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UPDATE: MATERIALS HANDLING TECHNOLOGY



2019: HIGHLIGHTS OF THIS MONTH'S SHOW

INNOVATION FOCUS: PIPE INSPECTION ● PVC-O

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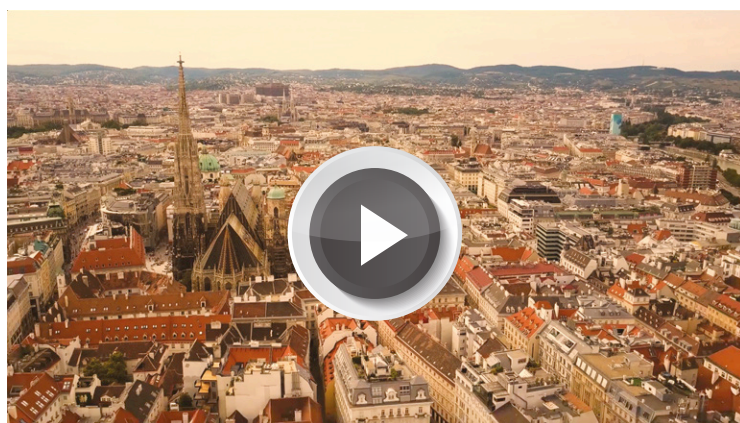
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Pipe and Profile EXTRUSION

5 Industry news

Aliaxis grows profits in first half of 2019; Polypipe posts H1 profit improvement; Italy's machine imports and exports fall; Fraenkische opens new plant in Königsberg; PPI publishes two electrofusion guides; Aimplas project brings Industry 4.0 to plastics; Maguire opens subsidiary in Taiwan; Experts confirmed for Profiles 2019 conference

11 Pipe inspection boost profit and quality

Inspecting extruded pipes helps producers to maximise quality – by picking up on defects – and increase profits, by ensuring that products do not use excess material

19 Strong stuff: latest advances in PVC-O

Developments in oriented PVC (PVC-O) include new standards, production facilities – and the use of orientation in chlorinated PVC

23 Extruders' guide to K2019: materials

The world's largest, most international plastics trade fair opens in Dusseldorf in Germany this month. Our pre-event coverage help you get the most from your visit. While this preview focuses on materials, there is also information on page 34 of machinery and recycling innovations that did not make it into our last issue

49 Mixed bag: latest in materials handling

Materials handling machinery prepares, transports and measures polymer into the extruder. We look at some of the relevant equipment that will be seen at K2019

COVER PHOTO: MORETTO

60 Extruder of the month: Tubrica

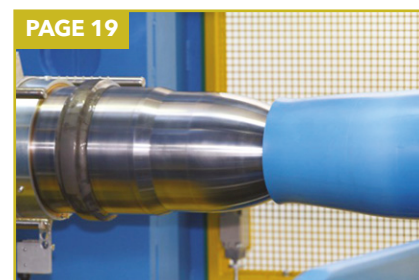
62 Dates for your diary

COMING NEXT ISSUE

› Wood-plastic composites › PEX › Extruder wear protection › Multi-layer pipe › K2019 review



PAGE 11



PAGE 19



PAGE 23



PAGE 49



PAGE 34

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Mexichem becomes Orbia

Orbia is the new name for Mexican chemical company Mexichem – whose assets include Dutch pipemaker Wavin.

The company says the name change comes at the end of a year-long process. All the company's building and infrastructure activities will now operate under the Wavin brand name, which will enable Wavin "to collaborate on a world-wide scale as one team".

The company employs around 22,000 people.

➤ www.orbia.com

Aliaxis grows profits in first half of 2019

Belgian pipe manufacturer Aliaxis posted a small increase in sales for the first half of the year – though a more substantial profit gain.

The company says that revenues reached €1,577 million for the period, an increase of 1.4% compared to last year. Profitability, in the form of EBITDA, rose nearly 9% to €234m.

There were mixed results. In the Europe, Middle East and Africa (EMEA) region, there was moderate growth: the UK and Germany were strong, while Spain and Italy

were affected by political uncertainty – though Spain saw "moderate growth" thanks to solid demand in the sanitary and irrigation market.

