realizzare un nuovo stabilimento dove convogliare tutti i reparti dell'azienda, compresa la software house Soft-Technologies.

IL PERCORSO

«In pochi anni siamo passati da essere un'azienda locale a essere un gruppo di aziende con competenze diverse ma complementari. A un certo punto ci siamo trovati ad avere due sedi poco distanti una dall'altra. Così, poco più di un anno fa, insieme agli altri soci, abbiamo deciso di realizzare un nuovo stabilimento», spiega Alex Bottini, Cso Energy and Board Member BM Group. «Abbiamo quindi chiesto alla Provincia di Trento di riconvertire una grande area in disuso di sua proprietà situata, sempre a Borgo Chiese. Definito l'accordo, sono iniziati i lavori e, su un totale di 30 mila metri quadrati di superficie, 10 mila sono occupati da uffici, officina, magazzino, sale meeting e formazione. Eravamo consapevoli che l'incremento della capacità produttiva di BM Group avrebbe avuto un impatto positivo sui processi produttivi, sulla logistica e sulla collaborazione con i fornitori. Oggi il nostro stabilimento è completamente green e plastic free». Anche la scelta di BF come fornitore è avvenuta a chilometro zero. «La Valle del Chiese, così come il Trentino, ospitano numerosi casi di eccellenza che uniscono i punti di forza dell'artigianalità tradizionale allo spirito innovatore. BF è un esempio concreto. Nel momento in cui la qualità a cui noi aspiriamo è disponibile sul territorio, la scelta del fornitore è stata semplice», conferma Bottini.

PASSIONE E INNOVAZIONE

La richiesta del committente è stata quella di esprimere l'identità aziendale, fatta di passione, innovazione, determinazione, futuro, attraverso il colore, le forme e i materiali della nuova sede. Per questo progetto BF ha optato per pannelli in HPL tinta pietra da 3600x1300 millimetri, posati in verticale con giunte sfalsate, poiché la quota superiore della facciata non era orizzontale, ma inclinata, come anche la parte laterale. All'interno della facciata sono state inseriti profili in alluminio, dove sono stati applicati dei led colorati. Il capannone, dotato di un'altezza di 7 metri, ha visto la creazione di una struttura con profili e staffe di varie dimensioni, per ottenere l'inclinazione e alzare la facciata fino a 9 metri. Per dare ulteriore movimento sono stati creati dei portali utilizzando una barraccatura in alluminio rivestita con pannelli di colore rosso.

DESIGN ESCLUSIVO

Oltre all'HPL, l'azienda trentina BF utilizza per i suoi progetti anche legno e vetro, da soli o abbinati tra di loro, per creare un design esclusivo. Lo staff dell'azienda collabora con architetti e progettisti con soluzioni su misura di ogni progetto, puntando sempre sull'individualità e coniugando rigore e creatività italiana. Funzione, armonia estetica e posa professionale caratterizzano le realizzazioni BF, sempre curate nel dettaglio e attente alla qualità del prodotto. Oltre alle facciate ventilate, l'azienda propone varie soluzioni per esterni, adatte a tutte le esigenze: assenza di manutenzione, privacy, legno tradizionale o trasparenza del vetro per viste mozzafiato. Ed è proprio grazie all'esperienza ventennale nei parapetti che BF ha creato un montante in alluminio certificato per la spinta di 200 chilogrammi nel rispetto delle normative vigenti.

La facciata della nuova sede di BM Group a Borgo Chiese (Trento) realizzata da BF con pannelli in HPL tinta pietra e led colorati

La facciata di BM Group prima e durante i lavori. Sotto, la facciata completata

SPONSOR

BM GROUP FLIES WITH ELICAMPIGLIO

BM Group supports Elicampiglio, which has been flying over the Dolomites with **scenic flights** and helicopter **transfers** since 1993.
Elicampiglio is also involved in **aerial work,** a service that BM Group uses for the **installation of photovoltaic panels** in places inaccessible to other means, guaranteeing the safety of workers, speed of installation, and process efficiency.
By working with **local** suppliers, BM Group also demonstrates its **commitment** to supporting the territory.

