



# GAWGROUP

## NEUES AUS DER GRUPPE imteam

### GAW – Best Practice in India

GAWGROUP  
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GAW

Ki KRESTA industries

osmo membrane systems

ARTEC

thomas

ECON

UNICOR®

Edition 1 | 2013  
limited edition

Shortcuts

Editorial

Company report

Projects

Competences

Focus on

People



For more information have a look at page 8.  
f.l.t.r. Shantanu Reinhold (Impact KEG); Wilfried Leitgeb (ICS Styria); Seema Bhardwaj (Rödl & Partner); Hans-Jörg Hörtnagl (Austrian Economic Chamber); S.E. Ramachandran Swaminathan (Indian Ambassador in Vienna); Raj Venugopal (GAW); Sigrid Tertinegg (GAW); Joseph Olimalayil (Indian Embassy); Thyago Ohana (Indian Embassy)

### Shortcuts

#### Conveyor systems for recycling scrap cars

GAW received a contract from RAGG GmbH in Tyrol for the installation of conveyor systems for a new drainage station for scrap cars recycling.

Two 2-lane steel plate conveyors were supplied including a rotate/lift/tilt unit and two belt conveyors for disposal of tyres and rims.

In the drainage station, the scrap cars are drained and separated from wheels, batteries and fluids such as fuel, oil, cooling medium, etc. in two steps, whereby the special feature of this particular system is that the hazardous materials are removed and disposed of in a closed system and no explosion-hazard zone is therefore required.

The system is scheduled for commissioning mid-July 2013.

#### Optimisation of the gelling oven at Audi Neckarsulm

In automotive manufacturing, doors and hatches in vehicle body construction are, among other, produced by gluing the individual parts to create a complete assembly such as doors and rear and front hatches.

After this adhesion process, a GAW pallet conveyor system moves the assemblies into the so-called glue dryer or "gelling oven", where the adhesive beads are cured at about 200°C for a precisely defined period.

In the context of the "gelling oven" project, the process technology was entirely modified and optimised and conveyor components (such as the eccentric lift table and the hot zone conveyor system) inside and outside the gelling oven were replaced. Acceptance took place in May 2013.

### Editorial

Increasing unemployment, sideways economic movement, Austria is losing attractiveness as a location. Without a doubt there is much to do and enough reason to endeavour getting Austria in shape as an attractive location for business and work for the increasingly intense international competition. Suggestions of a sixth week of vacation or a labour market fee per hour of overtime are certainly more than unwelcome in this case. The increasing cost of labour in Austria, at 15.5% since 2008, is well over the EU average of 8.6% and the French situation demonstrates where fewer working hours at the same pay will lead: since the introduction of the 35-hour week in the late 90s, the competitiveness of the Eurozone's second largest economy has dropped dramatically and unemployment has exceeded the 10% mark. To remain internationally competitive, discussions should therefore rather focus on how to allow companies the necessary flexibility to work when there is work.

And whilst certain sections of the population and the politicians apparently do not care about Austria losing ground economically, the state continues raking in the labour income of employees without restraint to finance its policy of constant squandering – 55.77% of average employment income is snatched by the public authorities! Tax revenue of the Republic rose by 33% over the past ten years and we still watch in amazement as the state stacks up deficit upon deficit since 1970. Other countries have done the opposite. Denmark refused to fight rising unemployment in the 1990s through higher government spending, but instituted profound labour market reforms; Sweden trimmed the welfare state to a financially viable level and in Switzerland reined in its extravagant policies through a constitutional debt limit. Only in Austria do certain circles continue to ignore reality.

In contrast to companies such as the GAW Group, who are aware of their responsibility towards their environment. We live in a world that is probably changing at a faster and more profound rate than ever before. Global eco-

omic and political structures shift, new economies and markets emerge. The paper market is also undergoing radical change. The demand for packaging paper and new processing techniques is strongly on the increase, whilst the demand for graphic paper products stagnates – both in China and in Europe, as the GAW technologies project reports from Liansheng, Sappi Alfeld, Zellstoff Pöls or Reno de Medici can attest. UNICOR also does not allow opportunities to pass them by, having recently acquired a Canadian company with a product line perfectly complementing the UNICOR portfolio. The GAW

Group has in recent years established a general portfolio to serve the long term needs of our markets and there is more news to report on from the other companies. I invite you take some time browsing through this issue and wish all our readers a relaxing summer.

Mag. Jochen Pildner-Steinburg

#### The Editorial team

Above from left: Nina Pildner-Steinburg/GAW, Nikolaus Brücke/GAW, Andreas Mühle/GAW, Josef Mohl/GAW  
Middle from left: Christian Stine/GAW, Magdalena Deisl/ECON, Christian Steiner/OSMO, Rinco Albert/orange'clou for UNICOR  
Down from left: Oliver Koroschetz/GAW, Sigrid Tertinegg/GAW, Slike Thamerl/KRESTA, Jörg Severing/ARTEC



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## COMPANY REPORT

## GAW-Automotive in Germany

To improve their market presence in Germany, GAW technologies GmbH in Graz founded a subsidiary headquartered in Kornthal, Münchingen. The new company will, like its parent company, also do business under the GAW technologies GmbH name.

In addition to the automotive team in Graz with its proven competence, a further team will be established in Germany, working the market and processing orders based in the Hanau / Frankfurt region. Mr. Dieter Metz was appointed as site manager in October 2012 already. The graduate mechanical engineer has many years of experience in senior positions with well-known engineering companies in the field of automotive industry component supply. The business contacts he has established to the renowned German car manufacturers over the years and his extensive expertise in the field of conveyor technology and plant construction are a significant asset to GAW and sure to increase growth in the automotive market segment.



The establishment of a subsidiary in Germany ensures proximity to the German automotive industry

Dipl. Ing. Dieter Metz

**Capacity:**  
Head of GAW office Automotive Germany & Key Account Automotive

**Education:**  
University degree in mechanical engineering

**Field of specialisation:**  
Conveyor systems and plant construction in the automotive industry

**Career:**

- 1977 – 2007 Fredenhagen GmbH & Co KG
- 2007 – 2012 Transsystem Stahlbau und Fördertechnik GmbH
- since October 2012 GAW technologies GmbH

## PROJECTS

## GAW – Large-scale project at Sappi Alfeld

A further chapter has been added to decades of partnership between Sappi Alfeld and GAW: within the framework of rebuilding paper machine PM2, the Graz plant manufacturer was commissioned to carry out corresponding modifications to coating colour provisioning.

Following the alterations, the new PM2 will be the quickest and most productive speciality-paper machine in the world, producing mainly coated 40-180 g/m grades for use in packaging – including food packaging, technical applications, liners and labels.

