

04/2018

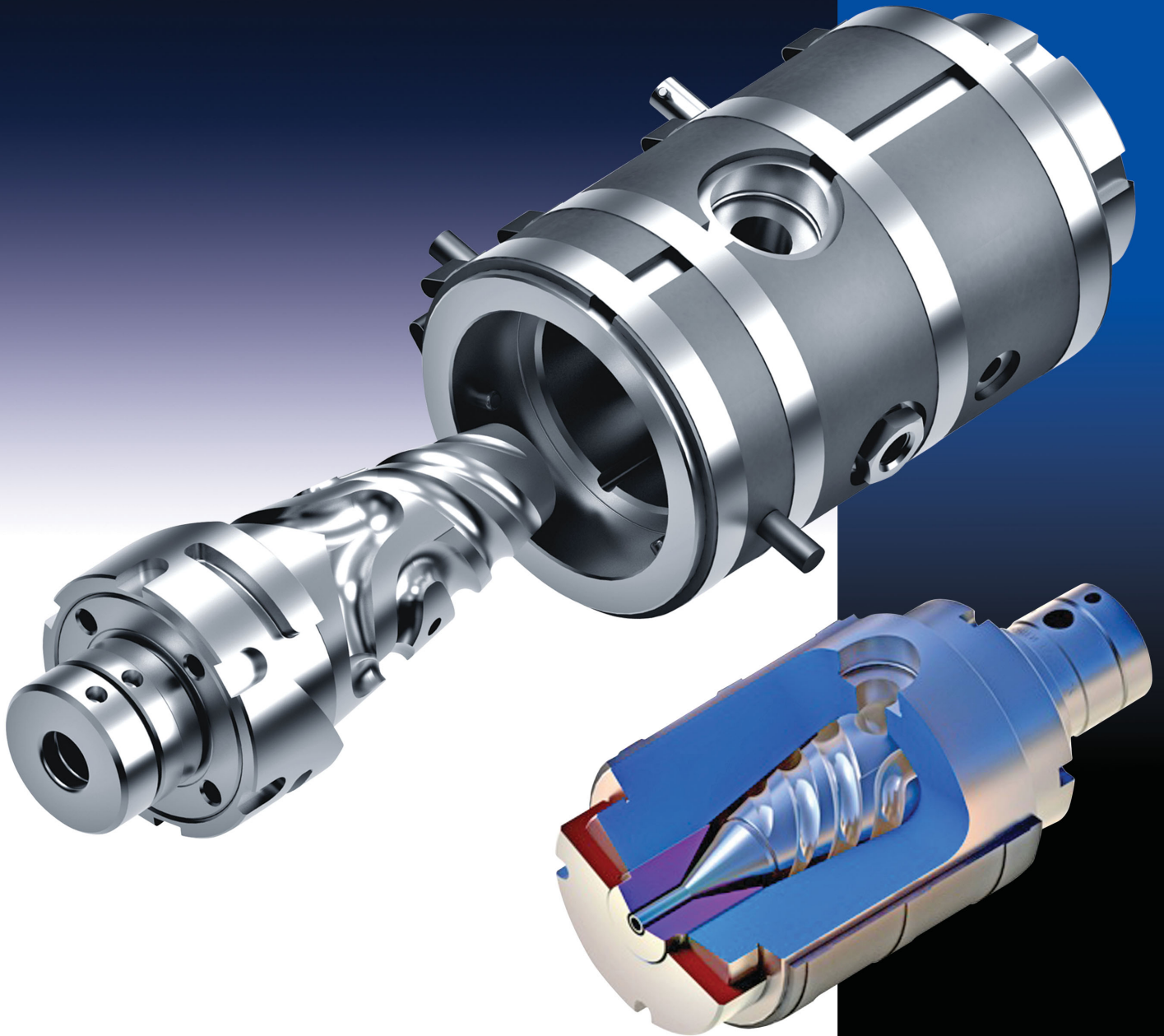
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# EXTRUSION

INTERNATIONAL

DIGITAL

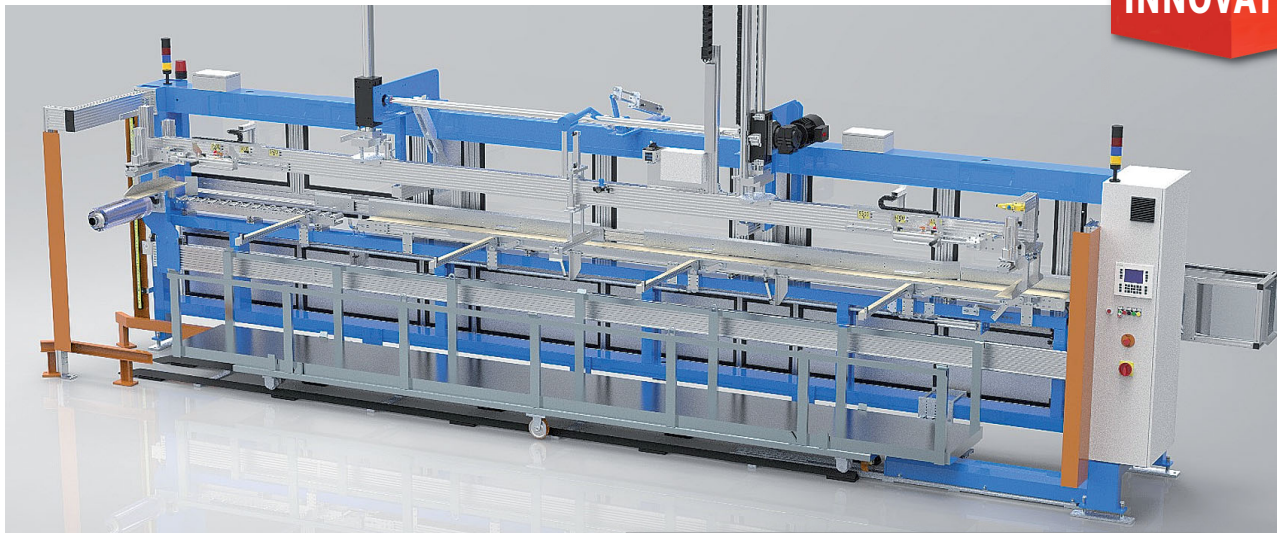


**Guill**  
EXTRUSION TOOLING

BULLET II

## Profile stacking machine PRO

INNOVATION



### Profile length measurement during extrusion

Using special sensors the length of individual profiles can be detected before the formation of a profile layer to stack. The measured length can be used for checking and correcting the cutting unit of the extrusion line or for documentation (quality assurance) of the produced profile lengths.

### Weight determination during extrusion

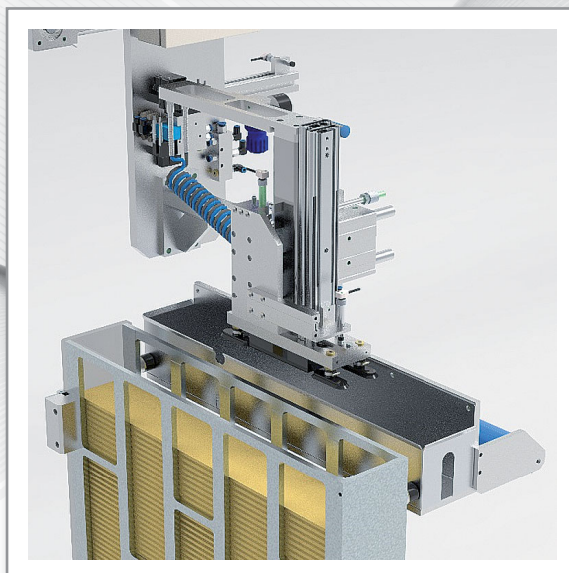
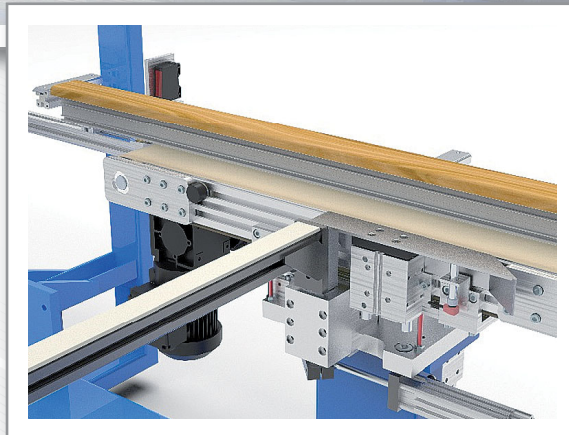
Special weighing units can be used to weigh individual profiles before forming a profile layer. The determined weight can be used to optimize the extrusion process.

### Paper / Foil or Strip laying

By a paper / foil laying unit the profile stacking machines are capable to provide a paper or foil layer between stacked profile layers.

**NEW:** Additional to this feature plastic strips for the further stabilization of the profile layers in the transportation cassette can be provided.

The strips are positioned by a special device in defined positions on the profile layer already stacked. The next profile layer will be stacked on these strips then.



### Laminating foil cutting unit

**INNOVATION**

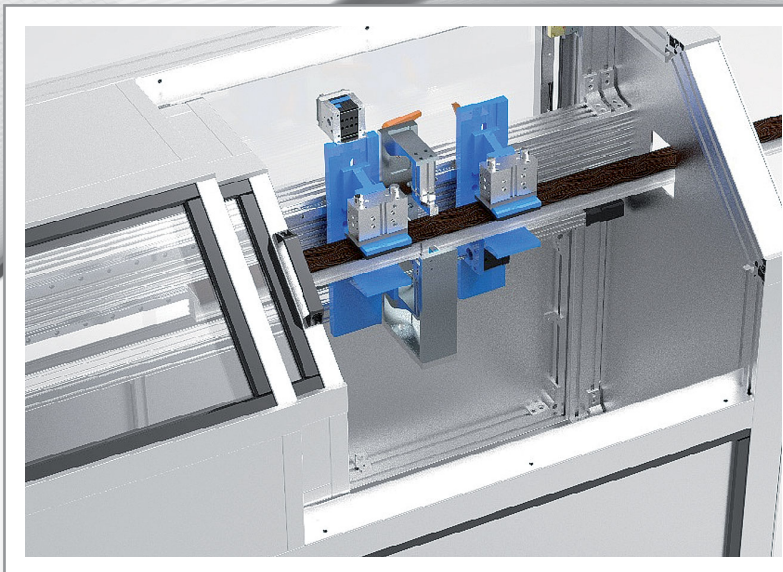


#### Foil cutting for laminating lines

For the offline lamination of profiles single profile sections are provided to the laminating line **end to end** and are laminated with foil continuously.

After the lamination process the laminating foil has to be cut to separate the profiles again.

The **laminating foil cutting unit** detects the profile ends, makes a gap in between the ends and cuts the laminating foil automatically.



#### Advantages of the laminating foil cutting unit

- No damage of the profiles when cutting the laminating foil.
- No interference of the cutting process into the laminating process.
- No danger to employees due to manual cutting.

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In September 2018 the world's first facility for POAL recycling will be in operation to produce Ecoallene. AMUT has fully developed this pioneering project together with the Italian start-up Ecoplasteam.

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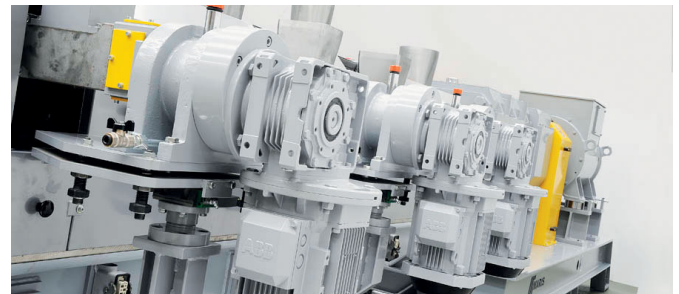


Cofit International presented an important innovation in the field of screen changers at Plast 2018, its most innovative model for recycling highly contaminated plastics.

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Trioplast France produces agricultural plastics films in Pouancé. The LDPE and LLDPE production and post used waste is recycled on two EREMA 1514 TVEplus® machines.

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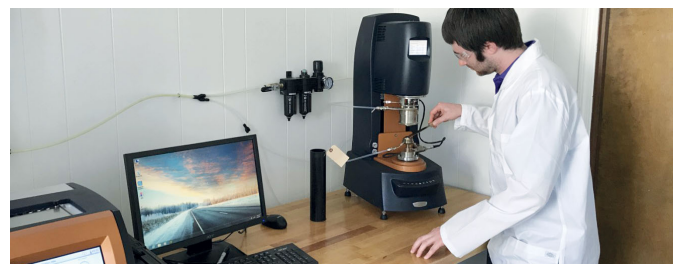


Regnanulation is the easiest way to recycle a polymeric material and, for that purpose, single-screw extruders are employed. However, when the aim is to provide an added value to the material or to preserve its fragile stability, the use of a co-rotating twin-screw extruder is mandatory.

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New brand application, made possible by higher light intensity, will be a welcome breakthrough at a time when demand for plastic bottles and trays is growing internationally. TOMRA Sorting Recycling has introduced a new technology called TOMRA SHARP EYE, which makes it possible to separate single-layer PET trays from PET bottles.