Find out more on www.elicampiglio.it/en

Helicopter during the installation of panels on an industrial roof (Brescia, Italy)

GIANLUCA MACCANI COMMENTS ON THE ARTICLE IN AMM 2015

GIANLUCA MACCANI
President and CTO Polytec USA

For **Polytec**, BM Group's most important company, **2015** was a turning point. At that time, the push of the "Industry 4.0" plan in Italy as well as other European countries and the rush to catch up with the technology gap of large steel groups outside Europe were fostering a **general interest** in robotics. At the same time, the growing number of references and increasing demand for Polytec robots were proof that the pioneering and courageous spirit of this company, which had oriented its business towards **automation** solutions integrating **robotics** and **artificial vision**, was on the right track.

In 2015, the most important magazine in the American steel industry, **American Metal Market**, decided to devote considerable attention to our reality with an extensive article on our solutions, highlighting their considerable **innovative impact**. Among the main benefits of the robotic sampling and temperature measurement systems by Polytec we find **extreme precision** in repetitive operations and **increased safety** by moving humans away from critical work environments where liquid steel is present.

By accelerating the process of **internationalisation** with the opening of branches in Houston, São Paulo, CDMX, and Seoul, and by listening to the new needs of manufacturers, Polytec has quickly found itself facing increasingly **complex** projects, integrating in-house skills, and making use of the best technologies available on the market.

From 2015 until now, the improvements that these solutions have brought to the process are tangible: in addition to operator safety, there is also the need to **track** production and an orientation towards constant product **quality improvement**. Looking back, I recognise that while our solutions already had a significant impact back then, today we are pleased to see the result of a collective effort by our departments to refine and expand existing systems with new functionalities, offering a **concrete response** to the needs of the market.

Building strong strategic partnerships with the most important **players** in the industry and research centres has allowed us to gain new knowledge, within a constructive dialogue between the parties.

RoboHarsh, for instance, is a research project co-funded by the EU through the Research Fund for Coal and Steel that involved Scuola Superiore Sant'Anna (SSSA), Polytec, and PSC. The project, which ran from 2016 to 2019, had as its objective the realisation of a robotic cell to support sliding gate maintenance, a high-risk activity for the operator as liquid steel flows through it after refining and treatment processes and because of critical environmental conditions. The realisation of the prototype and the completion of the subsequent stages now see us owning the **patent** for this innovative application.

In the evolution of this complex industrial sector, **automation**, **robotics**, and **artificial intelligence** will continue to play a key role. Polytec is using its multidisciplinary expertise to continue developing tailor-made solutions that are applied throughout the steel production process. Our aim has always been to improve the work quality for people, who upgrade "**from operator to supervisor**", and make factory work attractive to **new generations**.

May 2015 www.amm.com Published since 1882

American Metal Market

AMM, 225 Park Avenue South, New York, NY 10003

Driven to succeed

Patrick Lawlor steers Sapa Extrusions in the right direction.

METALS TECH DRIVES FUTURE

AEROSPACE OFFERS HOPE

ANNUAL *AMM* STEEL AWARDS

Automation nation

Robots are moving into more autonomous, complex operations as additional safety for humans is supported by better sensors and integration for equipment that has moved the focus in steel on getting people away from hot metal, dangerous currents and gases.

AYE, ROBOT

In a classic example of life imitating art, the rapid development of robotics in steelmaking is actually falling precisely into line with the Three Laws of Robots created by science-fiction legend Isaac Asimov:

1) A robot may not injure a human being or, through inaction, allow a human being to come to harm;

2) A robot must obey the orders given it by human beings, except where such orders would conflict with the First Law;

3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Asimov wrote the first version of those mandates in 1942, but they entered the popular culture firmly in 1950 with the success of "I Robot." Conceived as the basis for drama and excitement in outer space, the laws are a remarkably accurate assessment of how robots are being used on Earth protect human beings and improve operations in steelmaking.

