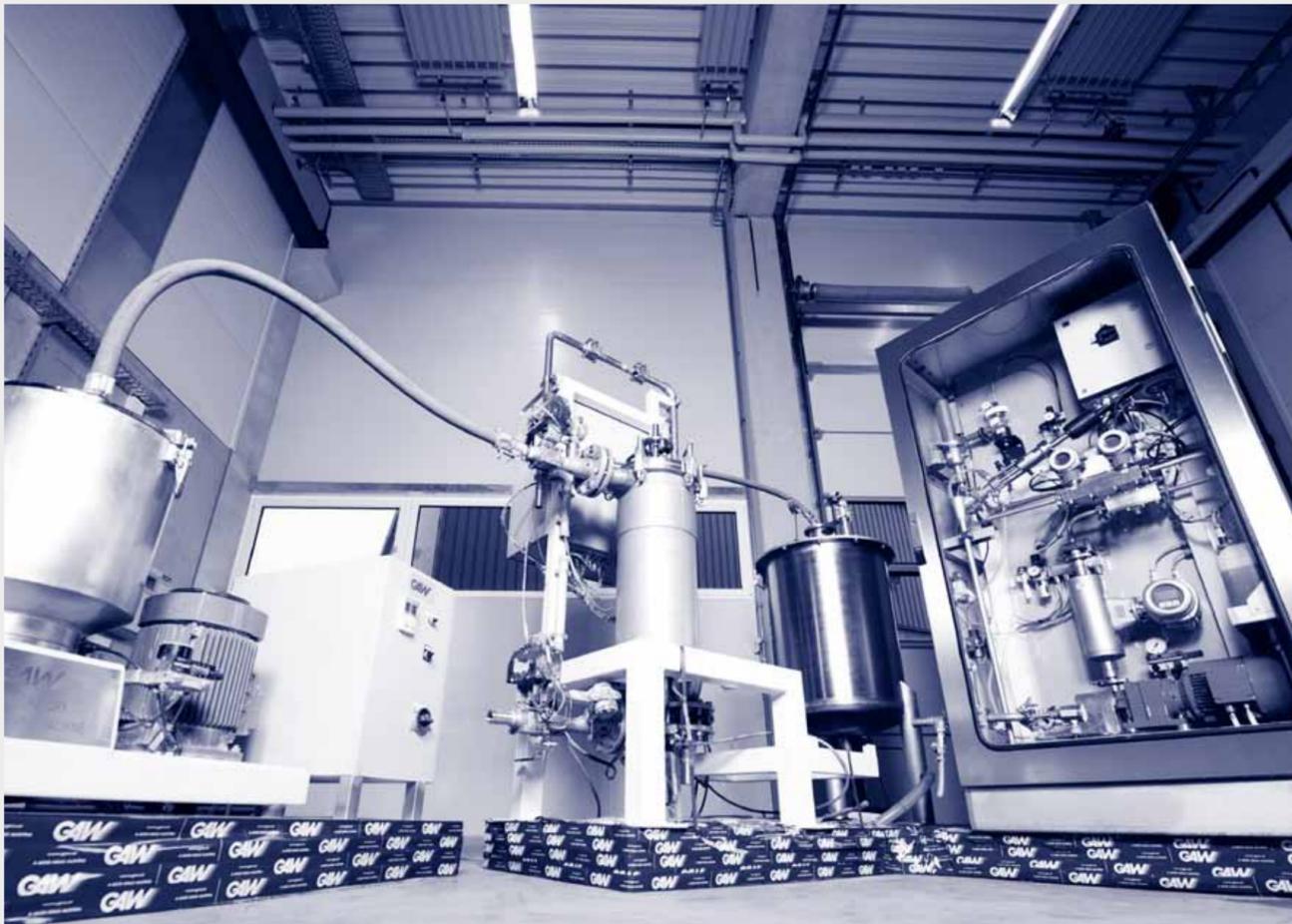




GAWGROUP

NEWS FROM THE GROUP imteam

The new GAW Technical Centre



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GAW

Ki KRESTA industries

osmo membrane systems

ARTEC

thomas

Issue 2 | 2011
limited edition

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Shortcuts

Plastic link conveyor for VWN Hanover

The GAW automotive team has been entrusted with a pilot project for Volkswagen commercial vehicles in Hanover since the beginning of October. A new central finishing area is to be made for the two vehicle types Amarok und T5. GAW will supply and commission materials handling technology consisting of a plastic, double-spur apron conveyor at 4 m wide with a loading and unloading ramp for the inspection of painted vehicles. The total periphery and a light tunnel built over the entire area – including steel construction, electrics and visualisation – are also to be supplied and assembled by GAW as the general contractor. Assembly will begin at the end of February 2012 and start of production is expected to take place at the end of March. VWN is also subsequently planning more installations of this nature.

GAW as specialist for forgery-proof banknote paper

GAW technology has been requested many times in the past for banknote paper manufacturing. Thus, in addition to the coating colour processing systems already in use around the world for special kinds of security paper, a few new systems are also in the making. Alongside 'bulk paper' manufacturing, coating colour processing systems are also used for special kinds of paper such as banknotes, which have to fulfil special requirements such as protection against forgery as well as extreme wear and tear. Banknote paper is generally manufactured using continuous current cylindrical sieve machines. One important component of the cylindrical sieve is the expansion cylinder, on which several sieves are fitted and clamped. Banknote paper machines usually have a maximum working width of 2,800 mm and a speed of 20 - 90 m/min.

Uruguay - successful base for KRESTA

As a follow-up order to the large Botnia project in Uruguay, KRESTA was again able to book in a project in the paper and pulp area. At present, KRESTA produces containers measuring up to 8.5 m in diameter and 62 m in length. Due to the magnitude and scope of delivery, the equipment is being delivered to Uruguay by ship in three different batches.

Editorial

216,000,000,000: in words, two hundred and sixteen billion euros – this is the total amount of debt as it stands in the Republic of Austria, and it is continuously rising.