In Asia-Pacific, sales in India were positive, fuelled by government spending on infrastructure there. This is expected to continue.

The Americas business remained at a high level – though year-on-year sales decreased from last year's record high. Sales to the USA were strong, those to Canada were weaker due to uncer-

tainty over infrastructure spending, and Latin America faced ongoing difficult economic conditions.

Aliaxis signed an agreement in August 2019 to acquire US-based Silver-Line Plastics, which makes plastic pipes.

Laurent Lenoir, CEO of Aliaxis, said of the results: "Despite mixed and challenging conditions in some of our main markets, we managed to deliver revenue in line with the previous year."

➤ www.aliaxis.com

Fraenkische opens plant in Königsberg

German pipe manufacturer Fraenkische has opened a new plant at its headquarters in Königsberg.

The plant, which has been under construction for two years, will form part of the company's western plant – producing various products. It comprises a three-storey administrative building, production hall and logistics centre, built on 30,000 sq m directly adjoining the

existing company premises.

"Our growth continues, and not just in the interna-

tional subsidiaries but also here at our headquarters," said Otto Kirchner, presi-

dent of the company. "The new construction is an investment in the future of our family enterprise."

All of the logistics operations for the company's industrial pipes division have been handled in the new building since the beginning of the year, while production facilities moved here from the Hofheim plant in May.

➤ www.fraenkische.com



The new plant has been under construction for two years

Profiles 2019: network with the experts

The European PVC building profile industry's learning and networking event – Profiles 2019 – returns to Cologne on 12-13 November.

Speakers include senior specialists from Aluplast, KemOne, Plastchem, Dow, Inovyn and SKZ-Testing. They will cover topics ranging from future window technologies and PVC resin

supply and demand through to optimising formulations for performance and appearance and meeting rising quality demands.

Profiles 2019 will also include a special panel discussion focused on sustainability and how to integrate Circular Economy principles into the construction products sector. And

attendees can also benefit from a new Speed Networking session designed to help build valuable contacts.

Find out more about the event and book your place [here](#) or contact conference organiser Emily Nicholson (emily.nicholson@ami.international) on +44 (0)117 314 8111.

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Polypipe posts H1 profit improvement

UK-based Polypipe has reported strong results for the first half of the year.

The company posted sales of £223 million (US\$270m) – a 6% improvement on the same period last year. At the same time, pre-tax profit exceeded

£31m (US\$38m), an improvement of more than 4%.

Revenue from residential systems – which relies almost exclusively on the UK market – rose by more than 8% to £129m (US\$156m). The key driver here was the acquisition of Manthorpe. Earlier

this year, Polypipe commissioned a fourth high-output multi-layer extrusion line at its plant in Broomhouse Lane, for making PVC pipe with recycled cores.

At the same time, commercial and infrastructure systems grew more than 3% in the same period to exceed £94m (US\$114m). Around 80% of this market is derived from the UK.

“The business has performed well in the first half – with good revenue growth and improved margins,” said Martin Payne, CEO of Polypipe. “With an encouraging start to the second half of the year, our profit expectations for the year remain unchanged.”

➤ www.polypipe.com



Polypipe reported a 4% increase in pre-tax profits for the first half of the year

Canadian polyolefin planning

Newly-incorporated West Coast Olefins plans to build a \$5.6bn petrochemical facility on a 160 hectare site at Prince George in British Columbia, Canada. The project will include a world-scale ethylene plant and PE facility, with most of the PE targeting the Asian market.

Following the formal regulatory approval process, the company expects to make a final investment decision by the end of 2020.

West Coast Olefins expects construction to take three years to full commercial operation, including public engagement and consultation processes.

➤ www.westcoastolefins.com

Gathering data boosts plastics performance

Aimplas, the Spanish plastics research organisation, is to host a series of demonstrators at its pilot plants to show Industry 4.0 for data collection, monitoring, sensorisation and control.

The installations are part of the G4ND4LF project, which aims to develop a smart system for the plastics sector – offering a comprehensive vision of materials performance all along the value chain, including manufacture of raw materials, the synthesis and compounding processes, and subsequent transformation by extrusion or other methods.