Robotics in steel has been meaningful, but penetration remains far less extensive than in other heavy industries. The focus in steel has been on getting people away from hot metal, dangerous currents and noxious gases. With the first generation of robotics having proven themselves capable and reliable, there is increasing emphasis on detection systems, sensors and system integration to enable the robots to do more things and to do them more autonomously.

This year was just a week old when two heavy hitters in global robotics combined forces to focus specifically on iron, steel, and aluminum. Mitsubishi Heavy Industries (MHI), Ltd. and Siemens AG announced the completion of their joint venture in the field, Primetals Technologies, Ltd., headquartered in London. Mitsubishi-Hitachi Metals Machinery, Inc.–an MHI consolidated group company with equity participation by Hitachi, Ltd. and IHI Corporation–holds a 51-percent and Siemens a 49-percent stake in the joint venture. With the closing of the transaction, the joint venture will start operations with 9,000 employees coming from both partners.

Primetals Technologies has expanded installations of its LiquiRob robots to several countries.

Polytec, the robotics subsidiary of Italian group BM Holding, builds equipment for new plants.

The clear emphasis at one of the major industry events in the automation and robotics sector recently was on support systems for enabling robots. "The coolest stuff at the show was all about speed, tactile sensing, and collaborative technology," said Alex Shikany, director of market analysis for the Association for Advancing Automation. A3 is an umbrella organization in robotics and automation and just held it biennial "Automate" exposition and conference in Chicago at the end of March.

Shikany said that while some may use the terms interchangeably, automation comprises robotics as well as machine vision and sensing, and also motion control. Basically a robot can operate blind, designed to make the same motion regardless of the actual circumstances, but the drive is clearly for the machine to be cognizant of it circumstances and act accordingly. The goal is for more precise and useful actions, but also greater safety.

Sensors are not just for what the robot is holding or moving or measuring, Shikany said, adding, "Sensors suites can enable the robot to move more slowly or stop if people get to close." The object is to keep the robot from injuring people, but similar technology can be configured to allow the robot to go places dangerous for people.

That has been the case with robots in steelmaking for several years, as they take measurements and samples. But the new sensors and collaborative technology will enable the next generation of steelmaking robots to do more and varied jobs, even those requiring decision making.

"This is what we have seen in the other industries where robots are extensively used," Shikany said, "such as automobiles and aerospace. So it makes sense that robotics in steelmaking would mirror that." He acknowledged that conditions in the steel mill can be much more harsh than in most other industries, but he pointed to the advances in machine vision and motion control.

"There is a challenge to robotic operations."

-Andreas Flick, Primetals Technologies

For all the advances in vision, the paths to growth are not necessarily clear to see. As a champion for the technology Shikany urges equipment makers to be more energetic about getting that first application in as many steel mills as possible. Robot manufacturers don't disagree in principle, but suggest there is better business return getting the second and third installations at a mill that has already shown an interest in the technology. The implication is that as robotics are seen as a competitive advantage in safety and operational efficiency, the rest of the industry will hasten to follow the early adopters.

Another divergence in development is developing around the power and force robots can wield. "There are those who favor power- and force-limited robots for close work with humans," Shikany said, "and others who advocate more sensors and not limiting functionality—full capacity." Shikany wrote a white paper reviewing both sides and led a round-table discussion at the trade show. The white paper is available for free download on the association's Web site [www.a3automate.org].

"Machine vision technology has come so far," Shikany said, "the capability for much more complex tasks and processing speed is remarkable. For steelmakers this could mean that robots coupled with machine vision may be able to do more on their own."

The main driver for robotics is to substitute them for humans in hazardous areas near liquid metal for safety reasons, and also for reproducibility in results, says Andreas Flick, chief technology officer upstream and head of technology & innovation at Primetals Technologies. "You want

AYE, ROBOT

to have measurements at the same place and the same time in the process under the same conditions."