The interest payments alone make up almost EUR 7.8 billion – but is it really that bad? After all, Austria has the lowest rate of unemployment in the EU, boasts an AAA rating in the government bond market and is actually one of the richest countries in the world. An ideal world! The fact, however, that the low unemployment rate is dearly bought by one of the highest early retirement rates, that the AAA only exists on paper (admittedly, the major agencies have issued Austria with a top credit rating, but on the markets, the country is no more than a second class borrower, as one can tell from the rapidly increasing premiums that Austria has to pay in order to find buyers for government bonds) and that its current wealth is based on a business at the expense of third parties – namely future generations – is blocked out. We can only hope that the generous patience with which the Austrians accept that the budget deficit has defied every boom for 40 years and the constantly rising mountain of debt, which politicians justify as a contribution to future security, will soon come to an end. Apparently things are still going too well for us, while virtually the whole of Europe is being shaken by riots caused by bare knuckle saving initiatives, people in lucky Austria can apparently still afford to strike for 5.5 percent higher wages – Oh, lucky Austria. Hopefully it isn't a mortgage on the future of our youth.

But now to the GAW Group: following GAW's 60th anniversary in June, we can look back with pride at a company that, after years of hard work, has successfully forged the path from simple manufacturing shop for stainless

steel containers and aggregates to top-quality, high-performance technology supplier. In autumn, KRESTA celebrated its 25th year and is today a very valuable member of our corporate group that knows how to make the most of its opportunities and still has a very promising future ahead. GAW involvement in India is showing equally positive development – 1.2 billion people live in the country and around 20 million more are added to this figure every year. And where people are, paper is needed. The paper industry is showing noticeable development and local experts anticipate growth rates on a scale of 25% for some varieties. However, we must not lose sight of the fact that the basic economic conditions have been obscured across the world again since the third quarter and forecasts concerning the future business development of our company are fraught with great uncertainty.

We do know, however, that we in the GAW Group have a sustainable product portfolio, sufficient liquidity and an efficient organisation with highly qualified employees. We are therefore perfectly prepared for upcoming challenges and may indeed view the coming years vigilantly but also, by way of contrast, very confidently at the same time.

With this in mind, it just remains for me to wish you lovely readers a very merry Christmas and all the best for 2012!

Mag. Jochen Pildner-Steinburg

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Editorialteam Issue 2 | 2011



COMPANY REPORT

¹ The International Institute for Management Development (IMD) is a private business school in Lausanne, Switzerland. It is one of three business schools in Switzerland certified by EQUIS (European Quality Improvement Systems).

¹ modular loop reactor

² BCT paste kneader

KRESTA acquires shares in Swiss company Buss ChemTech AG

As well as focussing on device, container and pipeline construction for both the paper and pulp industry and the renewable energies area, KRESTA has also successfully managed to expand its expertise in the strategically important business segment of the chemical industry over recent years. For instance, KRESTA subsidiary KRESTA Technology AG based in Zug, Switzerland, acquired 56 percent of shares in Buss ChemTech AG in Pratteln in the canton of Basel Country. The other 44 percent remains in Swiss hands.

The majority shareholding in Buss ChemTech AG, a global technology provider with around 60 employees working in the areas of reaction technology, fluorine chemistry and the mass production of anodes, has enabled KRESTA to expand its technology portfolio again, and has set the objective of developing the new site for the technology centre of the KRESTA Group.

In the new configuration, KRESTA now has even more capacity and clout when it comes to international competition. Combined with the other KRESTA Group sites in St. Andrä, Freiberg, Müh- lheim, Cologne and Ludwigshafen, the technological developments are being implemented into real projects and systems. One of the first systems for a Chinese customer is already under construction and is expected to be shipped by the end of the year.

The acquisition of the Swiss company has enabled KRESTA to extend its strong position in the chemical industry.

Switzerland: pacesetter and hub for all things innovation

In the eyes of the European Commission, no other European country measures up to Switzerland when it comes to innovative performance. The European Innovation Scoreboard commissioned by this committee measures the population's level of education, financial opportunities, patent applications, investments and the economic effects of innovations, and even ranks Switzerland above the Scandinavian countries. The highly-regarded ranking of the IMD¹, which measures the competitiveness of individual countries, also comes to the same conclusion, scoring Switzerland as the best European country.

In addition to the generally good basic economic conditions, the effective education and science system and the research and development achievements of companies are also primarily responsible for these top positions.



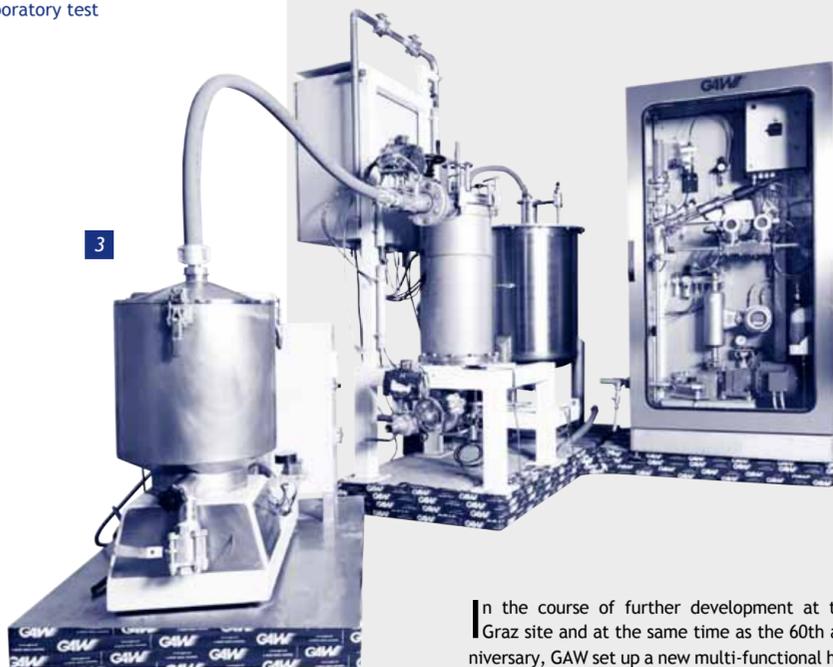
COMPETENCES

³ experimental setups

⁴ laboratory test

The new GAW Technical Centre

As well as a lab area, the centre also has an extended test room where customer applications can be individually examined.