Aimplas will install

demonstrators on various production lines. The data collected will be used to carry out further research and optimise the design and development times of

different materials and products. The data can also help predict the performance of new materials inside the machinery without the need for

production trials.

The aim is to provide companies in the sector with a demonstrator that enables them to identify the technologies that could be introduced into production processes at their own companies. The data will also feed the system and generate a robust, reliable structure in terms of the response to end users, says Aimplas.

In the first year, the project will focus on automated, centralised collection of manufacturing data. The final aim is to be able to apply the results obtained from these data.

➤ www.aimplas.es



Aimplas will use Industry 4.0 equipment to gather data on several of its pilot plant lines

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Italy's machinery imports and exports dip in first half 2019

Italy's imports and exports of plastics machinery took a dip in the first half of this year.

Imports of core machinery were 17% lower than the same period in 2018, while exports fell by 5% in the same time.

Amaplast, the trade body that represents machine makers, revealed the trend but did not release specific figures. It analysed foreign trade statistics published by ISTAT.

Amaplast added that trade with its largest historical trading partner, Germany, has also contract-

ed this year. The supply of Italian machines to Germany fell by 26%, while imports of German machinery fell by one-third.

In the first six months of 2019, Italian processing companies imported less machinery from their major European suppliers - Germany, Austria, France and Switzerland - than they did from Asian suppliers, especially China and Japan.

Europe, which remains the largest export market, fell in market share due to a 9% dip in overall value. This was caused mainly by

reduced sales in markets outside the EU, especially Turkey - which fell by 37%.

NAFTA remains the second-largest export market, though while sales to the USA grew by 15%, those to Mexico (-12%) and Canada (-39%) fell. Overall, exports to South America fell by 6%, though there were positive results for Brazil, Argentina and Colombia.

Exports to Asia grew by 10% overall, with positive results in China (+39%), Thailand (+55%) and Indonesia (+110%). Sales to

India slowed slightly by 1%.

Opinions collected by Amaplast over the summer - from companies in this sector - showed a less than optimistic outlook. Overall, there is concern for the tendency towards a postponement or reduction in customer orders.

"Current market conditions are not encouraging, but companies in the sector have great hopes for K2019, where there will be many Italian exporters," said Dario Previero, president of Amaplast.

➤ www.amaplast.org

Formosa in major PVC expansion

Formosa Plastics Corporation, Louisiana (FPC) is to invest \$332m to expand PVC resin production by around 136,000 tonnes/yr at its site at Baton Rouge, Louisiana, US.

The project will include new machinery and equipment for the PVC resin unit, according to Louisiana Economic Development, as well as the upgrade of a halogenated acid unit for internal production of vinyl chloride monomer and utilities for the new operations. These should be launched in late 2021 or early 2022.

➤ www.fpcusa.com



Maguire's new Taiwanese subsidiary will serve the growing local market for plastics ancillaries

Maguire opens subsidiary in Taiwan to serve local demand

Maguire Products has established a new subsidiary in Taiwan to serve the growing local market for plastics ancillary equipment.

The new company will serve local customers with sales and technical support for a range of products, including blenders, dryers, gravimetric feeders, loading

systems. It will stock a number of fully assembled machines and a complete range of spare parts.

The subsidiary, in Taichung City, will include a demonstration facility.

"We have created Maguire Taiwan to provide direct service to a market of considerable size and

importance that until now we have served through agents," said Hubert Nerlich, managing director of Singapore-based Maguire Asia.

The new company's general manager, Danniell Hsieh, will head a staff of factory-trained sales and technical service specialists.

➤ www.maguire.com

Electrofusion guides from PPI

The US-based Plastics Pipe Institute (PPI) has published two guides detailing the steps for electrofusing joints and couplings for HDPE pipelines.

Published by the Municipal Advisory Board (MAB), the documents are: MAB Generic Electrofusion Procedure for Field Joining of 12-Inch and Small Polyethylene (PE) Pipe (MAB-01-2017); and MAB Generic Electrofusion Procedure for Field Joining of 14-inch to 30-Inch Polyethylene (PE) Pipe (MAB-02-2017).