"You see those workers in the silver heat gear or protective gear," Flick said, "they have to hold the probe in place for about 40 seconds for Hydris measurements. The gear can protect a human very well from the heat, but even one little steel splash and you are not going to want to repeat the job."

Notably, robots and humans face different threats in ambient steelmaking conditions. While robots are immune to most noxious gases, heat, sparks and other human perils, they are vulnerable to dirt and high electrical fields, which are less of a danger to humans.

"Many existing robotic applications come from automaking, which is very clean," Flick said. "As we know, the melt shop environment is hot and dusty. The steelmaking environment is very different from that of the automobile assembly plant. That is definitely a challenge to robotic operations in a steel plant and therefore the application is still in its early phase."

Another small irony is that for the early-adopter steelmakers that were eager to take people out of harm's way and install robots, the installation proved tough. "One of our first uses in manufacturing was with Posco in South Korea," Flick said. "The robot (called LiquiRob) had to be integrated into the layout of an existing casting machine and that was a challenge in itself. But we were able to get the robot started and used, and it is still in use."

Flick noted that the automated nature of robotics belies their operation reality.

Polytec, the robotics subsidiary of Italian group BM Holding, can retrofit its robotic automation onto existing steelmaking facilities.

"They work autonomously, but they sometimes require maintenance and support, just as any other machine, as well as training for the operators. Shop floor workers need to get a robotic driver license. Those are issued by the major robot manufacturers."

Both Siemens and Mitsubishi Heavy Industries are global manufacturing powers, but in this segment, they stick to technology rather than nuts and bolts. "The robot itself is purchased," Flick said. "They are selected for size and load and are available from any of the major manufacturers. We buy ours from Kuka, then we write the code and manage the integration to the steel plant's layout. We also handle the operations and safety aspects, as we know what's required by the steel producers. We also develop the tools that the robot uses at the business end."

As robots become more widely used, steelmakers are learning how to make the most of their capabilities. Sometimes that requires expansive thinking. "Many modern casters have multiple manipulations," Flick said. "Every one is different, every one is custom tailored to the steelmaker's requirements. In some cases there can be four different manipulators. Rather than replace that with four robots, we tried to eliminate all four and replace them with one robot capable of doing all four tasks, efficiently and safely."

The state of the art, Flick said, is for robots to handle manipulations like oxygen lancing of a ladle or take measurements in a very reliable, repeatable, and safe way. But they are simply executing specific tasks and commands at a specific time. "In the future, the robots will be much more autonomous, with sensors and decision-making capabilities," he said.

"For example, instead of taking a temperature measurement at a specific time in the process," Flick said, "the robot will have a window of time in which to take that measurement. It will assess the safety of the immediate area and determine when to start its operational sequence. It will communicate with the overall plant planning system. If there is a safety concern it will wait and inform."

From the initial applications in Korea, Primetals Technologies expanded Liqui-Rob installations to Brazil (Cosipa and TKCSA) and then to Europe (AM, voestalpine and Neuve Maison). Applications include the sub-lance probe manipulation above the opening of a converter in a melt-shop, where robots have proven more durable than standard mechanical manipulators. Another application serves electric arc furnaces to measure temperature during power-on without interrupting the melting process. "That is a very difficult operation for an operator, to hold steady through a very long stroke. The robot can do that very well. The challenge is not the movement, but the hostile environment during power-on," Flick said.

Flick said Primetals Technologies and others in the segment understand the hurdles to adoption, but see those falling more rapidly in the next few years. He senses that unwillingness to date arises out of the expense and the complication of taking time out of production to retrofit or install.

"Today's operators are growing up with technology," he said. "They are more accepting of it. The question is, are the mills willing to take the time and expense? Existing plans are unique, and it can be a challenge to find ways to integrate the robotics into the physical and operational envelopes. But the benefits of safety and reproducible results are clear and must be a common goal."