In the course of further development at the Graz site and at the same time as the 60th anniversary, GAW set up a new multi-functional hall in which the new GAW Technical Centre is also housed. The technical centre is made available for future-oriented, internal development projects within the scope of GAW's core competencies of dispersing, mixing and filtration as well as for pilot trials and test series for new technologies and development projects both by and in collaboration with customers.

Equipped with various GAW testing machines and systems and the necessary infrastructure connections, the centre provides an extensive range of lab equipment to enable test results to be evaluated immediately.

Oliver Koroschetz and Christian Stine are in charge of the GAW Technical Centre.



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Patent issue for GAW dispersing system

Contributing towards the value enhancement of customers and helping them be successful in their markets by creating innovations and ensuring ongoing development has always formed part of GAW's principles. On 15 September 2011, the Austrian Patent Office issued GAW with patent number 509454 for one of these developments.

The object of the patent is the GAW CDS dispersing system, which is already much reported (see imteam issue 1/2010). The now patented concept is an enhancement of GAW's approved VST rotor/stator system (variable shear technology) for the dispersal of pigment slurries and coating colours, whereby it is possible to increase dispersal efficiency by dramatically reducing energy consumption.

The innovative dispersing device is also able to disperse products with a high solid content that were previously difficult to wet or disperse. For the user, this means even greater flexibility when it comes to preparing formulations as well as lower operating costs – firstly because of the energy saved during dispersal and secondly because of the subsequent production steps.



GAW supports one of the largest Chinese mining company with expansion

The Fushun Mining Group, founded over a century ago, is one of the largest mining companies in China. Its main products are coal, shale oil and mining machinery but it is also expanding into other business segments. Its investment in the construction of a paper machine, which was commissioned this autumn in the city of Fushun in the north-eastern province of Liaoning for the production of 60,000 tonnes of tissue paper every year, was the company's first step in the paper industry. The operating subsidiary has been named Hupo Paper.

300,000 tonnes of recycled corrugated cardboard every year

In addition to the tissue paper machine, another machine is also currently being set up for the production of 300,000 tonnes of recycled corrugated cardboard per year, for which GAW will supply the starch treatment units, work stations and processing systems for wet end chemicals. One of the main challenges with this project is the tight schedule with a delivery deadline of spring 2012.

Fushun Mining Group diversifies in pulp and paper at Fushun site.

Hupo Paper is a major part of the current regeneration and reconstruction taking place in the paper industry in north-east China, following its deterioration in the late nineties when, primarily because of outdated infrastructure, many major state paper factories lost their competitive viability and closed down. GAW is proud that its decades of experience in processing liquid and powder-based products for paper manufacturing has enabled it to acquire a new, aspiring paper producer as a customer with Hupo Paper.

GAW – contract from eastern China worth millions

Shandong Bohui Paper Industry and GAW have forged a very good partnership over the years, working on several projects. Now Shandong Bohui is erecting a new greenfield plant for cardboard production based on cellulose in the eastern Chinese port of Dafeng in the province of Jiangsu, north of Shanghai.

Major expansion of cardboard capacity

The new BM3 will mainly produce 750,000 tonnes of cardboard per year on a virgin fibre base weighing 315 g/m², making Bohui Paper one of the largest cardboard producers in China today. The working width will be 8.1 metres and the design speed more than 1,000 metres per minute. GAW was commissioned with supplying the coating colour preparation, processing for wet end chemicals, work stations and wet GCC units, as well as with the task of supervising the installation and putting the systems into operation. Delivery is scheduled for spring 2012.

Shandong Bohui Paper was founded in 1944 and now employs more than 5000 workers. The location of the new branch in Dafeng was chosen because of its excellent transport links – the port in Dafeng, which is close to Shanghai, has been expanded over recent years into an advanced transport hub for domestic and international trade and shipping routes. The cardboard produced will primarily be sold on the Chinese market.

Longstanding GAW customer Shandong Bohui Paper Industry will become one of the largest cardboard producers in China with the completion of its new cardboard plant.

5 GAW GCC plant



JK Paper – the Race is on

Corporate group JK Organisation, founded over 100 years ago, is one of the main players on the Indian market, with business segments ranging from the paper and pulp industry, to the cement, textile and rubber industry as well as the nutrition, health and cosmetics industry. With tyre manufacturer JK Tyre & Industries, the corporate group, which places the highest demands on quality, speed and environmental awareness, is also sole supplier of the "JK Racing Asia Series", the most important series for single-seated racing cars in Asia.

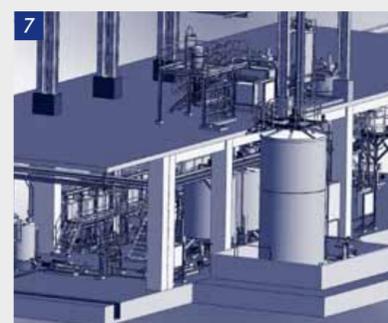
JK Paper expands capacity

JK Paper, India's largest manufacturer of branded papers and one of the leading producers in the fine paper and packaging segment, is investing in a new paper machine at its Rayagada site in the East Indian province of Orissa. GAW has been commissioned with supplying the complete processing systems for wet end chemicals, starch and coating colours.

The new machine, with a width of 5.29 m and a construction speed of 1,000 m/min, will provide an output of 190,000 tonnes of copier paper every year, with the coating colour treatment taking place in a continuous process. The continuous dispersal and treatment of suspensions or coating colours is advantageous because it enables both a quick change in formulation and the processing of shear-sensitive products.