**Fast coating colour changes without corrupting formulations**

Several workstations as well as a cooling water system for the stations and coaters are included in the scope of work. A coating head is supplied by two work stations alternately, allowing change of coating head colours in minimum time. The risk of dilution of coating colours when cleaning the supply lines during coating colour change, or of corrupting formulations, is excluded by the Wet in Wet Technology of the GAW ball-cleaning-system, keeping losses to a minimum.

The strict Sappi guidelines in respect of ventilation of the coating colour are very demand-

ing and the schedules also present a major challenge. Not only therefore must plant components such as filtration, storage and workstation of the decommissioned coater SM3 be dismantled, transported to the new SM2 and integrated there within a strict restructuring time frame, but assemblies must also be transported to GAW in Graz to undergo conversions or extensions.

After commissioning, scheduled for the autumn of 2013, the new PM2 will produce roughly 135 000 tons of coated specialty paper annually – in addition to the 165 000 tons of specialty paper and cardboard from paper machines 1, 3, 4 and 5.

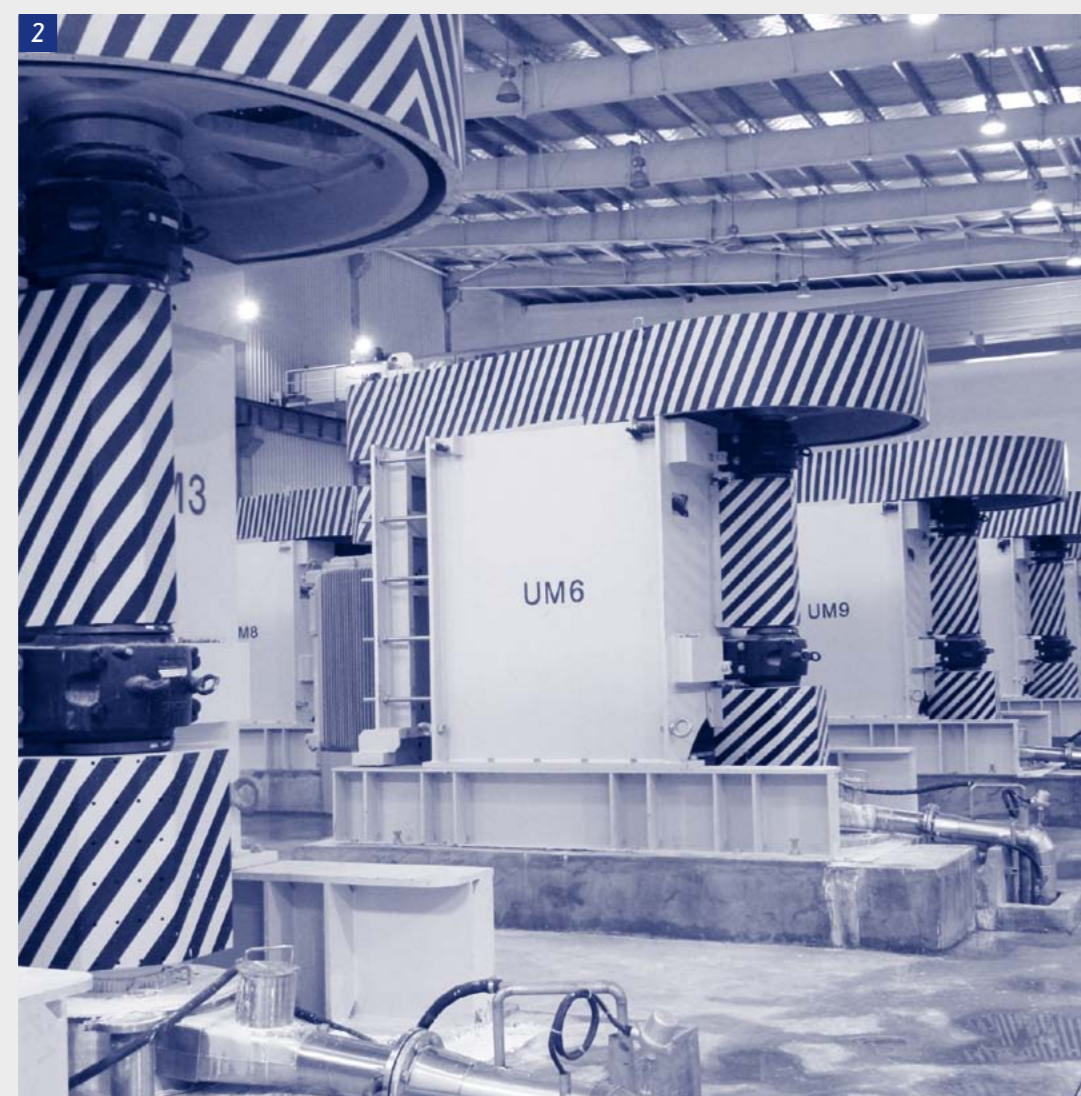
Following the coating kitchen order for the new cardboard machine, GAW was also awarded the order for the GCC grinding mill and the chemical treatment plant.

The largest producer of packaging cardboard in the Chinese province of Fujian, the Fujian Liansheng Paper Co. Ltd, is massively expanding its capacity. In the Longhai factory in Zhangzhou City, VOITH is in the process of building the new BM8 cardboard machine for which GAW supplies, installs and launches the coating colour preparation and work stations (imteam report in Issue 1/2012).

**GCC Grinding plant and chemical treatment as an additional project**

GAW received an additional order in the spring of 2013. This includes supply, installation and commissioning of treatment plants for wet-end and deinking chemicals as well as a wet grinding system for ground calcium carbonate (GCC) for which a separate building will be erected next to the GAW coating kitchen.

The BM8 design has a width of 6.6 metres and a speed of 900 metres per minute and after its completion – start-up is scheduled for late 2013 – it will produce about 600 000 tons of on-line coated Greyback duplex cardboard and White Top Testliner per year. With its five existing cardboard machines, Fujian Liansheng Paper produces at full capacity already – about 2 million tons of brown cardboard per annum. The new machine will now introduce the production of coated cardboard types as well.



GAW Ultramill – GCC Wet grinding plant

## PROJECTS

## GAW receives an order from Zellstoff Pöls

The Heinzel Group builds the highest performance kraft paper machine in Europe in the Pöls plant.



Zellstoff Pöls AG, Styria

The Heinzel Group, the largest producer of market pulp in Central and Eastern Europe, invests about 115 million Euros in the site of its subsidiary Zellstoff Pöls AG, where a new PM2 paper machine is being built.