MAB serves as an independent, non-commercial adviser to PPI's municipal and industrial division.



Two new guides from PPI provide the correct procedures for electrofusing joints and couplings for HDPE pipelines

pal and industrial division.

Both documents - which are available free from PPI's website - provide the proper procedures, equipment, installers' training, testing, inspection and

qualification for electrofusing HDPE pipe. Those who are trained and qualified in accordance with these MAB documents demonstrate that they also have the knowledge and understand-

ing of the general procedures and techniques of ASTM F1290.

"These publications are extremely important for the owners and installers," said Camille George Rubeiz, co-chair of the Municipal Advisory Board and senior director of engineering in PPI's municipal and industrial division.

"The sections on pipe preparation - while simple - are among the most important steps to follow when electrofusing pipe sections with coupling or adding a tapping tee, service saddle, branch saddle, flex restraint or other fitting."

➤ www.plasticpipe.org.

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Inspecting extruded pipes helps producers to maximise quality - by picking up on defects - and increase profits, by ensuring that products do not use excess material

Pipe inspection helps boost profit and quality

Plastic pipes – especially large-diameter ones – contain a lot of material. For this reason, dimensional measurement is a critical way of ensuring that the pipe is not using excess material.

Inoex says that a leading German pipe manufacturer has begun using its terahertz technology to measure pipe wall thickness.

Westfälische Kunststofftechnik (WKT) is using handheld Warp technology from Inoex to check the thickness of its pipe. Warp portable uses a chip-based radar technology to make wall thickness measurements of extruded mono layer pipes and large-sized sockets, as well as plastic sheets. It can perform inline and offline random measurement checks within seconds, and very accurately, says Inoex.

The battery-powered handheld system has a running time of around eight hours, which met

WKT's needs. Measuring pipe thickness directly at the end of the vacuum tank gave the option to intervene at a very early stage – leading to large savings. Historically, the company had used ultrasonic measurement to check dimensions at the end of the line.

Warp portable offers non-destructive and contact-free measurement of wall thicknesses between 5 to 110mm.

Türkayn Güneyik, operations manager for PE at WKT, says the simple handling is the key benefit. Two positioning aids – for different pipe diameters – make it easy to position the device correctly. Measurement is triggered at the push of a button. Within seconds, the wall thickness and timestamp are available on the display. An internal acceleration sensor provides extra information on the measuring angle of the device towards the pipe. ➤

Main image
WKT is using handheld Warp technology from Inoex to check the thickness of its PE pipe



Right: The browser-based software of Sciteq's Sigma system is accessible from many types of mobile device

This information helps the line operator carry out a fast manual centring of the extrusion die. Logged data can be exported via USB stick or optionally downloaded by WiFi on a local computer. WKT uses this data for measuring data protocols in its data base.

Warp portable can measure all common types of plastic, including PE, PP, PA and PVC.

Under pressure

Sciteq of Denmark says that its new Sigma system includes both hardware and software to perform pressure testing of plastic pipes and fittings.

Static pressure stations are used for static pressure and low volume burst tests of small to medium sized samples. Up to 50 individual pressure stations can be installed in one cabinet.

The company says that the system will "help customers move towards Industry 4.0". It offers cloud-based communication and data storage, as well as local data storage according to customer preferences.

The new, browser-based software is intuitive, with recipes that are easy to set up. It is accessible from many types of mobile device and is set with four user levels. There is also optimised real time monitoring and logging, enabling many analysis options of test results.

"The advantages of the new equipment include optimised control, greater efficiency in testing and improved data analysis," said Thomas Skipper Klausen, CEO of Sciteq.

The Sigma system offers high flexibility and modularity. If test requirements change, it allows for fast and easy servicing and upgrading.

"We are not only introducing new hardware, but a new approach to the operation of pressure testing," he said.

For smaller layouts, Sciteq offers Sigmalite, a compact plug-and-play test unit with five fixed pressure stations.



7 technology have been adapted to the measurement of contoured products. The system measures around the complete circumference of the products using a single sensor head.