With its expansive business policy, the JK Organisation is one of the most important corporate groups in India.

The value of the contract for the system is in the region of several million euros. Delivery is scheduled for the end of 2011 and commissioning for mid-2012. It is genuinely accepted that the high-powered cars from GAW and VOITH come out on top of the competition in their races and that it was possible to intensify the existing business relationship with JK Paper that was originally formed in 2005.



6 coating kitchen

7 coating kitchen

PROJECTS

8 paper mill Double A



Premium copier paper with GAW technology

Market presence still stable in Thailand with order from multi-national paper company Double A.

GAW managed to gain a foothold in Thailand as part of its plans to expand abroad in the early seventies and has executed several major projects over the past decades. With Advance Paper Mill 3, a subsidiary of Thai premium copier paper manufacturer Double A (1991) Public Company Ltd., it has been possible both to gain a new client and to maintain a stable market presence in Thailand as well.

Scope of delivery

Advance Paper has commissioned GAW technologies with the provision of a chemical additive system for the new PM 3 paper machine at the paper factory in Tha Toom in the province of Prachinburi, 120 kilometres east of Bangkok. In addition to providing the equipment,

the order also includes supervising the mechanical assembly, commissioning, training, implementation and FAT of the chemical and additive systems as well as a work station for the film sizer.

The PM 3 will demonstrate a capacity of 220,000 tonnes per year and a working speed of 1,300 metres per minute.

Delivery is scheduled for spring 2012 and commissioning for summer 2012.

GAW is confident that this project will enable the Group to win over Double A / Advance Paper Mill 3, one of the world's most advanced, fully integrated pulp and paper producers, as a long-term partner.

GAW system expertise for testliner production line

VOITH has commissioned GAW technologies with the provision of a starch preparation system and a work station for the PM5 SpeedSizer at Stora Enso Narew. This will be erected in Ostroleka, which is situated in the northeast of Poland approximately 120 km from Warsaw, by the Narew River.

The production line will produce 455,000 tonnes of testliner per year, and, with a sieve width of 8.6 m and a design speed of 1,800 m/min, will be designed for the production of lightweight testliner types (65-140 g/m²) in particular.

In partnership with Voith, GAW will appropriately implement Stora Enso's overall re-

source-saving concept, which is the focus of their investment. Delivery is scheduled for mid-2012.

Linerboard – testliner

Testliner is an extremely important raw material in today's corrugated cardboard industry. It is a double or multi-layer linerboard made from 100% waste paper.

Every paper factory formulates the raw material mixture and performs the manufacturing procedure based on their own experiences.

Low operating costs and a resource-sparing overall concept is the focus of Stora Enso's investment.

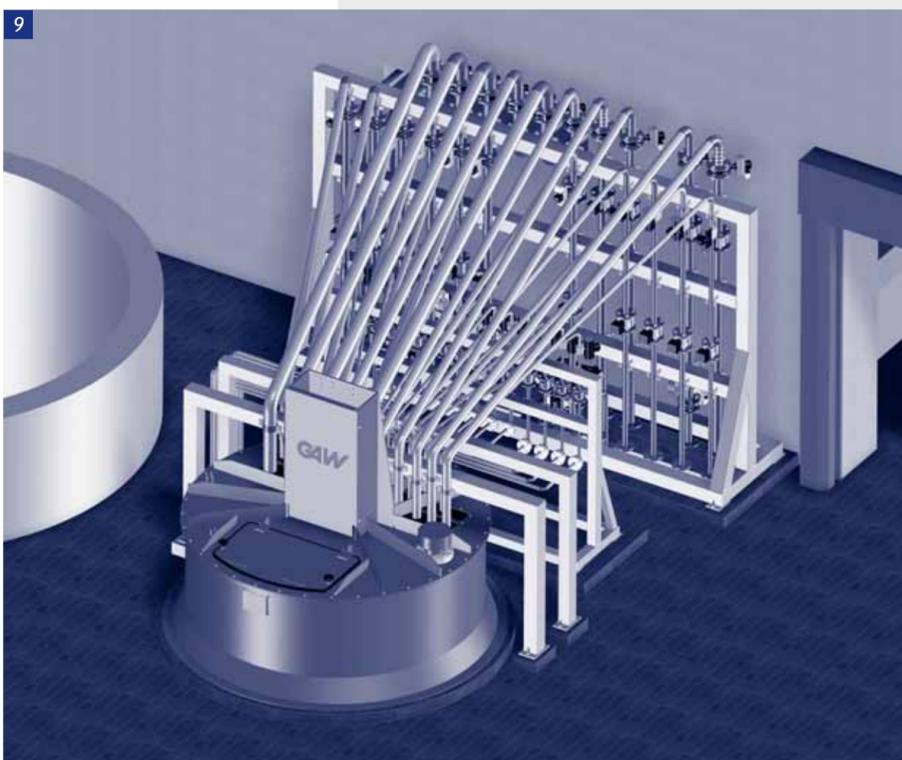
It is important that the testliner – in the form used for corrugated cardboard production – matches the kraftliner in virtually every strength value. Just the bursting strength values that the kraftliner produces can only be achieved with testliner if it is a few percent higher in surface weight.

Testliner has reached a volume of nearly 40% in corrugated cardboard production in Germany (as at: 2010). It is primarily produced in Germany and other European countries, and to a lesser extent, in the US as well.

9 dosing station for the dispersing machine

GAW – coating colour preparation for Sappi Alfeld

Sappi Alfeld has been placing its trust in GAW expertise for decades.



Sappi Alfeld and GAW have been trusting partners for decades, and in autumn of this year, the Graz plant construction firm was entrusted with yet another order.

Continuous enzymatic starch conversion with GAW plug flow system

The contract includes the coating colour preparation for Kady Mill 4, replacement of the automation system with automationX V4.8 and the provision of continuous enzymatic starch conversion with the approved GAW plug flow system, of which more than 100 units are in use worldwide.