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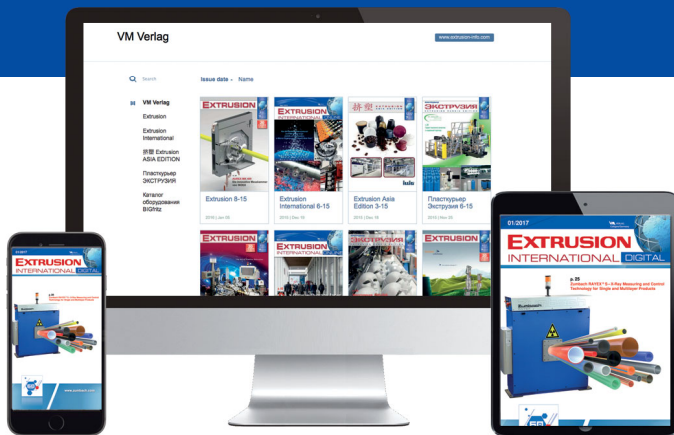
With the ability to test materials before they are extruded, Guill customers receive testing coupled with industry experience and shorter lead times. Guill Tool has opened an in-house rheology laboratory, making it the only extrusion tooling manufacturer in the industry with such a capability.

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[www.motan-colortronic.com](http://www.motan-colortronic.com)



#### 14th China International Recycled Polyester Conference & Exhibition

12. - 14. 09. 2018  
Shaoxing / P.R. China  
[www.polyester-technology.com](http://www.polyester-technology.com)

#### Colombia Plast 2018

24. - 28. 09. 2018  
Bogotá / Colombia  
Acoplasticos  
[www.colombiaplast.org](http://www.colombiaplast.org)

#### Plastic Packaging and the EU Plastics Strategy

25. 09. 2018  
Brussels / Belgium  
European Plastics Converters  
[www.plasticsconverters.eu](http://www.plasticsconverters.eu)

#### Powtech India

11. - 13. 10. 2018  
Mumbai / India  
NuernbergMesse India Pvt. Ltd.  
[powtechindia.com](http://powtechindia.com)

#### Fakuma 2018

16. - 20. 10. 2018  
Friedrichshafen / Germany  
P. E. Schall GmbH & Co. KG  
[www.fakuma-messe.de](http://www.fakuma-messe.de)

#### IPB China

17. - 19. 10. 2018  
Shanghai / P.R. China  
NuernbergMesse India Pvt. Ltd.  
[www.ipbexpo.com](http://www.ipbexpo.com)

#### SOLIDS Dortmund

07. - 08. 11. 2018  
Dortmund / Germany  
Easyfairs Deutschland GmbH  
[www.easyfairs.com/schuettgut-de](http://www.easyfairs.com/schuettgut-de)

#### Expo Plásticos

07. - 09. 11. 2018  
Guadalajara / Mexico  
Trade Show Factory  
<http://expoplasticos.com.mx/2018/en/>

## K 2019 on course for success



■ K 2019 is firmly set to repeat the vastly successful performance of K 2016. Now that the official registration deadline of the most important international trade show for the plastics and rubber industries has passed, it is obvious that the exhibition venue at Düsseldorf/Germany will be booked out from 16 until 23 October 2019, and K 2019, like its predecessors, will provide a strong impetus for future developments. In 2019, exhibitors innovations and many accompanying events will focus on the interconnection between the digital world, production processes and new product developments as well as on the promotion of the circular economy.

In 2019, about 3,000 exhibitors will again flock to Düsseldorf to attend their global flagship fair. Companies from all over the world have booked their booth, where they will present their latest products from any of the areas listed below:

- Raw materials and auxiliaries
- Semi-finished goods, technical components and reinforced plastic products
- Machines and equipment for the plastics and rubber industries

Werner M. Dornscheidt, CEO and President of Messe Düsseldorf, and his team are delighted that companies from the plastics and rubber segment have again selected the K trade show as their perfect platform for their corporate success: "One thing is already clear: K 2019 will again provide a comprehensive overview of the global market. Thanks to its unrivalled internationality, both in terms of exhibitors and visitors, and because it covers a unique product and service range, this triannual trade show has a special status among global trade shows and provides the perfect stage for pioneering presentations."

As the special status of K 2019 is reflected by the impressive feedback from the global industry, it also underlines this important role by addressing the most important issues that concern the industry. Therefore, the special show "Plastics shape the future" presents pioneering areas of application for polymer materials and takes a closer look at how these materials with their diverse properties are affecting modern environments. At the Science Campus, university and research organisations will present current activities and results – this is where research meets economy. Over the next few months, the Science Council and its sub-committees will define the key topics to be addressed by the special show and the Science Campus. They will focus on innovative materials and technologies with a substantial impact on global challenges such as water, energy and waste management, resource efficiency, digitization and sustainable development.

Additional events such as those presentations that focus on the training and development in the plastics and rubber industries or on the subject of additive production, are currently being prepared.

➔ Messe Düsseldorf GmbH  
[www.k-online.com](http://www.k-online.com)



but also guarantees end products with unique performance characteristics, such as **first-rate** patio boards. **WPC** is just like life. Saying **YES** is the beginning of a wonderful union. When plastic and natural fibres marry, the result is a **unique partnership**. WPC is a new material which is not only gentle on the environment, the result is **multiplied**. **Nature** naturally from **WEBER**. **Material properties** are clearly improved and the design options for classic timber products are

[hansweber.de](http://hansweber.de)

**WEBER**



DS 9

# WPC – extrusion

that connects

Not all countries or continents are alike. For this reason, WEBER have continually optimised WPC extrusion during recent years. This means that customers can combine classic plastic materials with natural fibres which are from their region and therefore cheaper.

Whether wood, sisal, hemp, coconut fibre or rice hulls – the result is always perfect.



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[extrudertechnologie.de/en/  
WPC](http://extrudertechnologie.de/en/WPC)

## Advantages

- // Low shear rates and moderate melt temperatures
- // Particularly suitable for sensitive materials such as WPC
- // High torque
- // Self-cleaning function, therefore close distribution of dwell
- // Processing of different material types (loose fibres, compounds, pellets, etc.)
- // High constant output across the entire speed range
- // Outgassing
- // Optimised wear protection

## First PHA platform World Congress

■ 4th - 5th of September 2018,  
Cologne, Germany

PHA (Poly-Hydroxy-Alkanoates) is a family of biobased polyesters. Just like many mammals, including humans, that hold energy reserves in the form of body fat there are also bacteria that hold intracellular energy reserves in form of polymers (polyhydroxy alkanoates). Here the micro-organisms store a particularly high level of energy reserves (up to 80% of their own body weight) for when their sources of nutrition become scarce. Examples for such Polyhydroxyalkanoates are PHB, PHV, PHBV, PHBH and many more. That's why we speak about the PHA platform.

This PHA-platform is made up of a large variety of bioplastics raw materials made from many different renewable resources. Depending on the type of PHA, they can be used for appli-

cations in films and rigid packaging, biomedical applications, automotive, consumer electronics, appliances, toys, glues, adhesives, paints, coatings, fibers for woven and non-woven and inks. So PHAs cover a broad range of properties and applications.

In about 30 high class presentations this congress will address the progress, challenges and market opportunities for the formation of this new polymer platform in the world. Every step in the value chain will be addressed. Raw materials, polymer manufacturing, compounding, polymer processing, applications, opportunities and end-of-life options will be discussed by parties active in each of these areas. Progress in underlying technology challenges will also be addressed.

► Polymedia Publisher GmbH  
[www.pha-world-congress.com](http://www.pha-world-congress.com)

## Good Mood, Rising Demand

■ Plastics are booming. But not only is demand on the rise, quality requirements specified for materials and processing are becoming stricter as well. The Fakuma international trade fair for plastics processing will present modern solutions for high-quality plastics processing in Friedrichshafen from the 16th through the 20th of October, 2018.

The mood amongst European manufacturers of plastics and rubber processing machines is excellent. Production has increased to an estimated €15.3 billion since 2009, which corresponds to 99% growth over the last eight years. In 2017, production output of the industry sector organised under the Euromap umbrella association experienced above average growth amounting to 7%. And thus it's no wonder that plastics processing companies are doing well, because plastics are not only being used in automotive and packaging technology more and more frequently, efficiently and diversely.

Simultaneously rising demand for better and better performance, as well as top quality, necessitates an unrelenting innovative spirit and new developments. Whether injection moulding, extrusion, thermoforming, foaming or 3D printing is involved – raw materi-

als producers, machine builders and manufacturers of precision parts will present all they have to offer in the way of innovation throughout the entire value chain at the exclusive industry meet. The trade fair with continuously growing international recognition is taken advantage of by numerous exhibitors in order to unveil their new products to a broad-based audience for the first time. There's no end in sight to the success of the industry sector (or Fakuma as its representative trade fair). Due to the persistently good order situation, Euromap is expecting turnover growth amounting to 2% this year. Propensity to invest in new machines and systems remains high, which is affecting lead-times for materials and machine. At the same time, steady growth is being impeded by the lack of qualified personnel. "This fact may well provide additional impetus for the automation solutions exhibited at Fakuma", surmises Fakuma project manager Annemarie Schur. Plastics are long since not just a German or European business factor. This is demonstrated by the expert visitors who have travelled from distant countries to attend the industry event in recent years. Expert visitors, specialists and decision-makers journeyed to the last event in 2017 from more than 120 countries. 48,375 expert visitors accepted the invitation of the roughly 1900 exhibitors to attend the event in Friedrichshafen on Lake Constance where Germany, Austria and Switzerland meet – and the numbers continue to rise. In addition to innumerable participants from Germany and elsewhere in Europe, above all the number of visitors from Asia is increasing. And the Asians are profiting from international growth of the industry sector as well. In particular Chinese competitors have become stronger according to Euromap. In 2017 they produced machines and systems valued at €11.1 billion – 180% more than in 2009.

► P. E. Schall GmbH & Co. KG  
[www.Fakuma-Messe.de](http://www.Fakuma-Messe.de)



## 22nd PETnology Conference

■ 26-27 November 2018, Paris, France

With the 22nd PETnology Conference PETnology is charting new waters in connection with All4Pack, the important international packaging trade fair. The decision to hold the conference in Paris underlines the event's increased internationalisation. All4Pack and PETnology Europe are particularly well matched in terms of their focus, with All4Pack's mission statements also playing a strong role in the PET process chain: packaging, printing, processing & handling solutions. In 2018, PETnology Europe will shine a light on technical and technological developments along the value chain for thermoformed and stretch blow moulded packaging systems. The latest developments in material, films, preforms, caps and closures, bottles and containers, labels, recycling etc. are a response to today's omnipresent market requirements, in particular circular economy, sustainability, digitisation and eco design.

Partnerships and networking is another focus of the conference: networking between industry, non-governmental organisations and social initiatives. With the help of digital



processes in particular, networking can accelerate the development of suitable and – above all – sustainable solutions. The benefits of networking will be in evidence at PETnology Europe 2018, which will highlight technologies and products that aim at conserving resources and producing environmentally friendly and sustainable PET packaging products. Rather than being incinerated and ending up in landfills, such products are recoverable and will be reused, because they make ideal recycling materials.

► PETnology/tecPET GmbH  
<http://www.petnology.com/competence-online.html>

## 'How to formulate plastics: understanding additives, fillers and fibers'

■ 20. and 21. November 2018,  
 Brussels, Belgium

Luis Roca, head of the Compounding Department of AIMPLAS, will be talking about additives, fillers and fibres and colouring plastics. This workshop is aimed mainly to R&D, quality control or another technical positions in companies (compounders and recycling, extrusion and injection moulding companies) and fillers/fibers/additive suppliers who are interested in strengthening their knowledge in the field of polymer modification. Thus, the workshop has several objectives: to learn more about the types of additives, fillers and fibres used in plastics, to identify the properties of plastic additives to obtain the desired properties in the final product, to prevent and solve problems related to additives, to improve product quality and finally to process and incorporate additives into polymers. Besides, the workshop will be structured in three main topics: additives, fillers and fibres and colouring plastics.



► AIMPLAS  
[www.aimplas.net](http://www.aimplas.net)

## Plastic Films Segment due to meet in Aachen, Germany

■ The Institute of Plastics Processing in Industry and the Skilled Crafts at RWTH Aachen University once again invites representatives of the plastic films segment to attend its conference entitled “Film extrusion – Trends in raw materials, processing and applications”, which will take place in Aachen on 20 - 21 November 2018. Experts from research and practice will discuss the latest developments in film production. The conference will be chaired by Dr. Volker Pfennig from Bischof + Klein Holding SE.

Regulatory requirements and matters of recycling and sustainability are moving more and more into the focus of attention for the films segment. The question of greater sustainability and material efficiency is affecting not only film manufacturers but also machine construction companies and material producers. To improve productivity, the choice of the right plant and machinery concept plays a key role, and increasing digitisation is of major importance for optimising operational processes.

The various papers and presentations at the conference will therefore be devoted to the following topics: Sustainability, productivity improvement & quality management, Industry 4.0 and general trends and challenges with packaging film.

Three presentations from IKV will deal with ongoing research in these fields. During the visit to the IKV pilot plant for extrusion and rubber technology, the delegates will be able to further discuss the various research topics.

The conference language is German.

*IKV pilot plant for extrusion: Student worker looks after the flat film unit (Photo: IKV/Fröls)*



■ Institut für Kunststoffverarbeitung (IKV)  
in Industrie und Handwerk an der RWTH Aachen  
[www.ikv-aachen.de/veranstaltungen](http://www.ikv-aachen.de/veranstaltungen)



PP Honeycomb Board Extrusion Line



Double Wall Corrugated Pipe Extrusion Line



SPC Calcium-plastic Environmental Floor Extrusion Line

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## Trade Fair Pairing: POWTECH India and IPB China

■ POWTECH India: Mumbai, 11-13 October 2018  
IPB China: Shanghai, 17-19 October 2018

In October this year, two POWTECH World trade fairs in India and China will once again offer excellent networking opportunities for manufacturers of process engineering machinery and plant. POWTECH India, the combined trade fair and congress, focuses on the latest innovations in the area of powder and bulk solids, and is a meeting place for experts and users throughout the Indian sub-continent. And the International Powder & Bulk Solids Processing Conference & Exhibition (IPB 2018) will open its doors in Shanghai. The supporting programme for IPB includes a Pharma Day and a seminar on "Materials for Additive Manufacturing". The two events are expected to attract more than 10,000 visitors in total.