AllRoundDia DV gives gapless, 360° measurement of round and oval contours. It does this by using a camera-based, laser-triangulation method. While conventional, axis-based measurements using the shadowing method cover only six single points, AllRoundDia's optical sensors capture 8 million pixels, says the company.

"Each individual point can be decisive for the quality of the product," said Jürgen Philipps, managing director of Pixargus. "Although the single-point method is very accurate, it does not capture the area between the points, and detects only defects of relatively large topographic extension."

For a 1mm defect on a product 10mm size, inspecting at only six spots would leave 90% of the surface uninspected. AllRoundDia, however, inspects each point with the same level of reliability and repeatability, he says.

"This is gapless inspection in the true sense of the word."

The specially developed lighting concept ensures that the field of vision and measuring field are homogeneously lit. For this reason, flaws in the material – such as fissures, inclusions and other high-contrast defects – are reliably captured.

Close control

Beta LaserMike, part of NDC, will display its complete plastic pipe and tube measurement and control system with gauges in place – from the extruder through to the puller station.

The integrated system enables manufacturers to improve product quality, increase productivity, boost process reliability and realise material

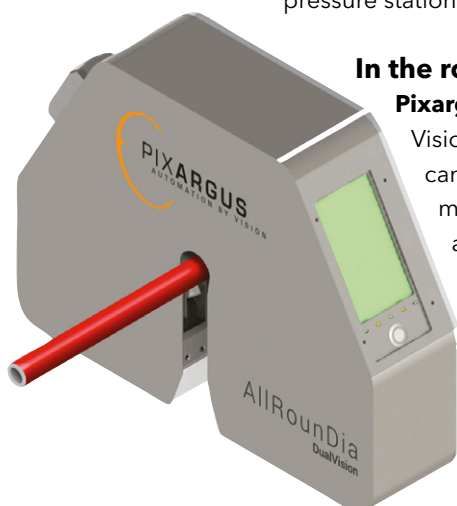
Below: Pixargus says its AllRoundDia DV is the first single system to perform simultaneous contour measurement and surface inspection of round products