Use of the plug flow converter for the enzymatic breakdown of starch is highly advantageous; firstly because it keeps the loss of wastewater to a minimum and secondly because it ensures there are no fluctuations in viscosity when the system is started up, in continuous operation or switched off.

One particular challenge with this project arises from the special installation situation. Due to the structural conditions and available space, the highest requirements are placed on prior planning.

Commissioning is scheduled for the end of 2011.

Alfeld – a site with tradition

The Alfeld site, south of Hanover, is able to look back on more than 300 years of tradition in paper production.

The Spies family paper mill was built in 1706.

In 1992, the Hanover paper factory Alfeld-Gronau AG was then integrated into the globally-operating Sappi Group (South African Pulp and Paper Industries) and in 1998 was renamed Sappi Alfeld.

Today, Sappi manufactures pulp, graphic paper and special papers both in its integrated pulp and paper factory in Alfeld and at two other sites in Germany.

GAW expertise in material handling technology for AUDI Neckarsulm

GAW commissioned with reconstruction of material handling systems for new AUDI RS 6.

As part of the expiration or rather the integration of the new range of models, AUDI AG has commissioned GAW technologies with the reconstruction of material handling systems for the production of the Audi RS 6 at the Neckarsulm plant, situated approximately 6 km North of Heilbronn. The Audi RS 6 is currently the highest performing Audi model; the first generation came onto the market back in 2002. The Audi RS 6 is available as a 4-door notchback limousine and as an estate.

The existing material handling technology primarily transports the mounting parts (doors and panels) of the new vehicle models from the production line to the gelling oven and then sends the doors for assembly at the automatic door attachment station (ATA). In future, doors will be attached at the ATA for a range of vehicle models.

Integration of the new model series requires the material handling technology, logistics and

system control units to be expanded and adapted. For production reasons, the project implementation schedule is very tight and should be complete by the second week of 2012.

Once again, Audi is counting on the expertise of the Graz plant engineering specialists within the remit of material handling technology. GAW is proud to be able to continue and strengthen this long-term partnership with Audi.

10



10 Audi RS 6

OSMO supplies lab system to Technical University of Vienna (TU Wien)

Membrane tests can be performed with minimum effort using the MemCell system.

Establishing a link between theory and practice relatively early on is very important in technical education institutions. It should therefore be ensured that trainees come into contact with the technologies they will face in their working life from the very beginning.

The Technical University of Vienna is placing its trust once more in the expertise of successful plant construction firm OSMO, awarding a contract for the supply of a MemCell system. This contract is one of a many deliveries made to various colleges and research institutions. Future users are thus able to come into contact with the OSMO systems at an early stage and the still 'relatively' new membrane technology can be more widely circulated. The MemCell, see also imteam issue 1/2009, is known as a test system for flat sheet membranes in which specific parameters are determined for the preparation of aqueous solutions using ultrafiltration, nanofiltration and reverse osmosis. In special cases, this system is designed for media with higher temperatures, making it possible to conduct trials with the recovery of lignin – a research area that is also of particular interest to OSMO.

11



11 Osmo Memcell

PROJECTS

OSMO successful in automotive segment



12 OSMO dialysis cells

13 OSMO tubular dialysis cells

13 A renowned automotive manufacturer has awarded OSMO the contract for replacing existing round dialysis cells used in the painting procedure.

Dialysis cells are regularly examined for wear and functionality in the electrocoating painting procedure. Defects or tubular anodes that are not working properly are rectified or replaced accordingly. A well-known automotive manufacturer has been choosing OSMO membrane systems for several years, due to their numerous advantages, and has been replacing the relevant faulty cells with OSMO cells ever since.

The procedure

During the electrocoating painting procedure, the object to be coated is dipped into a water-based paint and a DC voltage field is created between the paint and the counter electrodes. The voltage created triggers the chemical process, which leads to the formation of the paint layer and of disruptive ions in the paint bath. In order to maintain the quality of the paint, these must be removed. This calls for the use of dialysis cells, which are coated with an ion-selective membrane and fitted internally with the counter electrode to the dipped object. The round dialysis cell – also commonly referred to as tubular dialysis cell – is passed through by an anolyte, which collects the ions after the membrane is penetrated and removes them from the paint basin.

Benefits of OSMO cells

Quick fastener technology ensures ease of use

Excellent mechanical and chemical endurance limit

Optimum conduction of flow inside cells

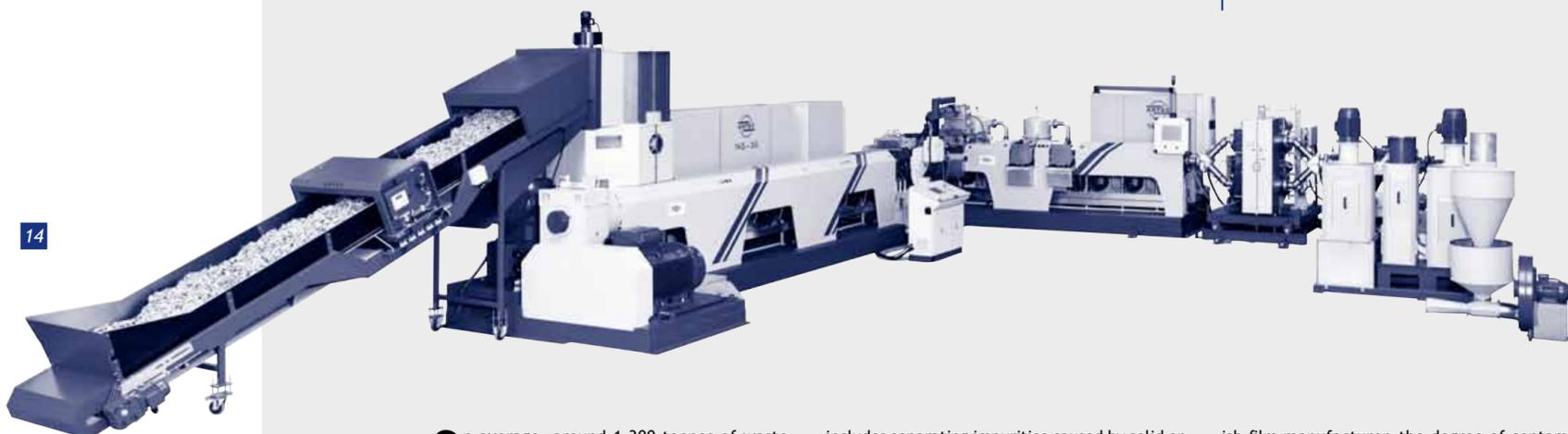
The process is carried out using titanium anodes, which, compared with the usual stainless steel anodes, have a longer lifetime. Due to many years of strong results, other leading automotive manufacturers are also now trailing the OSMO cells in their production processes.