**Chemical and auxiliary material treatment by GAW**

The GAW delivery comprises the complete supply and installation of treatment systems for cationic starch, alum and talcum-kaolin (powder suspension) – scheduling is planned

for summer 2013. In addition to its great successes in foreign markets and an export quota of 95%, GAW is also proud of its strong local customers and partners and looks forward to purely Styrian cooperation – the Pöls location looks back on more than 300 years of tradition and remains a key economic factor and major employer in the Mur Valley region today, with a turnover of around 220 million Euros per annum and 360 people in its employ.

The Heinzel Group has responded to the constantly growing market for high-quality

bleached kraft paper by increasing its capacity. The PM2 will be the largest kraft paper machine in Europe and, with a width of 5.4 metres, a length of 100 metres and a maximum production speed of 1 000 m/min (at 28 g/m<sup>2</sup>), is set to produce about 80 000 tons of kraft paper per year after its completion at the end of 2013. This paper will then be used in the manufacture of e.g. bags, shopping bags, gift wrap paper and packaging for food or medical products.

## Best results with a combination of continuous kitchen and curtain coater

Just over half a year ago, the world's first combination of a continuous coating preparation system and a curtain coater was commissioned in the Reno De Medici branch of Villa Santa Lucia, located about 130 kilometres southeast of Rome, producing coated white top testliner of the highest quality ever since.

**Extra-gentle coating colour preparation with the ContiMixer**

Villa Santa Lucia manufactures coated grey cardboard and has decided to improve quality by replacing the existing blade coater with a

curtain coater. As part of the overall package awarded to VOITH, GAW was commissioned with expansion of the coating colour preparation unit and work stations for the DF-S coater.

The combination of a continuous kitchen and a curtain coater constituted a new solution and the expectations of the new technology were correspondingly high. Commissioning was in the autumn of 2012 and Reno De Medici is extremely satisfied with the results so far: The special rotor-stator geometry and the three-chamber system of the GAW ContiMixer ensures

production of high-quality coating colours with an extremely low air content of 1.5 to 2% and optimal running characteristics.

The Reno De Medici Group is the leading Italian manufacturer and Europe's second largest manufacturer of cardboard from recycled materials. Founded in Milan in 1967, the production facilities are today spread over several sites in Italy, Spain, France and Germany. Various types of cardboard are produced for all packaging applications.

## Roof assembly unit in vehicle body manufacture

The premium car maker AUDI, once again counting on GAW competence, commissioned the Graz engineering company with the integration of a new roof assembly unit in Neckarsulm.

**Plant construction at the intersection of conveyor systems and body shell work**

This project demands both the handling of vehicle roofs delivered in containers and the precise positioning of these roofs on the platforms for punching.

Within the framework of this interesting challenge, conveyor components such as skid and container conveying systems must be modified,

removed, relocated and rebuilt in order to prepare for future travel patterns and required conveyor capacities. The design, reconstruction and commissioning of a pneumatic gripper on a portal system catering for up to nine different types of vehicle roofs constituted a particular challenge to the engineering and installation teams.

**Commissioning of container conveying systems during running production**

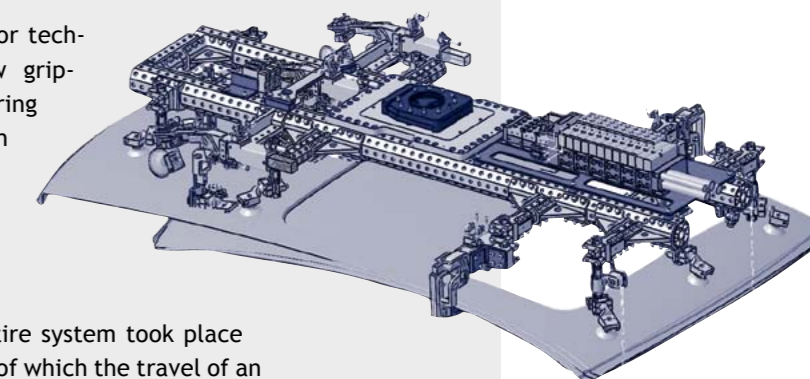
The project is divided into several phases and implemented incrementally. The first step – the reconstruction of two skid conveyor systems – took place during the Christmas shutdown of 2012/13 already, allowing AUDI to

A gripper for up to nine different types of vehicle roof was built for the new roof assembly unit at AUDI.

continue production on 7 January without interruption.

The container conveyor technology with the new gripper was launched during ongoing production in the period 2 April to end of May 2013 and tested under production conditions.

The launch of the entire system took place in June, in the course of which the travel of an existing GAW skid conveyor system was adapted to a newly built robot station.



Pneumatic gripper

## PROJECTS

## UNICOR supplies plant for large pipes to Oman

4 Klaus Kaufmann, UNICOR (3<sup>rd</sup> from right) presents the new UC 1200 together with the Muna Noor management team and the General Manager of Muna Noor Investor Mohammad A. Al-Bahar (2<sup>nd</sup> from left)



The Omani company Muna Noor processes more than 40 000 tons of HDPE and PVC plastics per year, producing smooth and corrugated pipes up to 1 200 mm diameter. The new UNICOR corrugator UC 1200 for the production of waste water pipes with a diameter of up to 1 200 mm was unveiled at the opening ceremony of a new plant in Sohar (Oman) beginning of December.

Omani corrugated pipe manufacturer specifically opts for premium quality

Muna Noor management gives their strong confidence in high quality products from Europe

as the reason for buying the UNICOR corrugator. But UNICOR did not earn this trust purely through their cooperation with Muna Noor in the sale of premium corrugators. Beyond this, UNICOR also actively cooperated in planning for the new plant in Sohar – product layout was designed by the Development department and commissioning was supported by engineers from the Lower Franconia corrugator manufacturer, all the way to successful commissioning.

UNICOR MD Klaus Kaufmann, who participated in the opening of the plant in Oman together with the Omani Minister for Transport and

In the rapidly growing plastic pipe market in the United Arab Emirates, the Omani pipe manufacturer Muna Noor is relying on corrugators from Haßfurt.

Communications, Dr. Ahmad Bin Mohammad Al Futaisi, and other dignitaries, appreciates the excellent cooperation with Muna Noor:

“With the commissioning of a further plant at Muna Noor, UNICOR is setting an additional successful start-up milestone in the Middle East region. This rapidly growing market is one of our current priorities and we are pleased to be in a position to successfully expand cooperation with Muna Noor. The competent and fast launch of the UC 1200 by our technicians earned high praise. Once again a clear sign to me that excellent service will carry the day globally!”