Polytec is advancing automation in steelmaking from iron preparation to finished metal.

Robots from Polytec, the subsidiary of Italian group BM Holding, perform a variety of tasks.

Even with the goals clear, the paths remain variable. New lines and whole new mills are being built, often with the latest robotic tools integral from the start. Such was the case for Polytec, the robotics subsidiary of Italian group BM Holding. "We are retrofitting automation onto existing plants," says Gianluca Marccani, key accounts manager for automation and robotics at Polytec. "We are also building new plants. We just installed a completely new melt shop at a mill in Slovenia in February. We are advancing automation in steelmaking from iron preparation to finished metal."

Echoing Shikany, Marccani said that automation, robotics, and 3D vision increasingly "are all coming together for complete solutions in steel. We have realized a lot of plants in Germany, in France, Spain, and Italy. Some plants have a lot of robotics, some do not. There is not good penetration in rolling mills, but there are opportunities, especially with more autonomous systems. For example, at the EAF we can change lances automatically using a water-cooled camera."

Marccani takes the practical, rather than the evangelical approach to growth. "We work with a lot of big groups. That is the best way to grow. We are at 20 or 25 plants worldwide, mostly with more than one robot each. It is more important to get that second, third, fourth in those plants than the first one in other plants," he said.

GREGORY DL MORRIS

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ALESSANDRO STAGNOLI: THE FIRST OF MANY MORE

INTRODUCTION

Alessandro Stagnoli is the first employee of BM Group. This year, he celebrates his **30th year of activity** with BM Group. Still working in the electrical testing department, we met him to collect his thoughts on this extraordinary achievement.

THE INTERVIEW

Alessandro, tell us about your meeting with Mirko Bottini.

"I have to say that we met by chance, through mutual friends, shortly after finishing my studies. Mirko was looking for help with automation projects that he was following at the service of local companies in the wood sector. It's been 30 years, and I hardly believe this is real."

How was the company organized in 1993?

"It was just the three of us – Mirko, his father, and me. Initially, we dealt with automation for sawmills, working on behalf of local companies that commissioned us for the work."

Today the companies that are part of BM Group work in numerous industrial sectors that have completely different characteristics. How did you experience this evolution?

"Continuous training is an opportunity to constantly learn something new and to get involved. From automation to robotics, and energy plants from renewable sources. We have recently created solutions for intralogistics, now we also deal with hydrogen, and I'm sure we won't stop fulfil our potential. There are always new ideas and new possibilities."

Mirko Bottini, BM Group founder and shareholder and **Alessandro Stagnoli**, electrical workshop supervisor

BM Group has now more than 300 employees. Are you excited about being the first one?

"I certainly feel a little proud; I can say that I have seen the company grow up, just like a child, day by day."

How would you summarise these 30 years of work carried out by BM Group?

"Chaotic, in a good way, of course. Going from 3 to 300 in just a few years was a huge leap. The work has increased exponentially, and everyone in the company has done and is doing their part, so that the growth path continues. People and territory around us grow together with the company."

30 years of work is a long time. Is there a moment when you perceived the turning point?

"When we started working for the Riva group, we had challenging projects successfully completed. These first results have given us a significant boost."

Would you have ever imagined all this?

"To be honest, no. Sure, with today's look, it's different. We are known all over the world for our technologies; in some sectors, we are leaders. We got there thanks to the courage and ability of the partners, together with a lot of work!"

Is there a project you are particularly proud of?

"CSL in Taranto, which was active in cold rolling. It was around 2015-2016. We had to revamp a coil sheet production line from the 1970s, which was totally electro-mechanically managed and which we automated step by step. I think it was one of the simplest and most monotonous jobs I've ever followed, but, at the same time, it's the project I remember the most for the great satisfaction it gave me."

A very current topic: the new generations in the world of work. How do you see the meeting of the old and new generations in BM Group?