14 The CASCADE system consists of two single-screw extruders working in succession and a degassing extruder.

15 The first part of CASCADE is the ARTEC extruder 145 with an L/D ratio of 38/1.

Major Polish film manufacturer opts for ARTEC recycling system

The capacity of the largest Polish film manufacturer of high-quality plastic pellets will double with the new ARTEC recycling system.



14

14 On average, around 1,300 tonnes of waste polythene film is processed every month by one of the largest Polish manufacturers of high-quality plastic pellets. In order to increase this capacity, another recycling system provided by Upper Austrian plant construction firm ARTEC shall be commissioned, which, with an hourly output of 1,000 kg, will virtually double the recycling capacity.

The process of recycling and treating used film for ready-made plastic pellets involves several stages. In addition to grinding, feeding, plasticising and pelletising the film, the process also

includes separating impurities caused by solid or fibrous materials, like cuttings, chipped wood, textile or paper fibres, as well as chemical components, e.g. printing ink. The systems designed for this are perfectly developed for the necessary sub-processes and the relevant equipment.

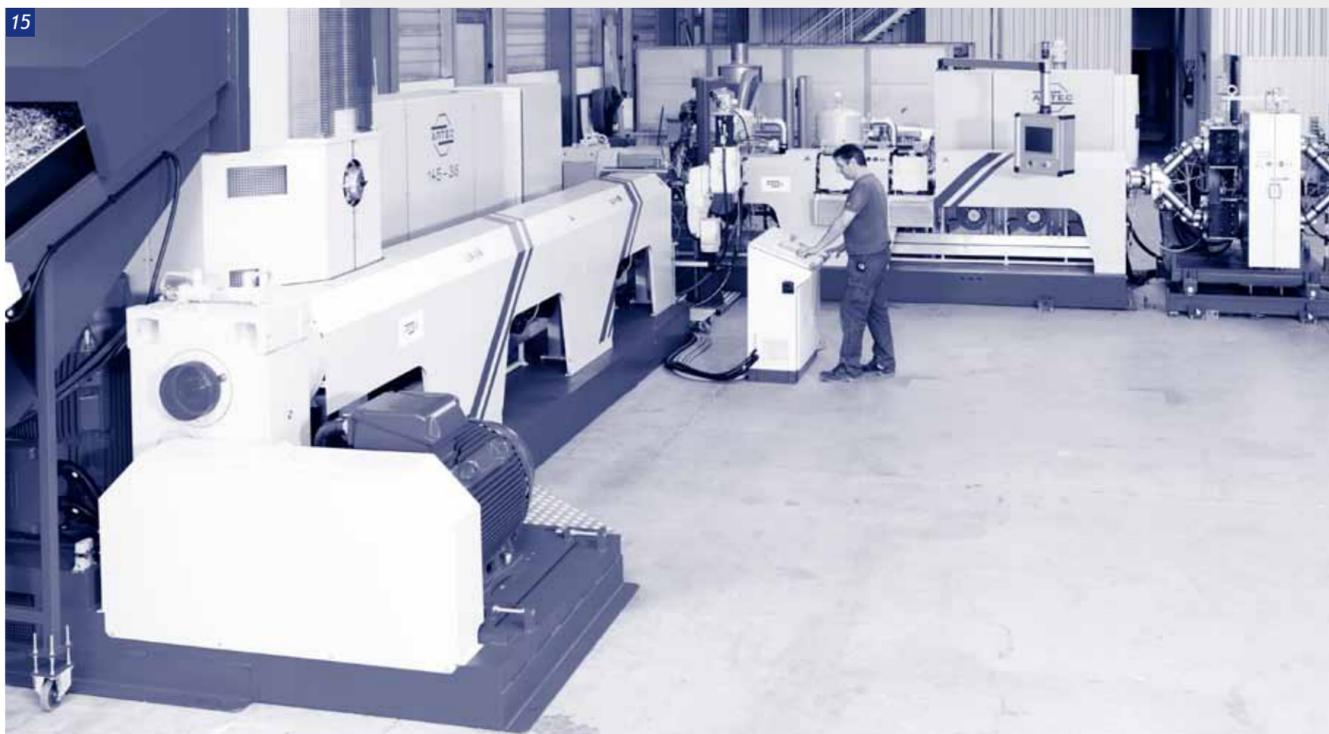
The ARTEC CASCADE

ARTEC has been producing efficient technologies for foil recycling since the company was first founded, and in doing so, has developed systems that are able to cope perfectly with heavily contaminated film qualities. However, for the actual order commissioned by the Pol-

ish film manufacturer, the degree of contamination is higher than in all systems previously built for this customer. The highlight of this system specification was that a very high volume of film flakes was to be processed on the basis of plastic carrier bags. A high content of printing ink, in addition to the usual level of contamination, is typical for this material quality. For this particular case, ARTEC had to combine its "CASCADE" system (fig.14) with highly effective, two-layer filtration and degassing technology and adjust to the required output of 1,000 kg/h.