### The UC 1200 properties in detail:

- Use of the patented UNICOR Shuttle technology
- Supports various shaping jaw lengths in the metric or imperial system (vario) – alternatively available
- Alternatively available with parking station for inline sleeve production
- PLC control of the form jaw drive
- Form jaws driven by servo engines
- Open, horizontal design

### Applications of corrugated pipes produced by the UC 1200:

- Waste water, storm water and canalisation
- Manholes / access hatches
- Conveying lines
- Structural and Civil Engineering

## Delivery of an ARTEC 165 DV to VIRUTEX

Chileans say of themselves that they came from “Sur del Mundo” – from the “end of the world”. This can only be in the purely geographical sense. If the world would only be as beautiful and the people as friendly as “at the end”!

VIRUTEX, the leading producer of household items such as brooms, brushes, pans and plastic bags in South America, is expanding its existing plastic films production capacity. The machine for this was delivered and put into operation by ARTEC.

### Significantly increased re-granulate quality

The ARTEC 165 DV recycling system is deployed in the MAMUT subsidiary in the Chilean capital of Santiago de Chile. MAMUT uses plastic waste from mining – Chile is by far the largest producer of copper worldwide, of course – and from other foil waste to produce garbage bags and foil for mining and agriculture. ARTEC successfully secured the order against strong competition and since commissioning the machine has been converting around 1 100 kg of plastic waste per hour to high quality granulate. Virutex has thus not only tripled its production capacity, but it has also achieved a significant

increase in the quality of the regrind, with direct consequences for the in-house production of blow film. Modern technology for degassing of the melt and subsequent fine filtration has allowed thinner and more durable films to be produced with the granulates.

The plant was ordered in November 2012, completed in a record time of 4 months and sent on its voyage across the oceans after successful acceptance testing at the factory. The system was started up in April and after only 4 days of commissioning, ARTEC was already welcoming customers from Argentina for demonstration visits on site!

The household items manufacturer triples production capacity with the new plant.

4 Egger Holzwerkstoffe GmbH, Hexham mill

## KRESTA – Reconstruction of Hexham glue factory

Egger Holzwerkstoffe GmbH are not focusing on the price-performance ratio alone but are, above all, interested also in long-term partnerships: trust and quality are what counts. MD Walter Schiegl had this to say:

“We’d rather work with few, but then very reliable partners.”

### Seven resin tanks for England

KRESTA was recently commissioned with the design, manufacture and delivery of seven resin tanks for the EGGER plant in Hexham, England. Resin is required for the production of chipboards. Also part of the delivery was piping for the new cooling towers and the installation of primary and secondary brackets, installation of the pipe bridge and inspection

of the cooling tower. The EGGER family business was founded in 1961 and now counts among the leading companies in the industry, marketing 7.40 million m<sup>3</sup> of wood products for kitchens, bathrooms, offices, living rooms and bedrooms, for doors and for other applications in private and public life. The chipboard factory in Hexham has been part of the Group of companies since 1984.

KRESTA wrapped up the first order of Egger Holzwerkstoffe GmbH in 2010 – but this was not the last.



## PROJECTS

DHC Solvent Chemie and EICKHOFF look back on a business relationship of over 35 years.

7 Renewal of the cooling water supply lines



## EICKHOFF renews cooling water supply to refinery

EICKHOFF has been a supplier to DHC Solvent Chemie GmbH ever since its founding in 1977. DHC is one of Europe’s leading producers of solvents and other special mineral oil products, with fields of application extending from paints and coatings to production of plastics and agrochemicals, and to special applications in the pharmaceutical, metal processing and food sectors.

One of the reasons for this partnership lasting over the decades certainly is the direct neighbourhood in which the two companies find themselves. Yet the quality of service is

certainly also a prime factor, says DHC MD Dr. Johannes Bremer, who also attaches particularly high significance to the security awareness, training and experience of staff.

The current order comprises renewal of the cooling water supply lines from Mülheim harbour to the refinery. The new pipeline includes both trace heating and insulation, rendering it frost-proof and thus ensuring cooling water supply throughout the year.

## KRESTA supplies process containers for a wheat starch factory

The three salient criteria for gaining an order from AGRANA Stärke GmbH are: reliability – also including financial creditworthiness -, quality of work and ultimately also the price, whereby the price not necessarily be the cheapest, states MD DI Josef Granner.

Since AGRANA was extremely pleased with the completion of the steel, container and column construction within the scope of the construction of the bioethanol plant in 2006, they decid-

ed to commission KRESTA again with building of the wheat starch factory. More than 30 stainless steel process tanks were ordered and approximately 10 000 metres of process piping for the wet starch plant, as well as the installation of a diversity of equipment and steel structures.

Wheat starch plant processes around 250 000 tons of wheat annually

The AGRANA wheat starch plant annually produces 107 000 tons of wheat starch, 23 500 tons

of wheat gluten and 55 000 tons of wheat bran from approximately 250 000 tons of wheat.

Close integration of the plant with the existing bioethanol factory allows the company to utilise the grain in a particularly efficient manner. The unused raw components from the production of wheat starch and gluten are thereby used in both bioethanol production and the production of protein feed.

## Colossal transport order for THOMAS

The Luxembourg manufacturer of air cleaning systems “CPPE” – Carbon Process & Plant Engineering – has been part of the THOMAS customer base since 2011 and, after successful completion of several projects in early 2013, the biggest order to date was landed. The project encompasses a complete flue gas cleaning system, manufactured in India and to be transported from Mumbai to Singapore, more specifically to an offshore island named Jurong Island. For optimal coordination of the transport logistics, local conditions at the recipient’s were inspected by THOMAS on site and procedures were discussed and agreed upon there with the partners in Mumbai and Singapore.

### Container dimensions require special transportation measures

The first part of the consignment – 3 containers with assembly material – was shipped via the MS Angeta, a conventional break-bulk ship, in early 2013. The containers, each measuring 8.35 m in diameter, were transported to the construction site on Jurong Island by flatbed trucks; since the road between harbour and site naturally involved some inherent difficulties for such dimensions, the entrance to the construction site had to be widened and road construction sites cleared. The goods also had to be reloaded along the way in order to reach the destination.

### 25% Freight savings

The second consignment was shipped to Singapore on 40 ft flat rack containers by conventional container ship, where it was transferred to a barge and transported on to Jurong Island. This comprised 6 containers as well as assem-

bled material for these. By selecting a shipping company equipped to carry the oversized container goods, the customer benefited from 25% freight cost savings as compared to conventional transport. The size ratio between container and goods is of particular interest here, since the diameter of the goods is almost 4x larger than that of the container. Difficulties do arise here, especially in the harbours, since not every crane is capable of loading and unloading such large containers.