*Trade fairs  
POWTECH World  
in India (picture)  
and China*

The POWTECH World trade fairs, POWTECH India and IPB China, focus on the entire range of powder and bulk solids processing and mechanical process engineering. For manufacturers of machines and plant for grinding, separating, mixing, transportation and storage of bulk solids, and for analysis and metrology, these events offer ideal access to the markets in India and Asia. For IPB 2018, organizer NürnbergMesse China expects about 200 exhibitors, about 40 percent coming from outside China – including many market and technology leaders.

POWTECH India: Three days of innovation and expertise POWTECH India, in Mumbai, is aimed mainly at trade visitors in the pharmaceutical and food sectors, as well as those from the chemical, cement, and building and non-metallic mineral industries. The event brings together leading providers in the area of mechanical process engineering from Germany, China, the UK, and many other countries, as well as leading Indian manufacturers. From 2018, the Indian event will be re-branded as POWTECH India, after previously being known as Powder & Bulk Solids India (PBSI). "The new name POWTECH India will give the global bulk solids community an even clearer impression of our event," says Chaitali Davangeri, Director, Projects POWTECH India at NürnbergMesse India.

■ NürnbergMesse GmbH  
[www.nuernbergmesse.de](http://www.nuernbergmesse.de)  
[powtechindia.com](http://powtechindia.com)  
[www.ipbexpo.com](http://www.ipbexpo.com)

## Tailor-made Filtration Solutions

■ Hexpol TPE is a globally operating and growing specialist in TPE compounding. The company stands for high product quality and customized compounds. Due to optimization efforts of the extrusion equipment and increasing production capacities of the German based subsidiary, Hexpol TPE GmbH chose Trendelkamp to supply tailor-made filtration equipment.

Trendelkamp Technologie GmbH is a medium sized company in private ownership that designs and manufactures tailor-made filtration systems, polymer valves, pellet classifiers, mixing silos and extruder degassing systems. Additionally, Trendelkamp also supplies complete systems including pelletizing solutions.

According to Dominik Fehn, Production Manager at Hexpol TPE GmbH, Trendelkamp was selected due to customization options of the Screen Changer as well as excellent communication and quick response times. Trendelkamp also equipped all extrusion lines with Pellet Classifiers.



Trendelkamp filtration systems are widely known for excellent heat insulation and rectangular breaker plates that save energy and also reduce pressure loss over the screen changer, respectively.

■ Trendelkamp Technologie GmbH  
[www.trendelkamp.com](http://www.trendelkamp.com)

## Largest ever China Pavilion at PLAST 2018

■ In recent years, economic and trade cooperation between China and Italy has grown deeper. According to the China Plastics Machinery Industry Association, plastics machinery exported to Europe from mainland China has been growing both in numbers and in value since 2015. In 2015, 44,681 units of Chinese plastics machinery valued at US\$203.12 million were exported to Europe. In 2016, the export volume increased to 127,399 units, and the value increased to US\$226.11 million. In 2017, the numbers further climbed to 288,217 units, amounting to US\$315.05 million.

The number and value of China's import of plastics machinery from Europe also showed a general uptrend. In 2015, China imported 2,062 units of machines from Europe with a total value of US\$602.68 million. In 2016 and 2017, the numbers of plastics machinery imported were 3,058 and 2,588 units respectively, and the values were respectively US\$551.51 million and US\$639.72 million. Imports from Italy alone has been going in a similar direction – from 233 units in 2015 at US\$73.52 million to 331 units at US\$79.18 million in 2017. These figures are demonstrative of the deepening in economic and trade cooperation between China and Europe.

Adsale Exhibition Services is the organizer of CHINAPLAS. Apart from organizing about 20 exhibitions in China every year, Adsale also proactively promotes China's enterprises and industry to the international market by organizing China pavilion in various shows overseas. After successfully organizing a China pavilion for Plastindia in February 2018, Adsale once again led Chinese enterprises to the international market at the end of May. As the agent of PLAST 2018 for China and Hong Kong region, Adsale organized the largest ever China Pavilion in PLAST 2018. 80 Chinese enterprises were invited to participate and the area of the pavilion reached 1,610 sqm. Compared to the last edition of PLAST in 2015,



Adsale brought 80 exhibitors to join PLAST 2018, organized the largest ever China Pavilion

the number of Chinese exhibitors increased by 57% and the area increased by 76%.

Ada Leung, General Manager of Adsale Exhibition Services, expresses her pleasure in seeing the close cooperation among the plastics industries in China, Italy, and other parts of Europe. She explains that cooperation between CHINAPLAS and PLAST has been long established. AMAPLAST, the organizer of PLAST, is also the organizer of the CHINAPLAS Italian Pavilion. At CHINAPLAS, the size of the Italian Pavilion has ranked the second among the European pavilions for many years, only after the German Pavilion. It is hoped that Adsale and AMAPLAST, can strengthen the bond and relationship, further promoting trade development of the Chinese and Italian plastics industry.

■ Adsale Exhibition Services Limited  
www.ChinaplasOnline.com

## Latest Technological Developments at Rubber Tech China

■ In 1892, the German engineer Paul Troester started building machines which could process unvulcanised rubber and guttapercha. 126 years later in 2018, TROESTER GmbH & Co. KG is well known as a reliable extrusion partner and source of know-how for all major tire companies,

as well as a favorite choice for medium-sized and local tire producers. TROESTER offers a wide range of standard and custom-designed systems related to tire profile manufacturing. Their innovative extrusion lines for tread, sidewall, innerliner, apex and



other profiles are also available as turn-key systems including downstream equipment and line control.

In China TROESTER is represented by TROESTER Machinery (Shanghai) Co., Ltd. which is responsible for the sales, after sales service but also for customized design and production in the domestic market. A team of specialists will be present at Rubber Tech China 2018 to explain the latest technological developments.

Rubber Tech China, Shanghai,  
19.09. - 21.09.2018,  
Booth No. 1A159, Hall 1A

■ TROESTER GmbH & Co. KG,  
TROESTER Machinery (Shanghai) Co., Ltd.  
www.troester.de

## Economical Extrusion and Strainer Solutions for Clean Processing of Rubber Cable Compounds

■ At Chinas International Wire & Cable Industry Trade Fair (26th to 29th September 2018, Shanghai), the German company UTH GmbH will be exhibiting its latest range of products. This includes both roll-ex® fine-mesh straining systems and roll-ex® gear pump technology. Hall W1 (German Pavilion) Booth No. G76.

With a focus on its unique gear pump technology for rubber cable extrusion and fine mesh straining technology, UTH will present its solutions for applications requiring a high level of availability, cost-efficiency and material-reduction. The processing of rubber cable compounds continuously presents the rubber industry with new challenges and tasks. The market demands highly cost-effective products of the highest quality. Accordingly, UTH has focussed on perfecting the manufacturing of rubber and silicone products.

With throughputs up to 10.000 kg/h UTH's roll-ex® gear extruder systems have set the benchmark worldwide for fine mesh straining of rubber compounds. Using either the compact two-roll feeder (TRF) or a conical twin screw feeder (DSE), the modular design of the roll-ex® system enables the integration of the strainer in each specific line design. Because of the flexible and compact design a seamless integration into existing lines is also possible.

*roll-ex® 220 TRF:  
Fine mesh straining  
of rubber cable  
compounds –  
throughput of up to  
2500 kg/h*



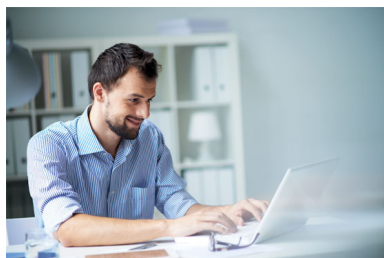
Precise and gentle extrusion is another main feature of roll-ex® gear extruders and gear pumps which have high working pressures of up to 800 bar. UTH can supply complete lines as a system solution for the manufacture of rubber-coated cables. Further information on the particular benefits and possible applications of roll-ex® technology is available at the booth or on the internet.

■ UTH GmbH  
[www.UTH-gmbh.com](http://www.UTH-gmbh.com)

## Exchange of used laboratory equipment

■ The Brabender Marketplace provides buyers and sellers of used laboratory equipment with a central trading platform.

Whether the customer is looking for an inexpensive, durable laboratory measuring device, or wants to sell used, premium quality piece of equipment. If so, the Brabender Marketplace, which is accommodated within the Brabender website, is exactly the right place for you to go. Used but fully functional laboratory measuring devices made by Brabender and other manufacturers can be bought and sold at the Brabender Marketplace where supply meets demand.



Sellers can post their offers for sale conveniently and free of charge. One-off registration for the sales section is all that's required. The data relating to the for-resale device can be entered quickly and easily. A short time later the "old" piece of equipment is listed at the Brabender Marketplace ready to be assessed. Interested buyers can get in contact via the platform. Brabender does not charge any intermediary's fees. Searching for potential buyers within this special target audience could not be any easier.

The Brabender Marketplace offers potential buyers of used equipment the perfect source of supply. A practical summary page gets potential buyers quickly up to speed on the offers available. If you find a suitable device, you can contact the seller direct using the form provided. Once you have successfully made contact, you can also conclude the purchase directly with the seller. You will not be charged anything for usage of or intermediation via the Brabender Marketplace.

More information: <https://bit.ly/2kOjTel>

■ Brabender® GmbH & Co. KG  
[www.brabender.com](http://www.brabender.com)



## Acquisition

■ Simplas and Greiner Extrusion Group are working together and are now cooperating in the area of tools for film and sheet extrusion. “We are convinced that two companies that can work together a lot have found each other here. The expansion of the portfolio and the pooling of strengths in internationalization support the ambitious growth targets of both companies”, says Axel Kühner, CEO of the Greiner Group.

Simplas, based in Northern Italy, is one of the leading suppliers of tools for plastic film and sheet extrusion, coating and adhesive application, with core competencies in development, design and process engineering. Greiner Extrusion Group is the world’s leading supplier of extrusion lines, tools and complete lines for profile extrusion and is now expanding Simplas’ range of services with its international production, service and sales locations. Michele Graglia, majority shareholder and president of Simplas is convinced that the partnership is “a constellation that promises success. With the international locations and the wide sales network of the Greiner Extrusion Group, we will be even closer to our clients and further expand our range of services”, Graglia con-



From the left: Michele Graglia (Majority owner and president of Simplas) and Gerhard Ohler (CEO of the Greiner Extrusion Group) (© Greiner Extrusion Group)

tinues. Gerhard Ohler, CEO of the Greiner Extrusion Group, sees Simplas as the ideal partner and he says with conviction: “As a technology company with five decades of experience, broad expertise and high reputation, Simplas is the ideal partner to successfully continue our growth course in extrusion tools.”

■ Greiner Group, Greiner Extrusion Group  
[www.greiner-extrusion-group.com](http://www.greiner-extrusion-group.com)  
[www.greiner.com](http://www.greiner.com)  
 Simplas S.p.A.  
[www.simplas.it](http://www.simplas.it)

## The Choice of Gravimetric or Volumetric

■ The SPECTROFLEX V from motan-colortronic is a modular, extremely flexible volumetric dosing system for powder, granules, pellets, regrind, flakes and fibres. The modular design enables optimized individual adaptation. With just a few hand movements, the dosing unit can easily be adapted to different material properties.

There is now a gravimetric dosing module available for the SPECTROFLEX V. It uses the same base and the same exchange modules as the SPECTROFLEX V and is also suitable for granules, regrind, powder and flakes. Depending on the feed material and the unit version, throughputs of 0.7 to over 3000 liters per hour are possible with small dosing toler-

The exchange modules of the SPECTROFLEX can be exchanged with just a few hand movements. (Image: motan group)



ances. Free-flowing and non-free-flowing materials can be dosed. Due to the same technical basis of the volumetric and gravimetric systems, little training is required for production or to switch between materials and the two dosing technologies. Thanks to the available exchange modules there is no cleaning time required for material changes and the changing of the set-up is quick and easy.

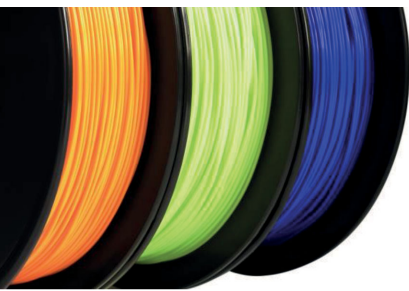
The gravimetric dosing unit is controlled via GRAVInet SF. This is a network-compatible control for up to two dosing modules. The precise DMS load cells are equipped with separate amps and CAN-bus interfaces – making them perfect for use in modern production environments.

■ motan Group  
[www.motan-colortronic.de](http://www.motan-colortronic.de)



The gravimetric dosing unit SPECTROFLEX G operates seamlessly with many components of the successful volumetric dosing system. (Image: motan group)

## New Product Range introduced



*With Skyplete, VELOX offers filament producers a unique range of 3D printing materials*

■ VELOX GmbH, one of Europe's leading solution providers of raw material specialities for the plastics, composites, additives and paint & coatings industries, and its long-term partner SK Chemicals Co., Ltd. (South Korea) are presenting Skyplete, a new plastics material range with some unique products for the 3D industry. VELOX has been chosen as distribution partner in Europe by SK Chemicals.

"We are excited to be working together with our long-term partner, VELOX, in developing the 3D printing industry in Europe. We believe that VELOX is the most suitable partner to meet our strategic objective to expand the market share in Europe because they have experience in 3D printing industry as well as technical knowledge on SK Chemicals products", commented Brian Oh, business development team leader at SK Chemicals.