System design

In the specific project, the CASCADE system consists of two single-screw extruders working in succession, an ARTEC 145-38 with an L/D ratio of 38/1 (fig.15) and a degassing extruder ARTEC 145 C with an L/D ratio of 25/1. The system is fed using an inclined belt conveyor with metal separator, which conveys into a centrifugal cutter compactor. Its rotating cutting plate reduces or homogenizes the various flake sizes and breaks up the particle agglomerations. The frictional heat generated as a by-product in this process, which ranges between 110°C to 130°C, enables the evaporation of most of the surface moisture on the flakes. Thus, as test results confirm, the delivery moisture is reduced from the original 10% to between 1 and 3%. By means of centrifugal force, the rotating material particles are fed from the cutter compactor straight into the feed zone of the plasticising extruder positioned directly adjacent. The material gently melts in this at a cylinder length of 38D (5,510 mm) and is effectively homogenised at the same time. In order to separate the bulk of impurities still contained, the molten material runs from the primary extruder to a continuously operating pre-filter system positioned directly adjacent. All 'hard' impurities with a diameter of more than 300 µm are separated here and guided out as a concentrate in a bypass filter. In addition to



15

hard materials such as metal, the majority of all fibres (paper, wood) can also be safely removed at this filter stage.

The purified polyolefin molten material flows from the primary filter via a molten material line into a vacuum chamber, which is located above the feed opening of the secondary extruder. The molten material line flows into the vacuum chamber onto a perforated plate where the melt flow is split into four hundred single strands (fig.16). This fragmentation in the vacuum environment enables the total volume of material to be continuously degassed. The individual molten material threads are still drawn into the vacuum chamber in the second extruder, then homogenised again and guided through a second degassing zone. Chemical impurities like printing ink, volatile additives or split-off monomers are isolated here. If required, the second degassing stage can also be extended to three zones.

The pre-filtered extrudate, which has been degassed several times, leaves the extrusion line and is then guided through a station for fine filtration. The newly developed ARTEC type 2 SF 900 BF piston filter will be used for this. Due to the extremely large dimensions of the filter surfaces, an ultra fine filtration down to a particle size of 150 µm is reached with this. The filtered molten material then goes through a hot-die regranulating system from which the granulate is conveyed to the storage silo using air. The residual heat in the polyolefin granulate ensures that no surface moisture condenses during the cooling process.

The whole system is centrally controlled and operated using the ARTEC system control unit (fig.18).



A regranulate quality can be produced from highly contaminated material using this system configuration, which is also suitable for ultra thin film up to wall thicknesses of just 60 µm.

Application expertise forms the basis for success

ARTEC systems have been used for film recycling by well-known clients for many years now. ARTEC Managing Director and Head of Technology Walter Hummel passes comment: "We primarily see ourselves as an application engineer,

system developer and plant construction firm and not as a manufacturing shop for machine components. It is part of our identity to develop the best system for the task at hand and to assemble it from the most effective components available on the market. What we always reserve the right to do, however, is to develop the system control unit and the process technology adapted to the case of application". Consequently it is the test and commissioning engineers who determine what happens in the ARTEC assembly hall.

16 The molten material line flows into the vacuum chamber onto a perforated plate where the melt flow is split into four hundred single strands.



17 After leaving the extrusion line the pre-filtered extrudate is guided through a station for fine filtration and then goes through a hot-die regranulating system.

18 The whole system is centrally controlled and operated using the ARTEC system control unit.

KRESTA awarded Carinthian coat of arms

In September, KRESTA invited its employees, their families, business partners and friends to a big ceremony to mark the occasion of its 25th anniversary. During the course of the celebrations, Ambassador of Carinthia and State Finance Official Harald Dobernik, shared his words of praise "We are proud to have a company like KRESTA in Carinthia. The development of the site in St. Andrä has always been of great importance to Franz Kreuzer, and with this, he has also developed his environment, the region and the state of Carinthia at the same time. It is important for the people in the region that the success of KRESTA has also led to many jobs," and awarded the company with the Carinthian coat of arms.

The initiative for the development of the KRESTA corporate academy was also emphasised in an especially positive way. The aim is to provide standard and advanced training for in-house trainees, skilled personnel and managerial staff in a targeted way and its concept is

intended to be offered to other companies in the Lavanttal region and beyond – an initiative which, during times when skilled workers are in such short supply, is highly important for a business location.

The contract manufacturer founded in 1986 has developed into an international plant construction group over the past 25 years. The customers originate from the paper and pulp, petrochemical and chemical industries as well as from the renewable energy, power station construction and environmental technology areas. Investments to the sum of EUR 12 million are planned at the St.Andrä site over the coming years, and the current team of 220 employees is expected to be increased by 70.

This makes KRESTA a very valuable member of the continuously growing, globally active GAW Group – imteam would like to extend its warm congratulations and wish them continued success for the future!

"Creating plants and values that are effective over several generations". This is the motto of the Carinthian corporate group.

FOCUS ON

- 19 f.l.t.r.:
 Dr. Wolfgang Sattler
 Mag. Sabrina Schütz-Oberländer
 Bgm. LAbg. Peter Stauber
 Erika Kreuzer
 Franz Kreuzer
 Mag. Hans Schönegger