Other transportations for this project include a further 2 containers from Europe as well as another approx. 40 x 40 ft containers and 1 500 m<sup>3</sup> of other break-bulk goods which must be transported to the site on Jurong Island in the coming months. We will update you on this exercise in the next issue.

### Scope of delivery

#### from Mumbai:

- 3 containers, each measuring 7.85 x 8.35 x 8.45 m, 12 tons
- 2 containers, each measuring 10.55 x 7.00 x 7.20 m, 17 tons
- 1 container measuring 4.50 x 4.50 x 4.50, 3 tons
- 2 floors, each measuring 8.25 x 4.15 x 0.60 m

#### from Europe:

- 40 x 40 ft container
- 1 500 m<sup>3</sup> break-bulk

A complete flue gas cleaning system needed to be transported from Mumbai to Singapore for the customer CPPE.



8 Container transport

9 Container transport



## COMPETENCES

## Advanced application options for dispersion machines through the GAW- $\alpha$ XF Breaker

10 GAW-active Cross-flow-breaker



The newly designed drive unit optimises homogeneity and mixing of highly viscous media.

The use of  $\alpha$ XF Breakers ("active cross-flow breaker") extends the application options for dispersion machines operating according to the bottom drive principle. An even better homogeneity and mixture may thus be guaranteed in the medium for coating colours with viscosities as high as 10 000 mPas and more, for example. With its driven XF wings with adjustable position and location to suit process conditions, the  $\alpha$ XF Breaker furthermore also supports dry product infeed into highly viscous media.

### Variable controlled media rotation

The drive unit comprises a speed controlled geared motor with mechanical brake and different operating modes depending on the technical needs of the process. Be it to inhibit medium rotation in thin liquid phases, to control in medium viscosity ranges or to support circulation of a high viscosity medium.

The  $\alpha$ XF Breaker is modular and may be used instead of conventional baffles. Retrofitting dispersion machines is quick and easy, by attaching to the existing baffle structure.

### GAW- $\alpha$ XF-Breaker

#### benefits:

- better high viscosity turnover
- improves Powder entry
- equal temperature distribution
- speed controlled
- various process modes
- flexible usage depending on process parameters
- enhanced Applications
- high compatibility and easy retrofitting

## Drying of plastic granules: the ECON S+L Dryer

11 S+L Dryer

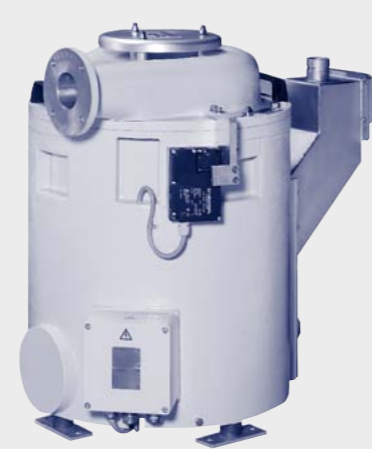
The rotor is surrounded by a cylindrical strainer (for granulate) or a perforated plate (for ground material)

If clinging water must be removed again after under-water granulation or after washing of ground material, mechanical drying by centrifugal force, as in the S+L dryer, is the most effective method. The moist material is fed into the vertical drying chamber via the inlet enclosure laterally and from the bottom and imparted a rotary motion by two angled blades on the rotor casing whilst also moving to the upper rotor edge, or material outlet. A cylindrical strainer arranged concentrically around the rotor retains the plastic material, allowing the water to escape by centrifugal force and discharge to the outside. Water discharges through an opening in the bottom or wall of the enclosure, whilst the air flow transports the granulate or ground material to leave the dryer through a tangential outlet integrated in the cover. The residual moisture of granulates and ground goods may in this way be lowered to between 0.1 and 0.5 percent and 1 and 3 percent by weight respectively. This reduces the cost of thermal drying before further processing by injection moulding or other methods.

### Robust and universally applicable

The defining characteristic of the S+L dryer is its cast aluminium housing which ensures high device stability, quiet operation and a long service life. Because the housing design is universal, the machine is compatible with almost any configuration within a plant. The cast aluminium cover can be mounted in 30° increments to adapt to downstream system

11



components. The material infeed may be configured to suit requirements, e.g. via a feed screw for ground goods or via different infeed housings designed to suit different water content or specific weights of plastic granulates. The strainers may likewise be matched to suit different material properties, through slotted sieves for granulates or perforated plates for recycled goods.

### Specialised tasks – no problem

For the sake of completeness it should be mentioned that the S+L dryers are available not only in the standard version for standard tasks, but that there are also optional versions for special tasks. Gas-tight designs, for example, as needed in polyamide 6 production lines. Because the granulates must undergo treatment in a nitrogen atmosphere here,

12



the dryer is designed with a gas-tight housing, including a gas-tight drive motor. Another special design is the "explosion-proof" version. This version has sealed electrical components, allowing the dryer to also be operated in an environment with flammable gases. For processing of materials containing abrasives, all parts in contact with the product may be wear protected.

for detailed information please contact  
Thorsten Lehnert

Tel.: +49 (0) 177 543 60 49  
E-Mail: t.lehnert@econ.eu

## COMPETENCES

## UNICOR UC 210 – New corrugator for mid-range pipe sizes

The new corrugator allows brisk start of production and minimises material costs.

UNICOR's machines, the so-called corrugators, are used globally for production of corrugated plastic pipes and have proven their mettle in tough international competition. To successfully compete in the increasingly fierce price war, UNICOR has for years relied on the development of premium products that sustainably meet the highest quality requirements.

UNICOR invited customers and representatives from all over the world to their works in Hassfurt, Germany, for the introduction of the new UC 210 corrugator, where the machine was demonstrated live to the audience.

### Pipe ready for sale shortly after starting the production line

The corrugator UC 210 is characterised especially by the fact that it can produce pipes ready for sale shortly after start-up already, eliminating the loss of material generally accompanying start-up and consequent increase in production costs.

### Scope of application

With diameters ranging from 32 mm i.d. to 200 o.d.<sup>1</sup> the UC 210 covers the mid-range pipe sizes generally popular with many manufacturers, thus producing single- and double-walled corrugated pipes for applications ranging from technical to drainage.