"BM Group believes in young people. Young people are more familiar with technology and they know English. The winning mix between old and new generations combines our experience with their digital skills. Obviously, it is important to continue learning and be passionate about one's job; if not, any technical skill is not enough."

In conclusion, do you have a wise piece of advice that you would like to share with our young newcomers?

"Just one thing: it's important to be aware that you can't have everything right away. This applies in everyday life as well as in your career. The results only come with commitment, sacrifices, and a strong desire to learn."

5,5 MW OF PHOTOVOLTAICS BY NYOX

Italgen's **5.5 MW** photovoltaic plant is signed by Nyox. It was inaugurated in Modugno (Italy) last June, and it was a job done in collaboration with qualified local companies.

"Thanks to the excellent **coordination** by the Site Manager and the Operations Management, the more than twenty employees worked in an organised and collaborative atmosphere. Working in a former industrial area presents unavoidable challenges, such as the installation of the module-bearing structures and the excavation work" comments the Project Manager Paolo Dal Pra'. Our **expertise** in managing large construction sites and the experience and **professionalism** of the local contractors engaged enabled us to solve the problems in the shortest possible time. There was an immediate **understanding** between the client, construction management, and us: a cohesive team from start to finish",

The ground-mounted plant, built on a brownfield site and redeveloped with 20 hectares to be used for public green space, with a cycle path and eco-museum route, is equipped with more than **ten thousand high quality photovoltaic modules** and is integrated with **supervision systems**, **remote management**, and an **anti-intrusion system** with motion detection cameras. The expected annual production is **8.5 GWh**, equal to the annual consumption of about 3,200 households.

Italy is a sun-kissed country and therefore favourable to the production of energy from **renewable sources**. This important new reference has been added to the **large projects** currently under construction, making Nyox a candidate among the leading **EPC contractors** in the photovoltaic sector in Italy.

PLANT FOR ITALGEN

Ground-mounted plant for Italgen


campigliodolomiti.it
WHERE
MOUNTAINS
MEET
HUMANS
TREKKING, MOUNTAIN BIKING,
CLIMBING, VIA FERRATA
BETWEEN ADAMELLO-PRESANELLA
AND DOLOMITI DI BRENTA.
ENDLESS ROUTES.
UNIQUE EXPERIENCES.
MADONNA
DI CAMPIGLIO

TERRITORY

OUR HOSPITALITY PROGRAMME

For us at BM Group, Trentino is **home**, place of **work**, and the environment where we spend our **free time**. Most of us were born and grew up in these areas and appreciate their traditions and nature. There is strong participation in **local associations** that promote cultural and sports initiatives for residents and guests. This strong involvement and sense of belonging make us predisposed to **promote** our area even when we meet with our customers, who are always pleasantly impressed by this attitude.