"3D printing or additive manufacturing (AM) has become indispensable for design and manufacturing in different industries. Its widespread use is creating the need for specialised materials like the Skyplete range by SK Chemicals", says François Minec, General Manager at VELOX.

Specialities to be highlighted within the Skyplete products are e.g. the EN100, a PLA-based biodegradable type with a heat resistance (HDT) of 100°C, that is up to twice as high as the HDT of competitive products on the market. But also the Skyplete E-Series, bio-copolyester types with higher impact and temperature resistance than the widely used ABS and PLA materials, as well as copolyester types that combine the advantages of PLA and ABS – e. g. food approval, low-odour, easy to print on, good adhesion of the individual layers – are to be emphasised.

"The Skyplete range is one of the most innovative 3D printing materials in our portfolio and an excellent choice for filament manufacturers looking for enhancement of temperature resistance for easy-to-print materials and the refinement of common compounds to improve impact resistance and engineering performance", comments Manuel Delgado, 3D printing market manager at VELOX.

VELOX' target group for the new Skyplete range are filament producers and compounders looking for innovative and specialised 3D printing materials with a great range of properties. VELOX provides the new product range in all European countries.

■ VELOX GmbH  
www.velox.com

## Bioplastics Report

■ In a Plastics Market Watch report released – Watching: Bioplastics – the Plastics Industry Association (PLASTICS) reports bioplastics are in a growth cycle stage and will outpace the economy as a whole by attracting new investments and entrants into the sector and bringing new products and manufacturing technologies to make bioplastics more competitive and dynamic.

The report finds growing interest in bioplastics, but also a continued need for education. According to a survey PLASTICS conducted of U.S. consumers in January 2018, more consumers are "familiar" or "somewhat familiar" with bioplastics compared to a survey conducted just two years ago; 32 % of consumers are familiar with bioplastics in 2018 compared to only 27 % in 2016. The PLASTICS survey also indicated 64 % of consumers would prefer to buy a product made with bioplastics – and expect to see bioplastics in disposable plastic tableware, plastic bags, food and cosmetic packaging, and toys.

As bioplastics product applications continue to expand, the growth dynamics of the industry will continue to shift. Looking at industry studies on market segmentation, packaging is the largest segment of the market at 37 % followed by bottles at 32 %. Growth opportunities in bioplastics manufacturing are expected to continue from the demand and supply side. While in the past growth in bioplastics was primarily driven by higher petrol-based polymers, changes in

consumer behavior will be a significant factor for higher demand of bioplastics.

"Changes in U.S. tax policy, particularly the full expensing of capital expenditure, should support research and development in bioplastics. The overall low cost of energy in the U.S. complements nicely with research and development activities and manufacturing, which generates a stable supply of innovative bioplastic products," said Perc Pineda, PhD, chief economist at PLASTICS.

The research and partnerships with bioplastics is exemplified by the efforts to develop a 100 % biobased PET (Polyethylene Terephthalate) bottle. Most PET bottles currently have approximately 30 % biobased material, but a number of companies and collaborations are working to develop and launch, at commercial scale, a PET plastic bottle made from 100 % biobased material.

Despite the industry's embrace of bioplastics and their expanding presence in a wide range of products, PLASTICS' Pineda noted, "A high percentage of surveyed respondents believe they have not seen or used a product made from bioplastic - either biobased or biodegradable. Continuing to educate consumers on bioplastics would go a long way."

The report is available for download to members and non-members:

<https://plasticsindustry.imiscloud.com/ItemDetail?iProductCode=PMW009&Category=PUBLICATION>

■ Plastics Industry Association (PLASTICS)  
plasticsindustry.org

## Plastics Machinery Shipments increased

■ Plastics machinery shipments in North America rose in the first quarter of 2018 on a year-over-year basis according to the statistics compiled and reported by the Plastics Industry Association’s (PLASTICS) Committee on Equipment Statistics (CES). This is the fourth consecutive quarterly year-over-year increase in plastics machinery shipments.

The preliminary estimate of shipments of primary plastics equipment (injection molding and extrusion) for reporting companies totaled \$333.7 million in the first quarter. This was 15.1 percent higher than the total \$290.0 million in Q1 of 2017, but 11.7 percent lower than the \$378.0 million from Q4 of 2017.

“Shipments of plastics machinery tend to be lower in the first quarter relative to other quarters due to seasonality,” said PLASTICS Chief Economist Perc Pineda. “Still, the U.S. economy was off to a good start in the first quarter. Business confidence remains high – helped by corporate tax reform enacted last year. Plastics equipment shipments data are in sync with healthy corporate profits in the manufacturing sector, including the plastics industry.”

The shipments value of injection molding machinery increased 22.9 percent in Q1 compared to the fourth quarter of last year, while the shipments value of single-screw extruders declined 14.6 percent during the same period. The shipments value of twin-screw extruders – which in-

cludes both co-rotating and counter-rotating machines – decreased 27.1 percent.

The U.S. total export value for plastics machinery in the first quarter was \$404.0 million, a 7.7 percent decrease from the previous quarter (\$437.9 million), but a 6.9 percent increase from a year ago (\$377.7 million). Plastics machinery imports decreased 12.8 percent in the first quarter (\$829.7 million). From the first quarter of last year, machinery imports rose 5.7 percent (\$784.6 million). The U.S. continues to have a trade deficit in plastics machinery, which was \$425.7 million in the first quarter – a 17.0 percent decrease from the fourth quarter last year, but 4.6 percent higher than a year ago (\$406.9 million).

The respondents to the Q1 survey expect that construction, appliances and packaging will be strong end-markets in the next 12 months. Their market outlook remains stable, as more respondents noted that they expected market conditions to be unchanged for the year due to the fact that the U.S. economy is at full employment capacity.

■ The Plastics Industry Association (PLASTICS)  
[plasticsindustry.org](http://plasticsindustry.org)

## 250th VAREX II goes to Canada

■ Two milestones were reached when Laval, Canada-based Pro-Pals Industries Ltd. ordered a VAREX II. For Pro-Pals, this milestone was the company’s start in blown film extrusion

and for W&H it marked the construction of the 250th VAREX II line, which was launched at K 2013.

In Pro-Pals’ 40 year history, the company has specialized in printing and converting and purchased film from outside suppliers. Going forward, about 80% of film will be manufactured in house allowing the company to control the entire production process and pass this added value on to customers.

While expanding their facility to accommodate the new machinery, Pro-Pals sent its extrusion team to the W&H Technical Center in Lengerich for trials and to work on formulations. “Being able to use the lab is a unique service and was a real advantage for us. The training itself was a good mix of theory and practice that we found very useful,” said Pro-Pals Vicepresident Lucio Casale, Jr.

■ WINDMÖLLER & HÖLSCHER KG  
[www.wuh-group.com](http://www.wuh-group.com)



## First Plant for the Recovery of Food Packaging Waste

■ In September 2018 the world's first facility for POAL recycling will be in operation to produce Ecoallene. POAL is a polyethylene + aluminium polycomposite recovered from food packaging (commonly known as TetraPak, the name of the company that patented it). Ecoallene is a new green material whose main feature is to be ever recyclable. It is also easy to colour and contains some aluminium particles that make it slightly glittered. The main application fields are: automotive, building, giftware and general tools.

AMUT, involved since the 80s in the engineering and manufacturing of technologies to process and recovery plastic materials, has fully developed this pioneering project together with the Italian start-up Ecoplasteam. Ecoplasteam can thus recycle 7.000 tons of waste coming from this particular packaging disposal, mainly from the polycomposite part (up to now only cellulose can be recovered).

AMUT has carried out both technology for POAL treatment and washing and the extrusion line to turn the final material into pellets.

The two companies have been able to sort out the complex issue of disposing most of this material waste: a process that has always caused problems and high management costs to landfills and incinerators. With this new plant branded AMUT, also this fraction of material, usually not recovered, will be transferred to Ecoplasteam facility to become Ecoallene after a proper treatment.



AMUT Turbo Washer

### Functioning of the plant:

The input material, in form of commingled bales, comes from the paper mill after undergoing to a process for TetraPak cellulose recovery. The material is processed and treated through progressive phases and washed with a series of equipment in order to reduce the presence of paper fibers. Once the material is clean, it is mixed by a gravimetric dosing system, filtrated, granulated by the extrusion line and finally put in big bags.

Ecoallene becomes a raw material to be extruded or injection moulded like a standard polymer. It can be coloured and additivated for different applications.

■ AMUT Group  
www.amutgroup.com

## Newly Designed, Information-packed Website

■ Guill Tool & Engineering just rolled out a new website. The new site offers a detailed look at the company's entire product line, which offers a wide-range of standard and custom designed extrusion tooling,

including crossheads, in-line heads, rotary heads and extrusion tips & dies.

The site includes a full listing of all product and specifications with calculation tools to compute annual cost of lengthy concentricity adjustments and crosshead replacement analysis, plus calculators to compute draw-down, feet per minute and pounds per hour. The website includes charts and tables with detailed data and a full library of downloadable literature organized by industry. Guill markets its equipment worldwide and is currently seeking new representatives in select countries.

The Guill website is mobile phone friendly and offers the convenience of allowing users to request a quote online.

The new website has already been awarded the 2018 American Web Design Award from Graphic Design USA.

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ISO 9001:2015 ISO 14001:2015 Guill DEFENSE

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Guill

Single Point  
Concentricity  
Adjustment  
FEATURE

Innovation Materials Testing ROI Engineering Quality

**Extrusion Tooling... on the Leading Edge of Technology**  
**America's Most Innovative Extrusion Tooling Designer & Manufacturer**

Guill is the Leading Extrusion Tooling Designer & Manufacturer with over 50 years of experience. Our engineers design custom plastic extrusion tooling using the latest technology. In addition, we draw on our years of experience to help you develop solutions that increase efficiency and decrease your production cost, resulting in an excellent end product.

■ Guill Tool & Engineering  
www.guill.com

## Italian Manufacturers of Plastics and Rubber Processing Machinery

■ The Statistical Studies Centre of Amaplast (Italian trade association, member of CONFINDUSTRIA, bringing together about 170 manufacturers of plastics and rubber processing machinery, equipment and moulds) has analysed foreign trade data published by ISTAT for the first quarter of 2018.

A comparison with the same period in 2017 reveals growth of 26% in imports and a contraction of approximately one percentage point in exports. This provides indications of two important factors. Significant and constant growth in purchases abroad, suggesting sustained recovery in the domestic market, as already seen in the impressive positive results at year-end 2017. As underscored by Amaplast President Alessandro Grassi at the Members Assembly on 14 June in Linz, Austria, "It is a fact that the propensity to invest among Italian converters is back on a positive growth trend and we can only be happy about this."

The slowdown in exports should not come as a surprise and may be considered to fall within a normal range of variation. After the first two months of continued positive growth, the slowdown in March was almost to be expected, heralded also by decreases in orders as reported by members in the last weeks of the period.

It is clearly premature to be talking about a decline, even though we must acknowledge that the sector has witnessed continuous posi-

tive growth for at least seven or eight years (with the exception of a brief dip in 2013) and thus, given the inherent cyclical nature of the economy, a negative phase would be entirely within the norm in the medium or even short term.

The mid-June Amaplast member survey comparing the current half year with the same period in 2017 revealed that more than half (51%) forecast stable turnover and a significant portion (38%) foresee improvement. As regards orders, 42% of members forecast substantial stability while 41% expect to see increases.

After an excellent 2017, with double-digit growth in all indicators, it is still not unreasonable to expect the current year to close out with positive performance both in production and in foreign trade, albeit at a more modest growth rate as compared with recent years.

► Amaplast  
www.amaplast.org



Alessandro Grassi

## The Future of Plastics

■ Bandera supports the production model based on technical materials from natural sources and on materials that can be re-integrated into the environment: R&D activities, dedicated workshops, along with a cutting edge, industrialscale extrusion line specifically manufactured to test the materials of the future.

Costruzioni Meccaniche Luigi Bandera realistically shows the whole sector that the use of sustainable raw materials is a viable solution. The use of plastics, an essential component of our contemporary economy, has increased twenty times over the past fifty years and a growing trend of double that quantity is the forecast for the next twenty years. The concern grows for sustainability for the forecast for the next twenty years. The concern grows for sustainability for the industries of the plastics sector, not only from the undeniably important ethical aspect, but also from the practical aspect of sustainability of the plastics sector itself. In fact, 15% of plastic packaging materials are recycled worldwide, versus the well over 35% of European countries.

The recent G7 Meeting in Canada focused on this issue from several different facets. Specifically speaking, they set to reach by 2030 the objective to recycle and reuse 55% of the plastic packaging materials produced.

Even more so, this percentage is subject to grow by 2040, by which time they foresee to reclaim 100% of all plastics produced. Con-

versely, on the side of research, innovation and new technologies, they committed to develop alternative solutions to cut down the environmental impact of plastics.

From this very concern stems Bandera's will to manifest the attitudes that have always characterized its actions, so much so for them to become a mission in time.

In fact, this company oriented towards innovation and sustainability of both processes and materials, has chosen to exteriorize this mission with its new communication campaign, PACKAGING FORWARD, focused exclusively on developing consciousness over the issue of the circular economy of plastic materials.

Innovation as an operating principle is the key of success for this company, known for its great tradition, operating in the sector of plastics for over 70 years to present.

Bandera has always manifested a very strong pioneering attitude, operating in favor of transforming biodegradable or recycled materials and striving to achieve always more lightweight packaging products. Bandera has designed and is manufacturing an industrial scale extrusion line – to be made available to packaging material manufacturers – dedicated to exploring and studying the productive capabilities of both, biological and recycled materials. This line will be operating, as of September 2018, at the Bandera R&D Centre so Bandera's efforts have gone well beyond laboratory studies.