The performance and throughput data show that UNICOR has again emphasised premium quality in this all-rounder machine. The maxi-

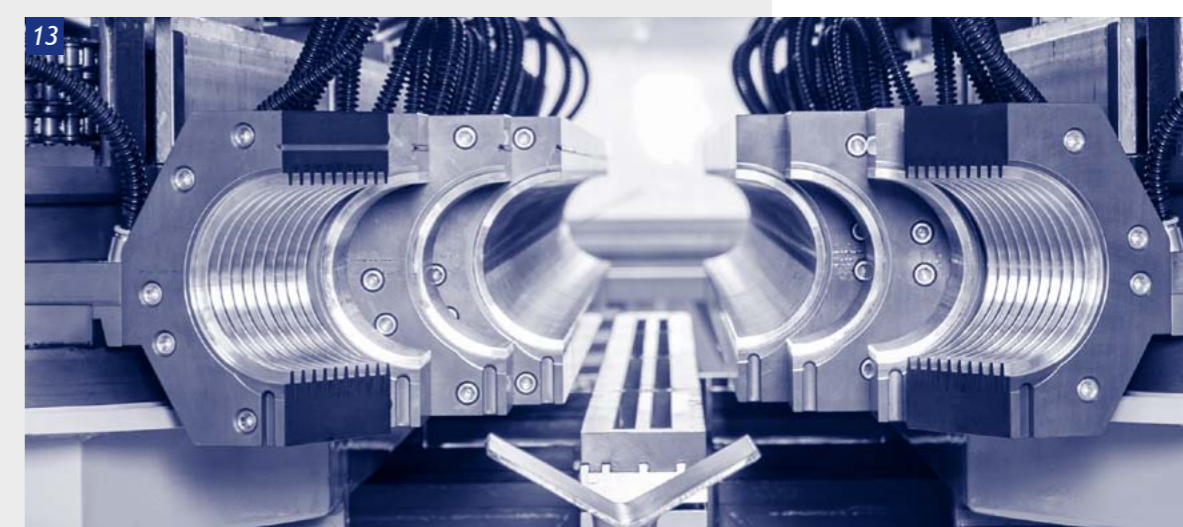
mum PVC output per hour is 1 000 kg, for HDPE 900 kg. The maximum mechanical speed of the corrugator is 35 m/min.

Technical refinements such as the zoom-enabled centre channel or the quick-change system for the form jaws and injection head are standard equipment on the line. The price of the UNICOR UC 210 corrugator is also remarkable in this respect: although the machine covers mid-range pipe sizes and boasts a number of novel technical features, it costs no more than machines with a pipe range restricted to 160 mm o.d.

### Contact:

Rinco Albert  
orange'clou | PR Agency  
Holsteinweg 26  
96120 Bischberg, Germany  
Tel. 0049(0)951-3017137  
albert@orangeclou.de

Fabian Spitzner  
UNICOR GmbH  
Industriestr. 56  
97437 Hassfurt, Germany  
Tel. 0049(0)9521-9560  
fspitzner@unicor.com



15

### UC 210

#### Technical Data

max. pipe diameter (outer diameter) in mm	200
min. pipe diameter (inner diameter) in mm	32
connection power in kw	20
number of mould blocks	48
chain length (mm)	6333
closed chain length (mm)	2550
max. PVC output (kg/h)	1000
max. HDPE output (kg/h)	900
max. speed (m/min)	35
length (mm)	5430
width (mm)	2240
height (mm)	2050
weight without mould blocks (kg)	5700

16



13 Zoom enabled central channel

14 Introduction of the new UC 210 corrugator

15 Technical Data

16 The UNICOR management team Hubert Kößner (left), Klaus Kaufmann (2<sup>nd</sup> from left) and Gerhard Häfner (right) together with GAWGroup representatives Jörg Pildner-Steinburg (middle) and Robert Assl-Pildner-Steinburg (3<sup>rd</sup> from right) as well as political representatives from Hassfurt in front of the new corrugator UC 210.

## OSMO develops a new acid treatment concept

The new acid treatment method reduces waste and also the use of fresh acid.

In close collaboration with a customer from surface engineering, OSMO has developed a new concept for the recovery of depleted acid baths from the production of printing plates.

### More than 75% recovery of phosphoric acid with a new nano-filtration process<sup>2</sup>

The aluminium surfaces of printing plates are treated in a pickling bath during production. This process removes a small quantity of aluminium, which then remains in the acid bath. Since, depending on the desired quality of the product, a certain percentage of metal in the acid bath must not be exceeded, fresh acid needs to be added from time to time or the acid must be replaced. This produces an acid-aluminium mix, with only a small portion of original acid recoverable by traditional processing techniques.

The percentage recovered with OSMO's new method is over 75% and of a quality comparable to that of fresh acid.

### Successful pilot test followed by a concrete order

Since process conditions with 20% phosphoric acid and 50°C process temperature are extreme for the membranes used in the described technique, the application was initially tested for its quality in the MEMCELL OSMO laboratory. Following positive preliminary test results, the customer carried out pilot tests lasting several months in order to gain information about expected service life of the membranes. Since no negative changes in membrane retention and flow rate could be measured, an order for the supply of several plants was subsequently awarded to OSMO.

### External disposal no longer required

The new OSMO treatment technology replaces previous external disposal. The current waste quantity is reduced by a factor of 6 with the installation of nanofiltration and re-cycling of recovered acid furthermore reduces the requirement for fresh acid by a factor of 4 – demonstrating the practical economic benefits of the new treatment technology.

The client uses high-quality phosphoric acid in this example of an application. The method developed by OSMO may, however, also be used for the regeneration of other acids: The ELOXAL process likewise removes aluminium ions, generally with the use of sulphuric acid. Initial field trials confirmed that the new technology holds the promise of new approaches or uses in this field as well.

2 The nanofiltration process is purely physical, i.e. no additional chemicals are used. The process of separation by nanofiltration is similar to the generally more familiar reverse osmosis. The separation effect relies on different diffusion rates of metals contained in the acid.

## ARTEC recycling & compounding development project

Within the framework of a cooperative development project with a leading international manufacturer of twin-screw extrusion lines, ARTEC developed a two-stage recycling / compounding facility which is now ready for the market.

**What does compounding actually mean and what can two stages achieve?**

The well-known ARTEC recycling plants melt plastic waste by means of an extruder screw, followed by degassing – i.e. water vapour and gases are removed from the melt by a vacuum, filtered and, generally, granulated.

The new plant is different, however. The plastic is not granulated here, but the process continues. A melt pump pumps the liquid plastic to a second, twin-screw extruder. Various additives such as chalk, quality-improving additives or other synthetic materials are mixed into the recycling melt here – this process is known as compounding. The resulting melt is degassed again and only then is it granulated into a new plastic with characteristics that were precisely defined in advance.

The particular benefit of this two-stage solution is, firstly, that filtered and degassed, i.e. clean, melt is fed to the twin screw and dry

The new recycling and compounding facility provides filtered and degassed melt and also saves energy.

and therefore cheaper materials are now suited as input material. Secondly, energy consumption is reduced significantly. Without this combination system, melt from the ARTEC recycling plant would have to be processed into granulates using much cooling energy and then stored temporarily before feeding the cold granulate to the twin-screw extruder where it is again liquified.