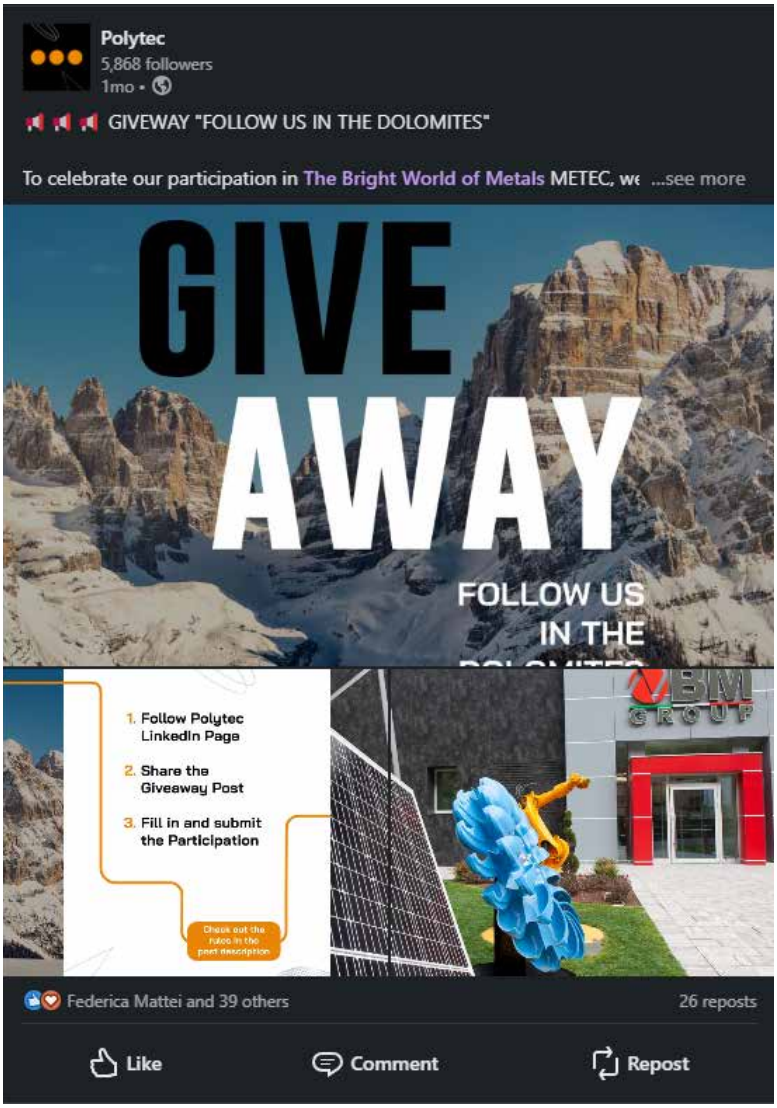
This gave rise to the idea of developing a more structured **hospitality** programme available to all our delegations, which, depending on their stay, can access a series of services, such as outdoor sports experiences, tastings of typical products, guided tours, and activities in the area.

Both at our headquarters and during international events, we become **ambassadors of Trentino in the world**, distributing information material and small samples of our gastronomic tradition.

Usual picture of delegations visiting BM Group headquarters

3Tre ski slope in Madonna di Campiglio (Trentino, Italy)

The most recent initiative is the giveaway **Follow us in the Dolomites**, promoted by Polytec and valid until the end of **September 2023**. By following Polytec's LinkedIn page, sharing the giveaway post, and filling out a short entry form, you could win a **one-week stay in the Brenta Dolomites**, in Trentino, with nature activities and a visit to our headquarters.



LinkedIn post to be shared to participate in the giveaway

POLYTEC POST

Our company is always ready to welcome you, for more information visit our website

www.polytec.bmgroup.com

Mattia Rato on the starting grid in Valencia, Spain

SPONSOR

RATO MOTO: POLYTEC AND SPORT

Sport and business: two worlds much closer than you think. We at Polytec are well aware of this. Especially for young people, sporting activity can have a significant impact on their personal growth and quality of life, offering them numerous physical, mental, and social benefits.

This is one of the reasons why we decided to support **Mattia Rato**, a young two-wheeler promise. A protagonist of the Moto2 European Championship in the context of the FIM JuniorGP, in which he has been racing for four year. Mattia wears the colours of one of the most prestigious teams on the grid this season: the **Spanish team AGR**.

Wearing the number 13, the eighteen-year-old from Como/Italy has shown grit and maturity in the first race of the season. In the fascinating setting of Estoril, a town on the outskirts of Lisbon, Mattia disputed the **first race** of the Moto2 European Championship of the 2023 season at the beginning of May, achieving an excellent result, finishing fifth in race 1 and fourth in race 2. Mattia also showed determination and skill in the following races, taking **third place in the overall standings** with 98 points after the fifth race of the season.

Mattia's debut in the **Moto2 World Championship** in the races in Austria and Spain, between August and September, is something to be proud of. This convocation represents an important **opportunity for him to grow** and to **measure himself against the greatest riders** of the moment.

The future for Mattia in racing is **promising** and full of **possibilities**, and the Polytec team is excited to accompany him on this journey.

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