► Luigi Bandera S.p.A.  
www.lbandera.com

## Acquisition



Vector & Operator

■ Davis-Standard, LLC announced that it has acquired Brampton Engineering of Brampton, Ontario. Brampton Engineering, LLC is the leading provider of multi-layer

AeroFrost® air blown and AquaFrost® water quenched film systems, film winding and many other film production solutions.

“We are pleased to welcome Brampton Engineering with their globally recognized blown film technology to our team,” said Jim Murphy, Davis-Standard President and CEO. He added: “Brampton Engineering’s focus on customer support, technology and its employees align well with the values of Davis-Standard.”

Gary Hughes, CEO of Brampton Engineering, remarked on teaming with Davis-Standard, “Davis-Standard is a global leader in plastic extrusion technology and we are proud to join their team. Davis-Standard brings resources and support to our business to better serve our customers worldwide and we are excited about the solutions we can present together.”

■ Davis-Standard, LLC  
[www.davis-standard.com](http://www.davis-standard.com)  
 Brampton Engineering, LLC  
[www.be-ca.com](http://www.be-ca.com)

## Groundbreaking Ceremony for new Plant in Russia

■ The Austrian based Gabriel-Chemie Group has been operating successfully with its own subsidiary in Russia since 2007. Due to the steadily growing business and the increasing demand for masterbatch in Russia and the neighbouring countries as Belarus, Kazakhstan and Azerbaijan, it became necessary to adjust the production capacity of Gabriel-Chemie Russia to the future requirements.

On a 27,500-square-meter ground in the Vorsino industrial park, a modern masterbatch production facility is to be built in four construction phases. The 2,000-hectare industrial park Vorsino is about 90 kilometres southwest of the Moscow city centre and attracts numerous Russian and international corporations, due to its excellent infrastructure and transport connections. Numerous companies are investing in the new location or are already present there.

During the first stage, around 400 million roubles will be invested in the new location and a modern, environmentally friendly production technology with a capacity of 2,000 tonnes per year. The maximum production capacity shall be increased step by step to 20,000 tonnes per year until after completion of all construction phases.

There is a growing demand for colourants in Russia and its neighbouring countries. The high degree of technical expertise on the part of the Gabriel-Chemie Group in terms of masterbatch is highly appreciated by Russian customers. Gabriel-Chemie CFO Andreas Berger: “We have noticed an increasing interest in functional additives such as flame retardants, infrared absorbers and laser additives. Through our many years of experience in the development of functional

additives, we have accumulated a wealth of expertise and, together with our range of colour and combination masterbatch, we are a capable complete supplier for the individual equipment of plastics”.

*From the left: Mladen Biber (Plant Manager Gabriel-Chemie Rus-2), Helmut König (Chief Technical Officer Gabriel-Chemie GmbH), Veselov Ilya Borisovich (Minister of Economy of the Kaluga Region), Andreas Berger (Chief Financial Officer Gabriel-Chemie GmbH)*



■ Gabriel-Chemie Gesellschaft m.b.H.  
[www.gabriel-chemie.com](http://www.gabriel-chemie.com)

## Making bio-based TPEs using a Modular System

■ By developing customer-specific and application-specific compounds using renewable raw materials, KRAIBURG TPE is aiming to meet the growing demand for environmentally friendly and sustainable thermoplastic elastomers and is playing a pioneering role in the innovative developments involved. In close contact with its customers and with a reliable network of raw materials suppliers, the company is benefiting from its core competence in custom-engineered TPEs based on both existing and new, innovative formulations.

Climate change, finite oil resources and customers who are increasingly environmentally aware are leading more and more materials manufacturers and users to turn to "renewable" and "bio-based" solutions. However, "bio" is a broad term that is by no means synonymous with "sustainable" in the sense of a strategy for saving resources and protecting the environment. Because even renewable raw materials also have carbon footprints, as well as water footprints, that can have an impact on the environmental balance, depending on their provenance and the way they are grown. Factors that play a decisive role here include irrigation, fertilizers, transport energy and energy consumed for reprocessing.

"Part of the challenge involves taking into account the environmental balance of the materials' whole life cycles, including their impact on ecosystems and people's health," emphasizes CEO Franz Hinterecker from KRAIBURG TPE.

"It has also become apparent that what our customers expect from the properties of 'bio-materials' varies widely depending on the application – while at the same time we have to meet strict criteria regarding the materials' conformity and performance."

KRAIBURG TPE has therefore opted for a basically customer-specific approach.



*KRAIBURG TPE sees tremendous potential for custom-engineered thermoplastic elastomers with adjustable proportions of renewable raw materials of up to 90%, both in the consumer market and also in the industrial and automotive markets. (Photo: © 2018 KRAIBURG TPE)*

In its Code of Conduct, KRAIBURG TPE has committed itself to sustainable business operations and to protecting the soil, water, air and biological diversity. Environmentally harmful impacts are to be prevented by appropriate environmental protection measures, and resources are to be conserved.

Based on this principles, KRAIBURG TPE's modular system makes it possible to develop customer-specific materials with different proportions of renewable raw materials. Typical performance characteristics that are also relevant here include mechanical properties such as tensile strength and elongation, as well as processability, heat resistance and adhesion to ABS/PC or PP and PE, for example. The requirements are determined in close collaboration with each customer and translated into a sustainable and cost-effective solution by our developers.

■ KRAIBURG TPE GmbH & Co. KG  
[www.kraiburg-tpe.com](http://www.kraiburg-tpe.com)

## Bi-axially oriented Line for Bone-in Applications

■ Macro Engineering and Technology, a leading supplier of film and sheet extrusion systems, has recently enhanced its Quadex™ bi-axially oriented multiple-bubble lines for the production of films with Nylon and EVOH, particularly for bone-in-meat high barrier shrink bags.

Macro has developed the process and the right combination of materials for a successful product. This line offers the latest bi-ax process technology, computer-based automation, and overall control.

Line features:

- Different configurations include 7, 9 or 11 layers
- Ability to run up to three layers of nylon layers with the main barrier layer being EVOH
- Film width from 200 to 500 mm

- Film thickness from 40 to 90 microns
- Production output from 50 to 150 kg/h
- Equipped with our newest Quadex™ technology to better tailor the film properties.

Macro Engineering and Technology has earned its extensive reputation for delivering unmatched technology, flawless execution and after sales support for the most efficient process with over 60 Macro bi-ax lines running worldwide. The newest Quadex™ line has just been successfully installed at a customer in South America.

■ Macro Engineering & Technology Inc.  
[www.macroeng.com](http://www.macroeng.com)

*With the ability to test materials before they are extruded, Guill customers receive testing coupled with industry experience and shorter lead times*



*Picture 1: TA Instruments Discovery HR-2 Hybrid Rotational Rheometer*

# In-House Rheology Lab launched



*Picture 2: TA Instruments DSC-25 Differential Scanning Calorimeter*



Picture 4: New Guill Rheology Lab at company headquarters in West Warwick, Rhode Island



Guill Tool, manufacturers of extrusion tooling for the global market, has opened an in-house rheology laboratory, making it the only extrusion tooling manufacturer in the industry with such a capability. Seeking to obtain better results and minimize the time it takes between testing and production, Guill built its own rheology lab in their facility in West Warwick, Rhode Island, USA. The lab features several key machines that ensure optimum results, when testing materials, especially new compounds to be extruded. The testing equipment includes a Hybrid Rotational Rheometer, a

Differential Scanning Calorimeter, and a Thermal Conductivity Meter.

Third-party testing facilities are typically not experienced in extrusion processes. Guill, however, can not only gather data the same way third-party testers can, but can also interpret that data as it applies specifically to extrusion. Likewise, third-parties simply supply data, not recommendations. Guill is now equipped to both test its customer's materials and work with them to create extrusion tooling that will give them a competitive edge. Accurate simulation and interpretation by extrusion experts greatly reduces the number of physical reworks needed, as the tooling has a greater chance of producing a good product at the outset.

In-house testing also speeds up the turnaround on test results, reducing delays during the tool design process and offering better control over the processes and test parameters.

The new Guill rheology lab processes standard materials, custom formulae and it is equipped to mix materials. These materials include plastics, thermoplastic elastomers, all types of rubber and silicone. Information from the lab is transmitted directly to the Guill engineering department via computer link for review by the design team.

The lab will be offered for use by extruders and chemical formulators, among others in the industry.

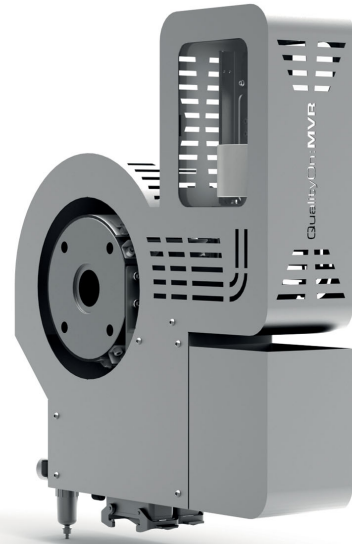
Picture 3: TA Instruments DTC-300 Thermal Conductivity Meter



**Guill Tool & Engineering**  
10 Pike Street, West Warwick, RI 02893, USA  
[www.guill.com](http://www.guill.com)

*The Trioplast Group is an international producer of agricultural plastics film with an annual turnover of around 400 million euros. As a major raw material client of polyethylene, the Swedish group sees its responsibility in the efficient use of resources, processes production and commercial waste on a total of around 30 EREMA recycling systems. At the French plant in Pouancé (located in the west coast area) the new technology investment QualityOn:MVR guarantees for the first time permanent quality control of the recycling process – directly on the machine*

*The QualityOn:MVR measuring unit is mounted directly on the recycling system and measures the MVR value in real time every couple of minutes – depending on the viscosity of the melt (Credit: Trioplast)*



## Quality at the press of a button



Trioplast France produces agricultural plastics films in Pouancé. The LDPE and LLDPE production and post used waste is recycled on two EREMA 1514 TVEplus® machines. The regranulates are mainly used for wide sheet film production, sold under the TRIOCARE brand. Additional material sources for the recycling process include production and commercial waste from Trioplast and from other European suppliers. The recycling process faces a number of challenges due to many various criteria such as prints, contaminants or the degree of moisture through transport and frequent outdoor storage. Despite the considerably varying input material, the quality of the regranulates produced must be ensured at the end of the recycling process.

Trioplast equipped one of its EREMA 1514 TVEplus® machines with a new process for quality monitoring – QualityOn:MVR.

Jérôme Klaeyle, Recycling manager of Trioplast France, refers to QualityOn:MVR as an investment in the decisive lead. "Trioplast stands for high-quality film with our premium TRIOCARE brand. Thanks to QualityOn:MVR we achieve a previously unattained level of process reliability in recycling which we definitely consider to be a lead over other film producers. We already determine the quality of the recyclate during the recycling process, unlike others who don't do this until after."

### Variable input – stable output

The QualityOn:MVR measuring unit is mounted directly on the recycling system and measures the MVR value in real time every couple of minutes – depending on the viscosity of the melt. The

data is exported automatically according to the customer's wishes and can be called up at any time. A message is given for the user as soon as the values measured leave the defined tolerance range and the user can then remove the material with nonconforming MVR values immediately from the current process.

Customers who recycle commercial waste benefit in particular from QualityOn:MVR measuring technology. Developed originally for the increased demands in post-consumer recycling, it is insensitive to contaminant particles from 100 to 1,000 µm – a clear advantage over online measuring systems with gear pump technology.

### About Trioplast

Founded in Sweden in 1965 the group has 1,250 employees working in ten production sites and sales companies in Sweden (7), Denmark (1) and France (2) and sales agencies in Germany, England, Finland and Norway. Typical film products can be found in the industrial, agricultural, food and also hygiene sectors. The Trioplast Group has a total of around 30 EREMA systems and one ISEC machine from PURE LOOP.

■ EREMA Group GmbH  
Unterfeldstr. 3, 4052 Ansfelden, AUSTRIA  
[www.erema-group.com](http://www.erema-group.com)

Trioplast Group  
[www.trioplast.com](http://www.trioplast.com)

# “Do not throw waste away, it can be used in another way!”

*Regranulation is the easiest way to recycle a polymeric material and, for that purpose, single-screw extruders are employed. However, when the aim is to provide an added value to the material or to preserve its fragile stability, the use of a co-rotating twin-screw extruder is mandatory. Thanks to this type of extruder – which is a continuous dynamic mixer – fillers, reinforcing materials, colors and other components can be added to a less noble product thus enabling it to acquire further value*



Through a careful selection of materials and an accurate analysis of their composition, the co-rotating twin-screw extruder guarantees products of constant quality, even when using recycling materials.

In order to reprocess the materials we intend to recycle, they firstly need to be ground. If for the single-screw extruder, which works ‘full-mouthed’ (the screw is always covered in material), accurate feeding is not essential, the twin-screw extruder, which works ‘hungry-mouthed’ (the screw is never covered in material), a constant and meticulous feeding is strictly required,

especially if other ingredients are added to the polymers in the recipe. Obtaining a free-flowing material from the grinding process is therefore necessary and, whereas this is not possible, tape or vibrating-channel feeders can be used so as to guarantee a smoother feeding process. Moreover, installing a forced feeder on the main feeding may be useful as well. This system will accordingly facilitate the introduction of the material into the extruder.