Trials lasting several weeks have been conducted on ARTEC's pilot plant already and were proven to be highly successful with a variety of materials.

## FOCUS ON

Jamil Jorge in front of an extruder head hanging in the UNICOR technical centre

## South America – a market with great potential for corrugators

The Brazilian Jamil Jorge (40) is in charge of the highly competitive South American market as UNICOR's Area Sales Manager. He is ready today to answer imteam's questions.



*Jamil, you are native of Brazil and a passionate engineer. How did you end up at UNICOR?*

I completed my degree in mechanical engineering specialising in operation and manufacturing technology in Brazil, followed by an MBA in corporate management. After several positions as a sales representative and manager at various engineering companies in Brazil, Finland and Germany, I finally landed in the plastics industry, first with Drossbach and, since 2012, with UNICOR.

With UNICOR I found a company offering the best starting point for establishing "Made in Germany" corrugators in South and Latin America, based on quality machinery and innovative technologies, but also on their sound business model and clear structures. As a Brazilian and a graduate engineer I can successfully integrate myself here, with my skills, my market knowledge and my personal ambition to deliver only the best.

**Keyword South America:**  
*What is your impression of the current situation on the local corrugated pipe market and which potentials may UNICOR exploit?*

South America is a country rich with opportunities and its own unique dynamism. The market and its players demand stamina and a profound understanding of the unique needs and circumstances. South Americans are known to differ already in their mindset from Europeans or Asians, for example. UNICOR must approach the requirements of the local pipe manufacturers with patience and with individual products. Especially mid- and large-range pipe products for wastewater and sewer systems are currently in demand in the major South American countries. We are well positioned to satisfy these demands with our UC 500, FDC 800, UC 1200 and UC 1800 corrugators. Our Development department is facing challenges regarding the use of PVC materials in pipe production. PVC is primarily used in South America, whereas HDPE is in use in Europe and other parts of the world.

*You have been with UNICOR for well on one year. Where do you see UNICOR 10 years from now?*

UNICOR has the potential to be the first choice for corrugators in South America. Latin America is a strategic market and should be viewed in the longer term. The numbers of UNICOR corrugators commissioned in Latin and South America will steadily increase.

f.l.t.r. Shantanu Reinhold (Impact KEG); Wilfried Leitgeb (ICS Styria); Seema Bhardwaj (Rödl & Partner); Hans-Jörg Hörtnagl (Austrian Economic Chamber); S. E. Ramachandran Swaminathan (Indian Ambassador in Vienna); Raj Venugopal (GAW); Sigrid Tertinegg (GAW); Joseph Olimalayil (Indian Embassy); Thyago Ohana (Indian Embassy)

## GAW as Best Practice example at the Economic Forum in India

GAW took its first steps into India in 1984 already and was eager to share its experience in this market with the participants of the Economic Forum in India.



The Styrian Internationalisation Centre, together with the Indian Embassy, hosted the "India Economic Forum" in the Styrian Chamber of Commerce in mid-March.

Under the patronage of His Excellency the Indian Ambassador to Austria in Vienna, S.E. Ramachandran Swaminathan, interested companies were offered a day filled with exciting facts and information on the topic of "Business in India".

GAW, as a Best Practice example, was invited to report on its experience in market develop-

ment and also on handling of orders or projects in India. GAW gained their first foreign orders in the 60s already and such early globalisation facilitated its entry into the Indian market in 1984. Many paper and cardboard producers in India are since then relying on GAW know-how. Even Indian banknotes, among other, are produced with GAW technology.

The Indian market offers GAW many opportunities and has a high potential for growth, especially in the areas of coated paper and packaging cardboard.

## THOMAS – Guaranteed smooth transport processes

Good partners are essential to smooth global transport operations. Such partners are obviously hard to find and recognising arising opportunities for expansion of your network is therefore accordingly important: Spedition THOMAS thus in Spring joined the ATLAS International Network as well as the HEAVY LIFT GROUP.

**The ATLAS International Network**

The ATLAS International Network is an association of 220 freight forwarders in 96 countries. This network enables THOMAS to access reliable partners and their resources worldwide. The network guarantees the quality of its members, already reflected in the first enquiries and orders. To our customers this translates to an even better import and export service, irrespective whether further transport inland in the specific country, cus-

toms clearance or other issues of transport handling.

**THE HEAVY LIFT GROUP**

THE HEAVY LIFT GROUP (THLG) is somewhat more specialised, a smaller grouping of freight forwarders and carriers with the ability of handling very large transports. This is an association of project freight forwarders handling oversized goods and their transportation from A to B. Excellent experiences were gained in the course of various projects conducted in past collaborations with THLG members. After application and recommendations by other project freight forwarders, Spedition THOMAS was invited to the conference in Antwerp. THOMAS presented itself to the other members there to face their vote on its membership – with positive results.

THOMAS is expanding its shipping and transport network by its membership with ATLAS and the HEAVY LIFT GROUP.



To THOMAS, a number of new business opportunities were opened up by their membership and a commensurate added value to the customer is above all expected.