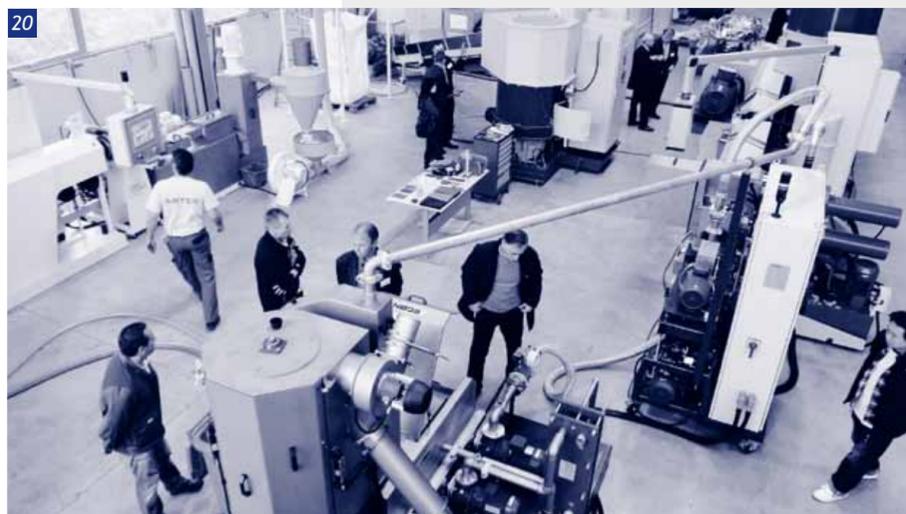


FOCUS ON

20 ARTEC-Technology Day

First recycling technology day at ARTEC

Five system examples gave customers and interested parties an insight into the scope of ARTEC recycling technology.



On 15 November 2011, the first recycling technology day and in-house exhibition by ARTEC took to the stage. Over 50 customers and interested parties from Europe, India, China and Japan accepted the invitation to Kematen an der Krems and were given a comprehensive overview of the possibilities available for the efficient recycling of the entire range of film qualities.

Focal point: The recycling of heavily contaminated post-consumer films

The particular highlight of the technology day was the ARTEC 145 CDV system, which is adapted in a customer-specific way to heavily contaminated post-consumer films (e.g. plastic carrier bags or agricultural film) with an hourly output of up to 1,000 kg. It consists of two 145 mm single-screw extruders working in succes-

sion. The first extruder melts and homogenises the film flakes and carries the polymer melt into a continuously operating filter system, which separates all particles with a diameter of more than 300 µm. Before the feed into the second extruder, there is an initial degassing zone; two others are positioned on the extruder itself. The pre-filtered extrudate, which has been degassed several times, is then guided through a station for fine filtration. The newly developed ARTEC type 2 SF 900 BF piston filter is used for this. Its large filter surface dimensions enable ultra fine filtration down to a particle size of 150 µm. A hot-die regranulating system and subsequent granulate storage facility complete the system.

The result at the end of the day was positive for both the visitors and the event organiser.

21 f.l.t.r.:
Mike Mulken (5th place),
Wolfgang Krenn (2nd place),
Jeroen Boelen (1st place),
Josef Benedseder (3rd place)
und Justin Morris (4th place)

22 across the Australian Outback

23 Toni Wachter / GAW

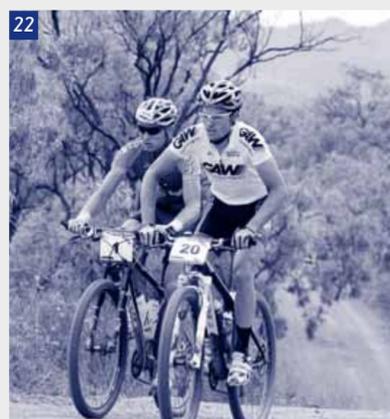
GAW attends Crocodile Trophy – in the thick of it instead of on the sidelines

GAW retiree Anton Wachter conquers the infamous mountain bike race in the Australian Outback at the age of 61.



The Crocodile Trophy organised by Gerhard Schönbacher and sponsored by GAW for many years was something quite special this year: For Anton Wachter – who after 42 years of service at GAW took well-earned retirement in spring of this year and who has been a passionate cyclist for decades – participating in the 1200-km mountain bike race through the rainforest and outback was a dream come true. Heavy rainfall at the beginning of the stage race made it very difficult for the ambitious biker to stay on the course, but he held on, even when the top-class riders left him far behind. From the get-go, the race promised to be a battle between Swiss champion Urs Huber, former Olympic winner Bart Brentjens and Belgian Mile Mulken. But, with a total of five stage wins, 33 year-old Jeroen Boelen from the Netherlands decided the outcome for them, with an hour's lead

on Austrian Wolfgang Krenn and Josef Benedseder sponsored by GAW.



People

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For better text readability simultaneous usage of female and male phrases was waived. The text/book aims at both sexes.

Subject to misprints



Johann Paunger
Supervisor & Start up engineer

Johann Paunger has been reinforcing the GAW technologies assembly team in the pulp and paper area since last year. His duties include site management, assembly supervision and commissioning at customers' sites. He also coordinates service calls and training. Mr Paunger has many years of professional experience in plant construction worldwide.

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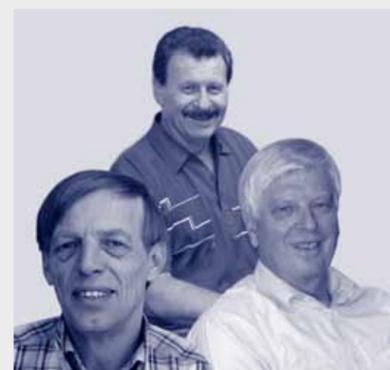


Günther Neuwirt
Project Manager

Günther Neuwirt is Project Manager at ARTEC and responsible for processing customer orders. In this capacity, he acts as the interface between the customers and the company. He also helps the Sales Division coordinate the correct system configuration. Mr Neuwirt is able to fall back on many years of experience in the machine, plant construction and plastic industries.

He is particularly committed to the continued development of recycling technology and the optimisation of plant designs.

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41-31-38

This illustrates the extent to which these three men, who entered their well-earned retirement in the second half of the year, have served our company. Carl Müller (pictured right) has been responsible for preparing the sales calculations of our plants for 31 years, Johannes Neumayer (left) has worked at GAW since 1973 and is well known as the contact for replacement parts and technical documentation and Franz Ettl spent 41 years fully committed to production. GAW would like to thank all three for their loyalty to the company over the decades and wish them happiness and health in their retirement.