Recyclable polymeric materials may derive from two different sources: industrial wastes or part of the huge amount of Municipal Solid Waste (MSW). The former is of known origin and composition and – once sorted – they can be more easily reprocessed, while the latter must be separated first – using appropriate machinery – to be then treated and finally processed. If the former is unlikely contaminated by dirt or foreign materials, the

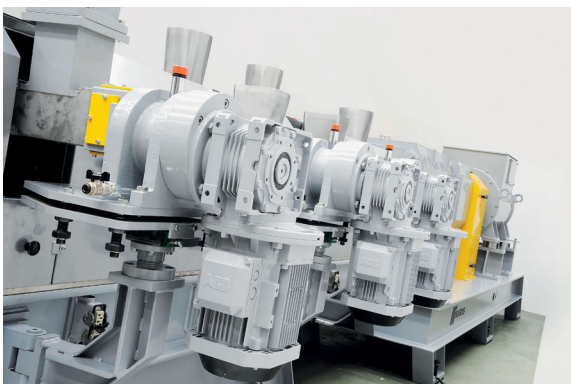
latter require to be washed and are often subject to various types of contamination.

It is precisely during the sorting and the washing phases that some problems, which could affect the processing of materials from MSW, may arise. For instance, this may happen when the following elements are present:

- water, which must absolutely be reduced, since high quantities can limit compounding and granulation processes, as well as decrease the productivity;
- other polymers, metals or pollutants such as wood or paper. In this last case, the filtration system – with the help of a special device positioned in the final part of the extruder, can be a valid solution to these inconveniences, thus guaranteeing the quality of the material.

Wastes are washed with special soaps whose residues may release smells through the processing phase. If it were to occur, a potential addition of anti-odor additives has to be considered depending on the final application of the product.

A recycling process is advantageous only when the material is clearly iden-



tifiable, volumes are substantial and the market proves to be receptive concerning its reuse.

Polymers as polyethylene (PE) and polypropylene (PP) can be recycled showing satisfactory results. Polyethylene terephthalate (PET) from bottles, which is an example of MSW polymers, has a rather clear composition, it can be easily selected and its reuse for the production of bottles in the food sector has recently been authorized.

When recovering the PET, it is mandatory to reduce water traces so as to minimize the loss of intrinsic viscosity; for that reason, the process requires the use of high vacuum pumps enabling the removal of the residual moisture from the material and avoid any decrease in performances.

Other sources of post-consumer material derive from the agricultural sector (e.g. the mulching film) and from the automotive sector, especially materials coming from wreckers. In the first case, the resulting and remarkable quantity of reusable high-density polyethylene (HDPE) can be employed for the same application (even if rather polluted by rubble and dirt); as for the second case, we have large volumes of different materials with a discreet traceability.

In the past, Maris has carried out some tests reprocessing hygiene-related items (namely diapers) with a PE polymer base. Materials of this nature can be found in big amounts and have shown some cleaning and sanitation-related difficulties, as well as concerning their feeding into the extruder.

Furthermore, even 'printed polyolefins' from food packages can be discolored thanks to the stripping technique, which is typically carried with water.

Industrial scraps – if appropriately selected – provide an excellent secondary raw material (SRM). In the rubber sector, for example, thanks to the devulcanization process patented by Maris, which makes it possible to recycle production wastes through a continuous system, producers can reuse part of their wastes re-introducing recycled rubber into the same production cycle in a proportion that does not compromise the material performances. In fact, the devulcanization process enables the reintroduction of recycled material into the basic formulations from 15% to 50% minimizing the impact on the mechanical properties of the final product.

It should be underlined that – after a careful selection and the identification of materials – the abovementioned



devulcanization process can be applied to post-consumer materials as well. In this case, recycled rubber can be employed in completely different areas when compared to those of origin.

Back to industrial wastes, thermoplastic materials offer a wide range of possibilities. Processing wastes and non-compliant parts – once ground and converted into free-flowing material – are likely to be mixed with solid and/or liquid additives to be then reused.

This type of process can be applied to all types of polymers (such as polyolefins and PVCs) and techno-polymers (including TPUs and PCs).

#### Industry 4.0: What's new?

The term 'Industry 4.0' has now become an expression of common knowledge, even though a widely shared definition or a specific relevant legislation still does not exist. The word was born in Germany in 2013 to be then interpreted in several and rather different ways according to the most diverse realities and specificities of the countries where it has been adopted. Industry 4.0 is a 'paradigm' or – rather – a 'concept' able to turn the production reality into a leaner, dynamic, flexible, efficient and sustainable system thanks to specific principles (e.g. interconnection and/or virtualization). In other words, it is the process that will lead users to a fully automated and interconnected industrial production.

Criteria for its application vary according to the country of reference. Common standards are particularly difficult to identify. As for the Italian legislation, the 'general guidelines' applied to the extrusion lines are the following:



- control by means of PLC (Programmable Logic Controllers);
- interconnectivity with factory information systems and remote loading of instructions (recipes);
- automated integration with factory logistics systems, supply network or other machinery of the production cycle;
- simple and intuitive human-machine interface;
- remote maintenance, remote diagnostics or remote control systems;
- continuous monitoring of working conditions and process parameters through appropriate sets of sensors and the adaptability to process deviations.

Maris has already provided lines enabling customers to benefit from a specific fiscal advantage. The following solutions have been chosen:

**Control by means of CNC (Computer Numerical Control) or PLC (Programmable Logic Controllers)**

Maris extruders are equipped with constantly evolving hardware and software PLCs. This allows the communication within different fieldbuses and to meet the interconnectivity requirement as well. Although all our software is inhouse developed and is part of Maris' know-how, no custom product and/or protocol is used for communication purposes.

**Simple and intuitive human-machine interface**

The human-machine interface (HMI) – achieved by using color touch-screen panels – has been studied and thought to be easily understood and employed by means of intuitive icons always placed in the same position on the various video pages, function buttons to start and stop several devices ordered and represented in logical sequence, soft colors to avoid eyestrain. Moreover, diagnostic pages have been inserted as well in the perspective of remote diagnostics purposes. Thus, the whole system status can be checked without opening the electrical panel or, better still remotely.

**Remote maintenance and remote diagnostics**

The machine manufacturers market has been using modem to modem connections to remotely access devices and systems for years. Nowadays, thanks to the Internet and the broadband – through industrial VPN routers that easily guarantee excellent levels of connectivity and reliability – opportunities to connect any type of system or device in plants and installation sites worldwide are constantly increasing.

An available remote connection for the Maris systems allows to meet both the requirements of remote maintenance and of remote diagnostics.

**Interconnectivity with factory information systems and remote loading of instructions/ Automated integration with factory logistics system, the supply network or other machinery of the production cycle**

'Industry 4.0' means the possibility to intensively use, assess and analyze production data within the IT (Information Technology) systems of a company's corporate level.

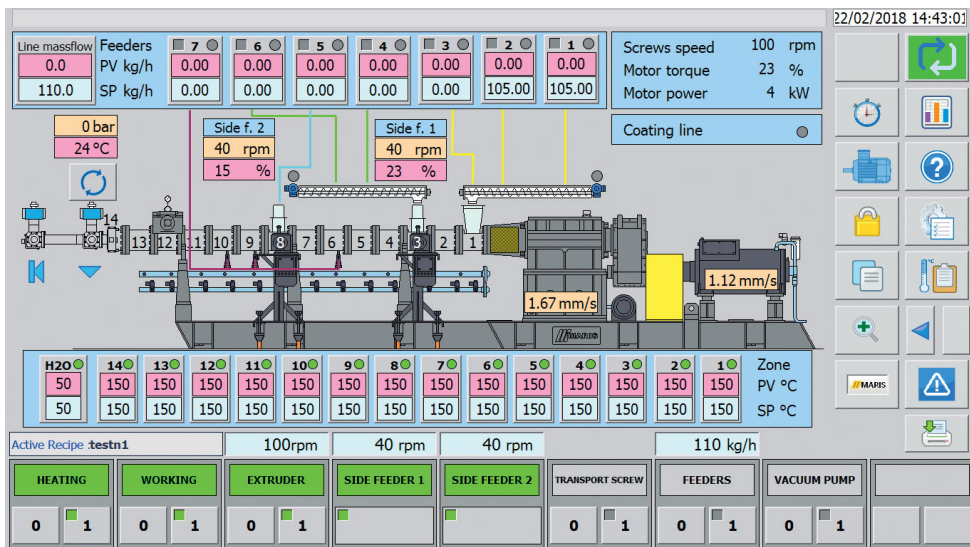
Nowadays, PLC programs are already collecting large amounts of data on production and process levels (pressure values, temperatures, totalizers). Thanks to Industry 4.0, the exchange of data between production and corporate levels of a company, or with other systems of the line, must be guaranteed and made available to IT systems in order to – for instance – improve product quality.

Taking into account the fact that historicizing data and handling the communication with the logistics department are a customer's task (or of a company on its behalf), one of the essential requirements for the success of Industry 4.0 is therefore the existence of a uniform standard to exchange data.

As for Maris lines, the use of worldwide recognized and employed protocols such as Profinet or open protocols as the OPC Unified Architecture (UA) makes reading and writing data available and easier to manage with no need to resort to a more specific purpose-oriented add-on software.

**Continuous monitoring of working conditions and process parameters through appropriate sets of sensors and the adaptability to process deviations**

This requirement is naturally fulfilled by Maris lines as it is vital to meet the basic process and safety needs of our customers.



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*The first half of this year was very positive for Gamma Meccanica SpA, an Italian company specialized in the production of lines for the regeneration of plastic materials. The recent events in which the company participated at NPE 2018 in Orlando (Florida) and Plast in Milan, proposing as our main topic the new series of GM Tandem regeneration lines, have brought many interesting prospects and confirmed the growing interest in this type of technology. Gamma Meccanica has been operating in the plastic recycling machinery sector since 1987. The Tandem technology has been delivered for many years and recently has been redefined. The most recent systems delivered are the result of continuous technological improvement with a high level of automation, maximum quality of the recycled product (granules) and tremendous energy savings*

## The growing success of the GM Tandem lines produced by Gamma Meccanica

Thanks to GM Tandem technology it is possible to recycle heavily printed, high humidity and highly contaminated plastic materials.

The line is composed of a COMPAC unit equipped with the Ecotronic® system, a primary extruder, primary screen changer, a connection neck with a special degassing chamber, a secondary extruder and, as an option, a second screen changer for finer filtration / purification of the melt and then the pelletizing system. The ECOTRONIC® system, by increasing the number of revolutions above the nominal speed of the motor, allows to control the temperature without adding water and to process materials with a high percentage of humidity. Ecotronic guarantees a notable energy savings (up to 40%).

An Italian customer has recently installed GM Tandem 160 line for the recycling of milled HDPE. The choice of the customer was determined by the need to recover parts of agricultural plants, in particular irrigation pipes, with high level of contamination from the ground and other residual materials. The material to be recycled is sent to the Tandem regeneration line directly from the washing plant with humidity rate of approximately 8%. Thanks to the patented and innovative degassing system, 10 times more efficient than traditional systems, humidity is expelled directly during the extrusion phase. The double filtration up to 100 microns, guarantees the removal of even the smallest parts of contaminants. The production capacity of this Tandem line and with this type of material is 1200 - 1400 Kg/hr.

Another recent case is the GM Tandem 180, purchased by a North American customer for the regeneration of non-woven PP, raffia bags in PP, BOPP heavily printed film and PE film. These are post-consumer and post-industrial wastes with a high rate of contamination like paper, aluminum, PET, PA and sand. In this case the GM Tandem 180 line has the primary extruder of Ø180 and the secondary extruder of Ø210. The guaranteed production is 1500 - 1700 kg/hr.

Given the success of the Tandem lines and the growing interest of recyclers, the company is committed to developing new models. The next line that will be created is GM Tandem 210, composed of two extruders: the first one with Ø 210 and the second extruder of Ø250, with a production capacity starting from 2000 kg/hr.

Gamma Meccanica has always been aware of the importance of recovering such a precious resource as plastic. For this reason, in addition to offering continuous improvement of the performances of its lines for the regeneration of plastic materials, together with a group of Italian companies that have been active for many years on the recycling machinery market, and the European association of plastic recyclers (PRE), it is participating in the project "Are you R". This projects aim is to raise awareness among the European people on the importance of plastic recycling. The goal is to spread the culture of recycling. Through a number of documents, photographs and funny animation films, the project reveals the advantages of plastics and explains how its impact on the environment could be reduced if correct behaviors were maintained. This will be one of the topics of the next "Packaging and Recycling" convention in Milan (26-27 September) at which Gamma Meccanica is a sponsor.

To gain more information on its lines Gamma Meccanica invites you to visit Fakuma 2018, in Friedrichshafen (Germany), from 16 to 20 October, Hall A6, Booth 6218.

Recycling-Linie GM 180 Tandem



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# New Sharp Eye Technology introduced

*New brand application, made possible by higher light intensity, will be a welcome breakthrough at a time when demand for plastic bottles and trays is growing internationally*

TOMRA Sorting Recycling has introduced a new technology called TOMRA SHARP EYE, which makes it possible to separate single-layer PET trays from PET bottles. This enhances the previous capability of TOMRA's AUTOSORT machine to separate multi-layer trays. This breakthrough is commercially significant because small but critical differences in the chemical properties of PET food trays and PET bottles mean that they have to be separated for equivalent-product recycling. In addition to this, artificial intelligence embedded in TOMRA systems also enables seamless analysis of sorted products, making the future plants even smarter.

Valerio Sama, TOMRA Sorting Recycling Product Manager, commented: "We expect our new TOMRA SHARP EYE technology to be welcomed by collection-and-sorting plants and by PET regeneration centres. Demand for this is likely to grow, because the widening international adoption of on-the-go lifestyles is pushing-up the



use of plastic drink bottles and plastic trays used for fruit, vegetables and other foodstuffs."