www.atlas-network.com  
www.theheavyliftgroup.com

## FOCUS ON

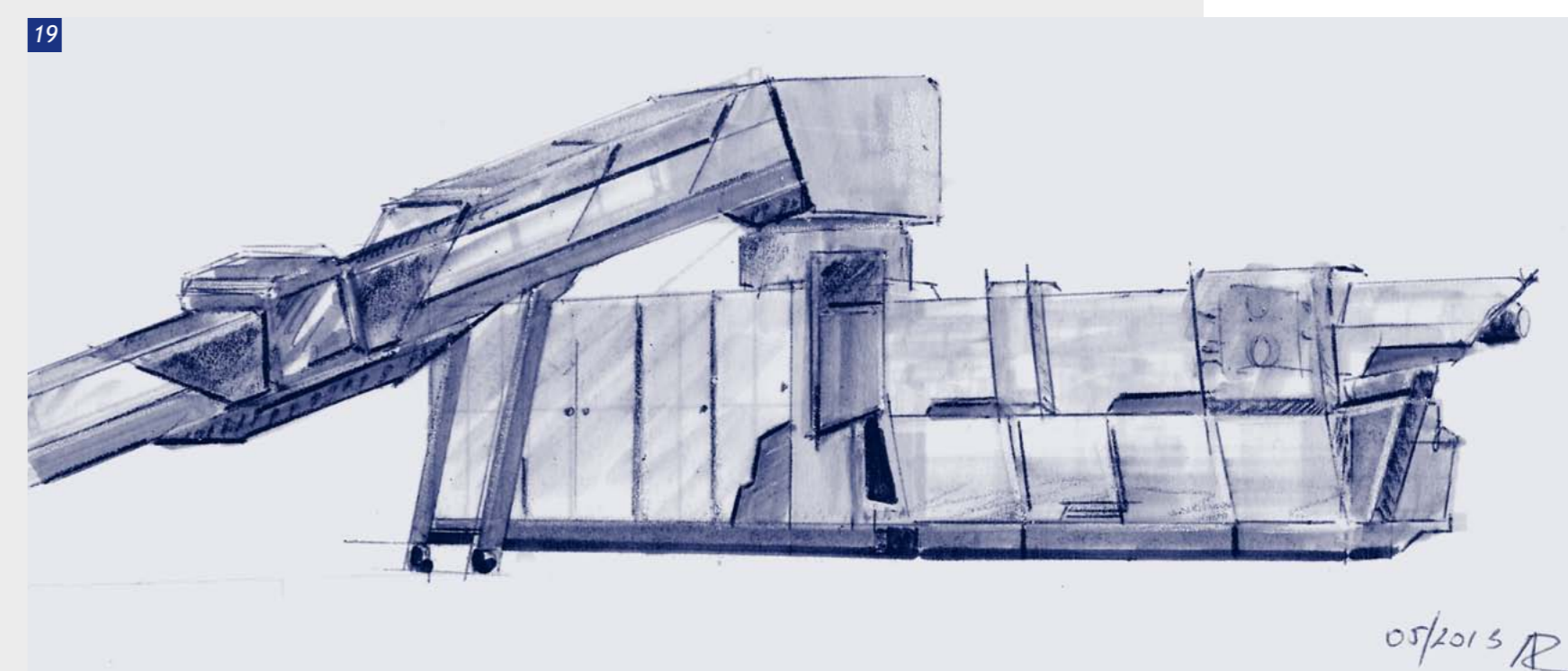
## ARTEC to present a new machine design at K 2013

The leading trade fair for the entire plastics industry worldwide will again take place in October and the Düsseldorf exhibition centre will be the hub of the plastic world.

For ARTEC also, "the K" is enormously important, which is why the company is dollying itself up for the show. Not only will technical innovations be introduced, but the machine's new design will be a focal point and eye-catcher.

Together with partners for corporate identity, exhibition stand and machine design, everyone is putting their shoulder to the wheel, eagerly looking forward to this tradefair as never before.

Learn more about the K in Issue 2/13!



ARTEC machine's new design

## Energy efficient dispersion – GAW lecture at the Paper Forum

The "Zukunft.Forum Papier" symposium took place in Graz from 15 to 16 May, 2013, and, as in every year, the European paper industry and related sectors met to attend lectures on various specialist topics and exchange experiences.

This year's theme "Water and Fibre – a sustainable connection" again attracted many guests, local and from abroad. Manfred Krammer and Christian Stine were also the focal point of attention with their lecture "Energy Efficient Dispersion and Dry Product Infeed for Pigment and Coating Colour Preparation", explaining how the GAW Combined Dispersing System (CDS) can, at constant high slurry stability, reduce both the dispersant quantity and save significant amounts of energy.

**Close cooperation with the University Institute for Paper, Pulp and Fibre Technology**

The organiser for the Paper symposium is the Academic Paper Engineering Society, located at the Technical University of Graz, with which the GAW in principle maintains close ties. In this respect, several employees are completing the "Paper and Pulp Technology" degree part time, whilst GAW also offers practical content by drafting or contributing study material for the "Coating Technology" lecture, among other. This collaboration thus underscores the excellent links between science and industry which render the Graz location so successful.

The Paper symposium in Graz has become THE meeting place for the paper and pulp industry in Europe, offering the participants top-class discussions on technology.



Manfred Krammer gives a lecture at the paper symposium in Graz

# GAW site development progressing rapidly

The move into the new building is planned for the summer months.

Ground was broken in September 2012 and one year later the new GAW headquarters in Graz should be ready for occupation.

New office furniture for an open plan design, communication areas and patios offer staff a modern and friendly working environment, creating adequate space for the company to increase the number of employees here.

Following completion of the new building, the existing building is scheduled for renovation and a start will be made with the new façade, integrating the decades-old building for not just aesthetic, but especially also for energy-efficiency reasons.

21 GAW Headquarter: the Construction progress



## People

### IMPRINT

**Publisher**  
GAWGROUP, GAW technologies GmbH,  
Puchstraße 76, 8020 Graz

**Pictures**  
Submitted by the individual companies

**Layout/Design/Editorial office**  
PICHLER-JESSENKO  
Mag. Alexandra Pichler-Jessenko  
Agency for Market Research and Communication

**Print**  
Print & Art Faksimile GmbH

Typographical and printing errors excepted

**Website:**  
<http://www.gaw.at/de/aktuelles/gaw-group-zeitung.html>  
<http://www.gaw.at/en/current/gaw-group-newspaper.html>



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GAWGROUP



**Jamil Jorge**  
UNICOR Area Sales Manager  
South America

Jamil Jorge has held the position of UNICOR Sales Manager for South America since 2012. Since the Brazilian-born mechanical engineer is familiar not only with the Latin American mindset but also with the Central and Northern European way of thinking, he is the ideal person for diligent management of inter-continental business. Read more about South America inside.

**Contact:**  
E-Mail: [jjorge@unicor.com](mailto:jjorge@unicor.com)  
Tel.: 0049(0) 9521/956 106



**Werner Gruber**  
GAW Supervisor

For nine months already, the Upper Austrian foreman Werner Gruber has been active on GAW construction sites globally. His many years of international experience as a site manager enabled Mr. Gruber to wrap up his first project in Germany already – to the complete satisfaction of the customer. At this point in time, he is on site in Russia.

**Contact:**  
E-Mail: [werner.gruber@gaw.at](mailto:werner.gruber@gaw.at)



**Alfred Grindling**  
ARTEC Workshops Management  
and Commissioning

Albert Grindling is an HTL (Technical School) Steyr graduate in Mechanical Engineering and has been with ARTEC since July 2007, responsible for workshops and associated laboratory and technical centres. He is also responsible for commissioning and service calls globally, with the opportunity in various positions to familiarise himself with individual business areas of the company. He also had the opportunity of gaining experience in the automotive industry before joining ARTEC.

**Contact:**  
E-Mail: [albert.grindling@artec.at](mailto:albert.grindling@artec.at)  
Tel.: 0043(0)676/88704 901  
Office: 0043(0)7228/6979-32