The key to this breakthrough is an enhancement of TOMRA's FLYING BEAM® technology. As the first near-infrared (NIR) scan system with point-scanning (and no need for external lamps), this focuses only on the area of the conveyor belt being scanned. Allowing a wide range of calibration possibilities, this can distinguish even the finest molecular differences in materials flowing down the recycling line – and now that TOMRA SHARP EYE introduces a bigger lens for higher light intensity, it is possible to detect even the most difficult to distinguish properties.

The step-by-step process which concludes with the separation of single-layer PET trays and PET bottles is seamless and flexible. During the preparation for sorting mixed plastics into different polymers, packaging material collected or pre-sorted from municipal solid waste (MSW) first runs through a mechanical treatment process which reduces voluminous materials, mainly soft items such as plastic, film, and non-plastic products. To

then separate mixed PET into different polymers, AUTOSORT functions as a combined system, detecting material and colour in combination with grain size. Even with a very mixed material input, this process achieves an impressive sorting efficiency of 95% or greater.

More than a million plastic bottles are bought around the world every minute and within the next five years this number is expected to increase by a further 20%. In response, EU regulations are tightening and organisations such as Plastics Recyclers Europe are instigating recycling guidelines for PET trays. This will encourage separate sorting streams to enable PET tray recycling and to develop markets for this packaging product.

A TOMRA AUTOSORT machine with the new TOMRA SHARP EYE technology is available for demonstrations by appointment at the company's Test Center near Koblenz, Germany.

There is a video of the new application at:

[www.tomra.com/en/sorting/recycling/your-application/waste-sorting/pet-bottle-vs-tray](http://www.tomra.com/en/sorting/recycling/your-application/waste-sorting/pet-bottle-vs-tray)

**TOMRA Sorting Recycling**  
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[www.tomra.com/recycling](http://www.tomra.com/recycling)



# Automatic and Continuous Screen Changer...

...for Heavy Recycling and High Filtration Levels

Cofit  
at Plast 2018



*Cofit International presented an important innovation in the field of screen changers at Plast 2018, its most innovative model for recycling highly contaminated plastics: Gorillabelt T, an automatic and continuous screen changer for recycled materials with a high filtration level, up to 50 micron*

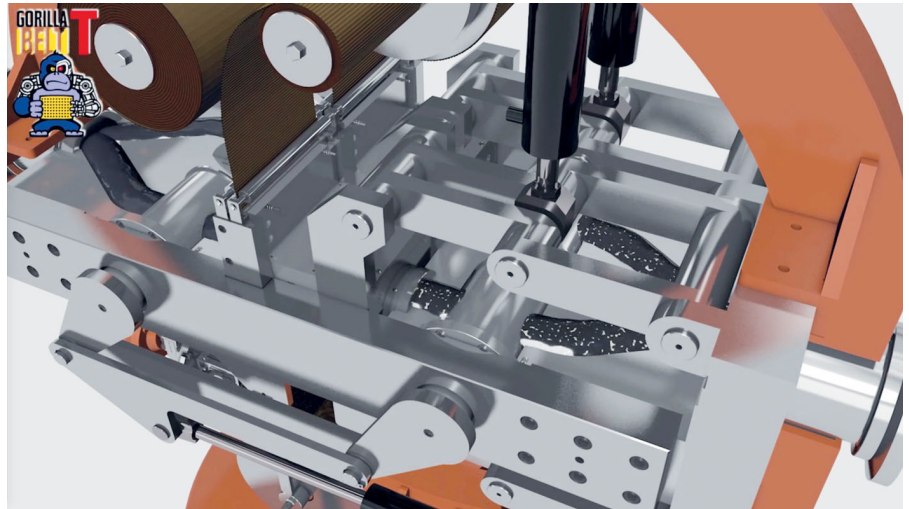


The plastic market is currently asking for more and more complex, faster, smarter, and better-quality solutions in extrusion plants. This involves optimization of devices, materials, processes, and technologies. High-quality products can be obtained from cheap raw materials, thanks to refined processing and innovative solutions in filtering and in screen changer technology.

Due to the special Gorillabelt T screen changer technology and design, only dirt, impurities and plastics sticking onto the filtering screen surface are discarded. During cleaning, material loss is irrelevant.

Cofit International has designed and engineered Gorillabelt T – its most innovative automatic and continuous screen changer for plastic – with the aim of guaranteeing a series of important advantages for enhancing the performance of the production line as follows:

- production of excellent quality materials with zero or extremely low levels of impurities;
- use of smart raw materials, e.g. highly-contaminated post-consumer plastic, up to 10% of contamination level;
- extrusion of most thermoplastics, including PET;



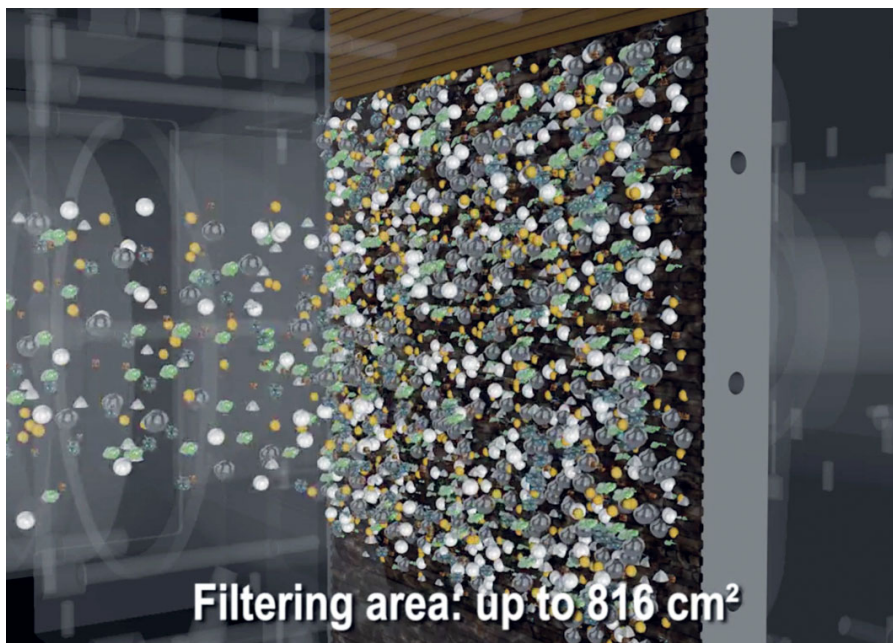
- increase of output rates and automation level, easily programmable and user friendly controls;
- zero polymer loss during the cleaning cycle;
- reduction of: personnel costs involved in manual operation, maintenance interventions, energy consumption, personnel involved, system shut-downs;
- 24/7 uninterrupted production, with no interruptions or downtimes.

Cofit Gorillabelt T operates at high process parameters: temperature up to 300 °C, pressure up to 300 bar, out-

put rates up to 3.000 kg/h. It's specifically suitable for filtering up to highly-contaminated thermoplastics, e.g. agricultural or building films or post-consumer materials, and it can easily manage any kind of pollution: metal, wood, paper, textile fibers, unmolten plastic, aluminum, sand, and more.

The production executive can rely upon permanent remote assistance service via Gorillabelt T screen changer LAN connection, provided an existing Internet access. Through a special Remote Assistance module, any process failure can be easily assessed and fixed, as well as control software quickly updated. Besides minimizing downtimes, the Remote Assistance ensures utmost production efficiency and optimized intervention times.

Gorillabelt T is the first step towards Industry 4.0 – ready extrusion project. The screen changer has been designed in compliance with the most advanced automation trends and data exchange procedures in manufacturing technologies. According to Industry 4.0 model, Gorillabelt T screen changer will communicate and cooperate in your smart factory with your extrusion systems components. Gorillabelt T is a patent pending product.



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[www.cofit.com](http://www.cofit.com)

*Reifenhäuser is a successful global specialist operating in the plastics processing industry with a range of technologies for manufacturing packaging solutions. The Reifenhäuser Cast Sheet Coating (CSC) business unit boasts outstanding process technology for plastics processing, which packaging manufacturers use to produce films with a reliable barrier effect. Packaging manufacturer RPC Bebo Plastik also relies on Reifenhäuser CSC's line concepts and process expertise, with the company's German site in Bremervörde recently putting into operation a multi-layer extrusion line for the production of barrier films. RPC Bebo Plastik uses its new production line to manufacture packaging items with aroma protection, such as coffee capsules, which act as an excellent barrier, protecting the packaging contents from oxygen, light, and humidity thanks to precise multi-layer technology*



*The mechatroni polishing stack MIREX MT from Reifenhäuser Cast Sheet Coating for barrier film applications (Photo: RPC Bebo Plastik)*

# Barrier Technology convinces British Packaging Manufacturer

The line concept sets new standards with regard to reproducibility thanks to MT: the patented mechatronic polishing stacks technology, and the user-friendliness and efficiency of the production process. All line settings are saved using an extensive recipe management system, meaning that time-consuming reconfigurations due to frequent product or colour changes are a thing of the past. "As well as the great tolerances and fast colour changes, reproducible composite films were pivotal to our decision," commented Niklas Rad, project head at RPC Bebo Plastik. "The opportunity to test composite films on a 9-layer barrier line in the Reifenhäuser technology centre assured us that we were using the right technology."

Significantly less energy and raw material consumption Reducing raw material costs by saving on raw materials is of prime importance to film manufacturers. Reifenhäuser CSC meets this requirement with the REIcofeed 2.2 coextrusion feedblock. An internal encapsulation device replaces barrier raw materials and tie resin at the edges with inexpensive ground stock without an additional extruder being required – which saves space. This is an advantage

as regards efficiency, as film manufacturers consume less energy and raw materials.

Lars Bergheim, regional sales manager at Reifenhäuser Cast Sheet Coating, had this to say about the benefits: "The further development of Reifenhäuser's tried and tested technology allows the barrier and tie resin layers to be optimally distributed across the width, while the entire composite film has very good individual thickness tolerances. This results in a high degree of raw material efficiency."

The project's progression reflects the systematic achievement of an individual customer requirement through the broad-based development capabilities of the Reifenhäuser Group.

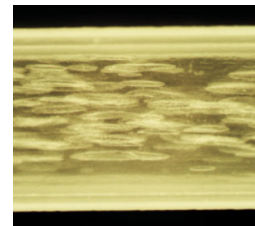
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**RPC Bebo Plastik**  
[www.rpc-bebo.com](http://www.rpc-bebo.com)

GMA has launched the new three-layer composite hollow die. Through special drainage manifold design, customers are able to save almost 50% material of surface when applying on hollow board. On the condition of not effecting limited weight, it can reach the goals of saving material, increasing customers' production profit by means of micro-foaming technique. This design has already been patented and used by customers on extruders and then received great applause



# New Three-Layer Composite Hollow Die launched



Picture 3: The enlarged view of micro-foaming hollow board section

From simple single layer to multi-layer construction, grid-shaped, X-shaped to irregular-shaped design of hollow die, the technical difficulty point of traditional hollow die is how to avoid sunken surface problem. For example, UV is usually used on coating on hollow board surface for resisting ultraviolet rays and enhancing weather resistance, but the sunken surface problem causes the reduction of product strength and increasing production cost. Few years ago, GMA group has already successfully overcome this difficulty point of hollow die, and this technique is realized no matter in applying on producing PC hollow board with UV coating layer or PP two-tone compound hollow board. Via GMA's new hollow

die, users can save about 15% of surface material.

The PP hollow board is one kind of mature product and became a market of price competition recently years. In order to increase customers' profit, GMA develops this new hollow die, and it can help users to save at least 50% surface material cost, through three-layer construction design with micro-foaming production technology, to expend multi-application on PP composite board. By continuous experiment and amendment, compared with PP hollow board, the new PP micro-foaming hollow board is more lightweight, but the bearing capacity is the same, maybe even higher. This is revolutionized achievement of PP hollow board.

On chart 1, from the compression test, we can see the bearing capacity of PP micro-foaming hollow board (Picture 1) with weight 660g is the same as PP hollow board with 750g. This result proves that the micro-foaming technique not only makes PP hollow board lightweight, but also increases the bearing capacity and saves about 15% material cost. GMA three-layer composite hollow die helps users to save 50% cost of color master batch and brings users quite great benefit.

**Note:**

1. Lab conditions-temperature: 23±2°C
2. Lab conditions- relative humidity: 50±5%
3. Testing speed: 1.3mm/min

GMA always stands in customers' position and to improve quality of die, to increase product profit for customers as well as create more additional value of product. The advantages of three-layer composite hollow die for the customer:

1. Reduce production cost
2. Enhance practicality of product (lightweight, but also increases the bearing capacity)
3. Able to coat functional material on surface, multi-application for expending additional value of product.

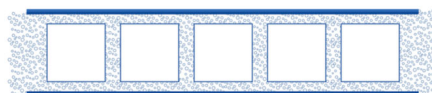
Chart 1: compression test, based on board thickness 4mm

	Max kilogram-force (kgf)			
	PP foaming hollow board	PP foaming hollow board	PP foaming hollow board	PP hollow board
Weight of square meter	596g	660g	730g	750g
Test #1	730	1030	1490	1050
Test #2	710	999	1480	1030
Average value	720	1015	1485	1040

Picture 1: Traditional hollow die design is easy to case sunken surface of



Picture 2: Patented three-layer compound micro-foaming hollow board made by GMA new hollow die



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*At Plast 2018, Moretto renews its strong commitment to the market by presenting messages and new solutions focused on the specific requests of an increasingly demanding clientele. Products with high technological value, intelligent and sustainable machines, prepared for a 4.0 process management, have found great success among the operators of the injection molding, extrusion and PET processing, met at Plast 2018*

*Inside Moretto's booth a real "control space" was recreated*

## Great Success – New Technological Solutions presented at PLAST 2018

### Empowering Plastics

After almost 40 years of "Plastics Automation", Moretto presented, at Plast 2018, a new pay off "Empowering Plastics". A strong concept, that is at the base of every Moretto product, guides the company from the research and planning up to the production and the placing on the market. EMPOWERING PLASTICS means giving more power to plastics, by helping the supply chain from the beginning and by offering competitive solutions with high technological value for mould and environmental problems. The intent is to sublimate the plastic such as "raw material" which is essential and irreplaceable in the lives of each of us. The need to create a new pay-off derives from the Italian company's mission: produce the best solutions in plastic automation industry to achieve excellence in final products and customer processes. For Moretto, Empowering Plastics means, in fact, "technology and excellence at the service of industry". The new pay off represents precisely this "proactive" attitude, typical of the Moretto Group, which has always been ori-



ented towards overcoming its know-how. The goal is to always "infuse more power to plastics" but also to bioplastics, with the aim of creating finished products with even more extreme mechanical, functional and aesthetic characteristics.

### The new Moretto products presented at Plast 2018

Moretto presented at Plast 2018, and for the first time in the Italian market, the revolutionary and unique "drying on demand system" Moisture Meter Manager. This innovation has attracted great interest from visitors, especially from processors of medical, pet and automotive sectors, who have already perceived the advantages in terms of quality of the finished product, energy efficiency and reduction of waste. Moisture Meter, in the versions Box, Guard and Manager, responds to customer needs to obtain an absolutely precise and indispensable data in their own dehumidification process: the residual moisture of the plastic granule, measured in ppm, with a deviation of  $\pm 3$  ppm, which is practically irrelevant.

In a dehumidification process, this is the only data that allows the customer to have the certainty of transforming a perfect polymer and creating products with superior technical, aesthetic and functional characteristics, as well as reducing considerably production wastes and energy consumption.

In the exclusive Manager version, Moisture Meter allows an automatic and efficient management of the dehumidification process: the customer only uses the energy required for each phase of the process. With Moisture Meter Manager, we are focusing about data and real savings in 4.0 industry. With regards to energy efficiency, Moretto presented at Plast the new cooling concept X COOLER. X Cooler inherits the X MAX spirit of EUREKA as it develops into a concept of great efficiency, modularity and easy expansion over time.

*The Moretto-Team at Plast 2018*



X COOLER is a modular cooling system, equipped with screw compressors with variable flow, high efficiency evaporators, centrifugal ducted fans and electronic expansion valves that, even in this case, guarantee high performance and optimize the consumption of a compartment of high energy consuming departments. X Cooler is a cooling system suitable for heavy-duty applications.

Regarding temperature management, Moretto presented TE-KO Chiller, the integrated cooling and temperature control system that meets the compactness requirements of the plastics processing departments by definitively reducing the spaces these machines traditionally took up. One machine for two functions that makes the difference in the consistency of the finished product is quality, in the drastic reduction of waste and in the energy efficiency of the department.

A versatile solution for the double zone thermoregulation of the molds, with adjustable set point between + 10 ° C and + 95 ° C and integrated chiller for the production of cooling water. Absolute precision in the temperatures, pressures and water flow management is guaranteed by solid-state relays and control systems with microprocessors dedicated to control and perfect integration of processes. TE-KO Chiller is equipped, as standard, with the integrated Free Cooler function, which allows the optimization of consumption according to the environmental conditions, in which the transformation process takes place.

Continuing with the news, DPK is the newcomer of the already large family of Moretto's dosers. A compact loss-in-weight additive dosing unit, suitable for intermittent or continuous dosing of small quantities of color or additives into a flow base material. This new dosing unit solves the problem of overdosing with an extremely precise control. Thanks to the exclusive vibration immunity system, the machine control algorithm and the hopper removable from the dosing unit, DPK achieves a dosing accuracy up to 0.3%, allowing processors to avoid unnecessary wastes of expensive additives.

DPK is strongly characterized by his hopper, made of transparent acrylic material that allows the operator to see the state of the machine at any time and at long distances. Furthermore, its integrated feeding system autonomously manages the loading of the material, according to the needs of the processing machine.

With regard to PET and in particular to the beverage sector, Moretto presented the DS series mould dryer, designed to preserve the moulds from water condensation so as to guarantee the best quality of the product along with a longevity of the same mould. DS is characterized by a compact structure and works with a high performance rotor that inherits the zeolite technology and expresses all benefits in terms of process and energy performance. The recycling of plastic is an important and very topical subject. Even in this area, Moretto continues to develop customized solutions for the recycling of PET. At Plast, Moretto presented a new series of MPK crystallizers. They are absolutely necessary machines in this sector where R-PET and direct regrind, which is the scale coming



*At Plast 2018, Moretto presented a preview of MOWIS 3*

from bottle granulation, are materials that need dedicated processes and system specifications.

#### **Mowis 3, new 4.0 solution**

The company proceeds on a precise business strategy aimed at the future and continuous investment in technology, automation, research and skilled staff, with a view of the 4.0 criteria.

A 4.0 approach is mainly required by sectors such as automotive, medical and packaging, which require major technological standards and where Moretto records his best performance.

At Plast 2018, Moretto presented a preview of MOWIS 3, the brand's new integrated supervision and management 4.0 system. Inside Moretto's booth a real "control space" was recreated. With the support of a technical staff visitors were instructed about the functionalities and extreme customization of this new system of supervision and integrated management.

#### **Tomorrow**

The Green Factor, which has always accompanied Moretto activities, evolves today into a new project called BE TOMORROW. Be Tomorrow is a renewed commitment of all of us who undertake more and more activities that involve the company and the whole supply chain towards eco-responsible attitudes and processes, towards research and continuous real innovation aimed at reducing electricity consumption, recycling and bio-plastics.

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# Industry 4.0 and IIoT

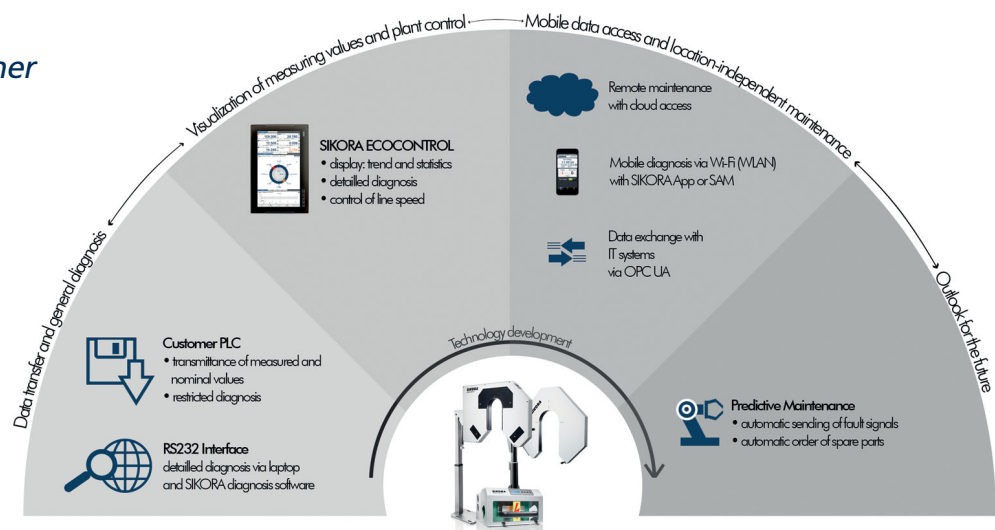
*The term "Industry 4.0" – together with the "Industrial Internet of Things" (IIoT) – shapes the discourse on sustainability and competitiveness of the industry. The interaction between human, machine, and production during the running production process enables an independent production control via intelligent machines. SIKORA measuring technologies are equipped with interfaces for Industry 4.0. How the customer benefits from it shows the following overview*

## Data transmission

In classic production lines, SIKORA devices receive nominal values from a programmable logic controller (PLC) of the customer and in return transmit real measuring values. The received information are the basis of process optimization.

## Visualization of measuring values and plant control

With the integration of SIKORA's ECOCONTROL processor system into the production line, the customer gains various new networking and control possibilities in the area of Industry 4.0. All SIKORA measuring devices are connected to the ECOCONTROL. It visualizes the transmitted data, creates trend and statistical data and, on this basis, initiates specific measures for plant control. The regulation is done by increasing or decreasing



Visualization of technology development towards Industry 4.0 at SIKORA

the line speed or extruder rpm. Furthermore, the ECOCONTROL is able to mirror the recorded production data to any desired display systems in the line where it can be further processed.

## Mobile data accessing

The SIKORA processor devices provide the industrial network protocol OPC UA, which increasingly prevails as standard language of the IIoT and allows a comprehensive data exchange with IT systems. SIKORA devices are equipped with all standard interfaces, and therefore, fit for Industry 4.0 and with regard to the hardware optimally designed for future developments. Via an Ethernet interface, a remote maintenance is also possible with the ECOCONTROL and allows SIKORA employees to access a system independent of the location.

## SIKORA service

SIKORA service offers customers comprehensive services regarding the area of Industry 4.0. This

includes a mobile diagnosis by Wi-Fi transmission, for example, from the diameter measuring gauge heads of the LASER Series 6000 to the SIKORA App or SAM (Smart Assistance Manager). In addition, remote maintenance via safe cloud accesses is increasingly gaining importance for customers. The ECOCONTROL also enables remote maintenance via an Ethernet interface, so that SIKORA employees may access the system location-independent if needed. The development of special maintenance software tailored to individual customer requirements that enables predictive product maintenance will also be possible in the future. For example, a LASER Series 6000 device may then send an automated fault message when the gauge head is dirty.

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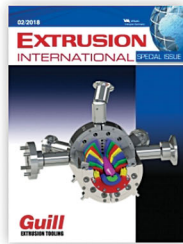
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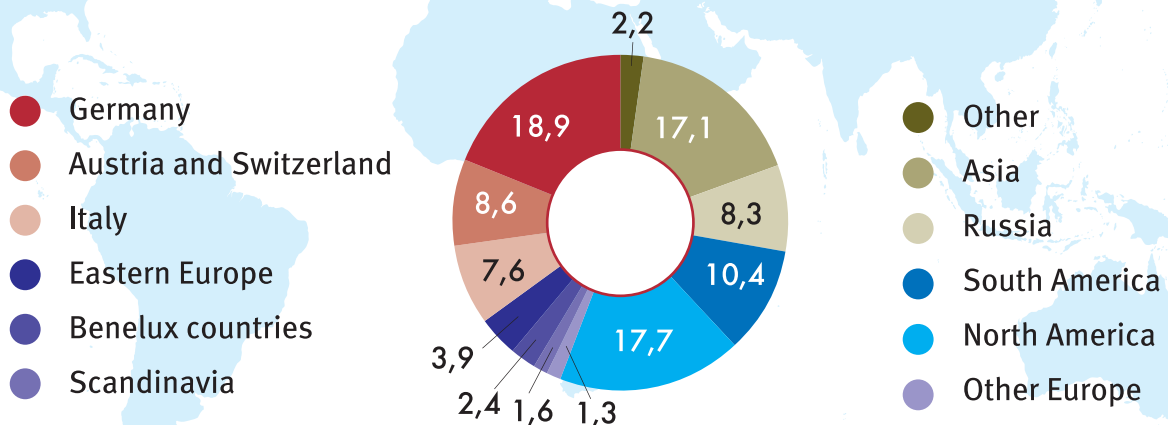
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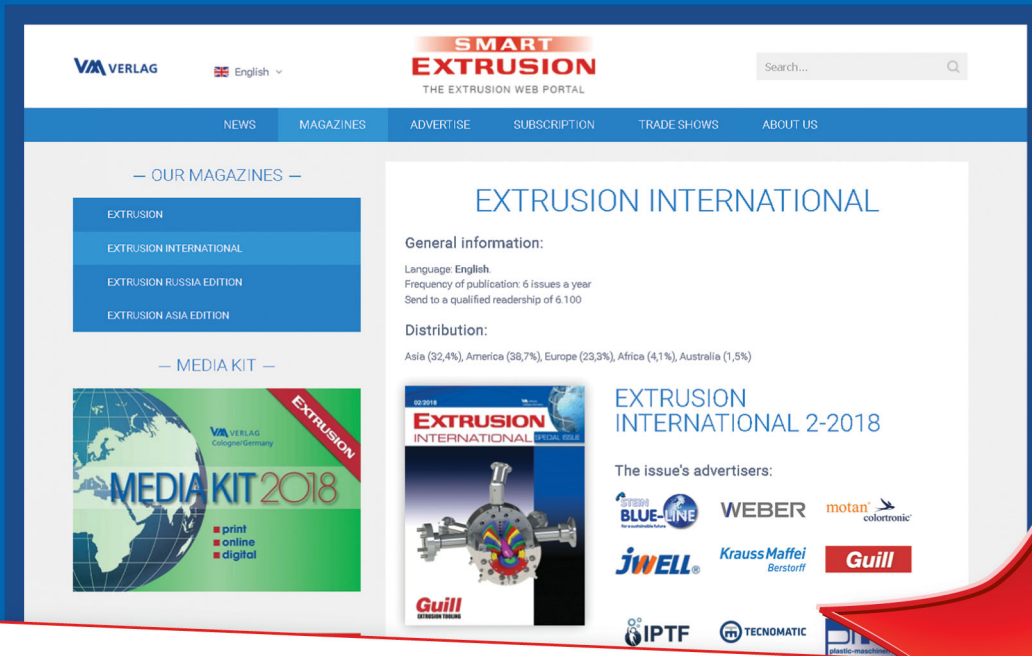
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