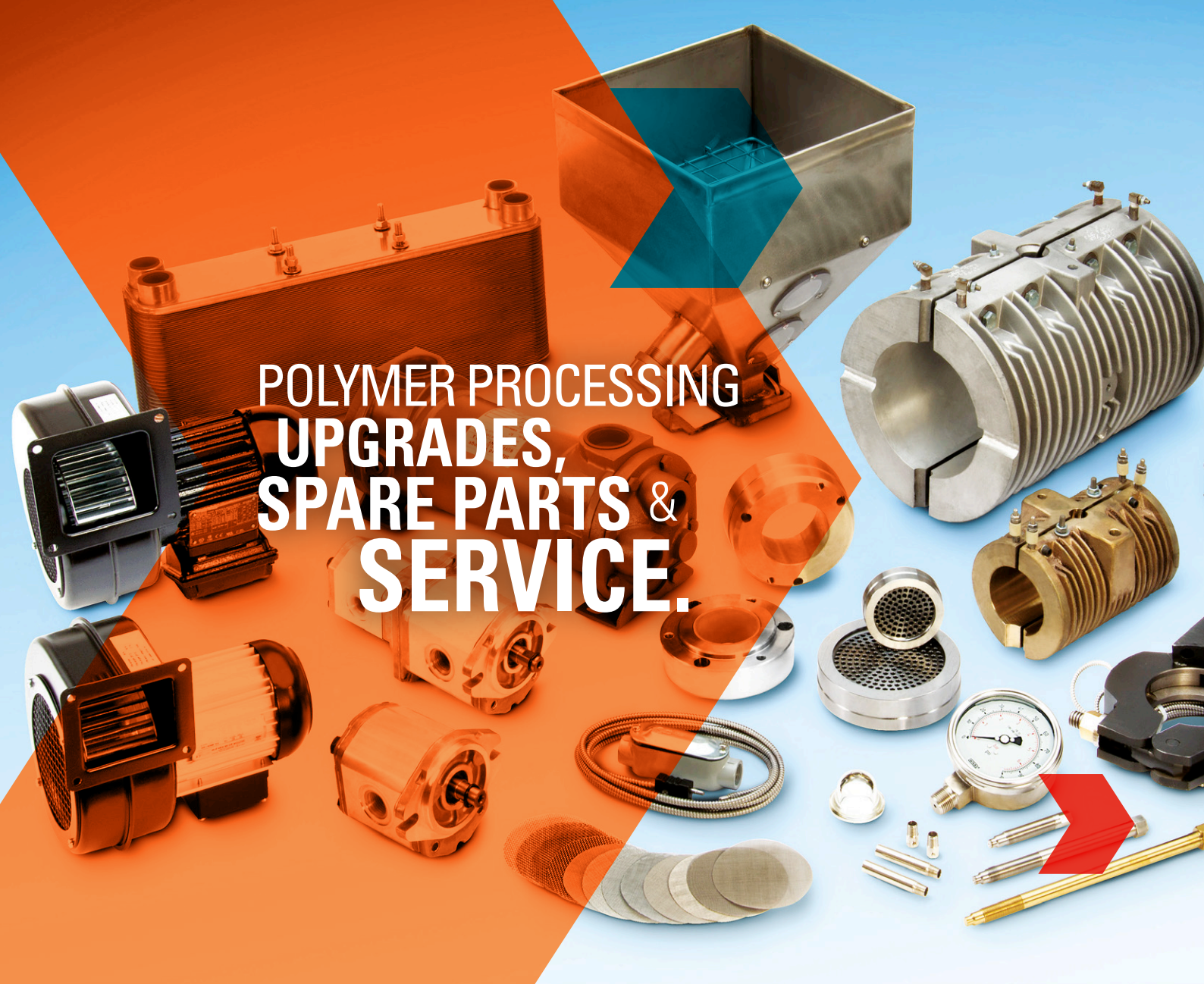
In the round

Pixargus says that its AllRoundDia Dual Vision is the first single-unit system that can perform complete contour measurement and surface inspection at the same time.

This system, which has a compact design, measures and inspects pipe, tubes and cables with a 100% defect detection rate, says the company.

The hardware and software from the company's ProfilControl





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Zumbach's Rayex system uses X-rays to measure pipe wall thickness, eccentricity, diameter and ovality

savings, according to the company.

The end-to-end system includes the AccuScan 6000, which it says is the industry's only four-axis diameter and ovality gauge for measuring products up to 50mm. It provides comprehensive measurement coverage around the circumference of the product to deliver benefits such as high single-scan accuracy, ovality accuracy and flaw detection accuracy.

The AccuScan 5000 Series two-axis diameter and ovality gauge will also be on display. Both models work at 2,400 scans per second per axis.

Its UltraScan Pro ultrasonic gauge provides fast, precise measurements of product wall thickness and concentricity. Manufacturing processes benefit from high-speed tolerance checking, multi-layer measurements (up to four layers), enhanced Ethernet connectivity via built-in web server and other advances. UltraScan's patented 'Snap' technology, with full-automatic setup and calibration, allows manufacturers to make fast process adjustments to

avoid scrap and ensure quality results.

Also on display is the latest LaserSpeed Pro non-contact gauge for measuring the length and speed of products. LaserSpeed Pro delivers high accuracy, making it an ideal replacement for encoders, says the company.

The LN3015/LN3040 lump and neck-down detectors quickly and reliably spot product flaws before they become costly production problems. Fast-sensing and processing technology instantly detects sudden changes in the product diameter (up to 40mm) to catch the smallest of flaws.

For off-line sample and cut part inspection, BenchMike Pro provides fast, accurate dimensional measurement of inner diameter, outer diameter and wall thickness of pipe and tube products. It offers Ethernet and USB connectivity.

Pipe dimension measurement

Sikora will use K2019 to showcase its Centrewave 6000/1600 for the first time.

The model, which measures the dimensions of hoses and tubes up to 1,600mm in diameter, is based on millimetre wave technology. It measures continuously over 360 degrees of the circumference of the pipe's wall thickness, diameter, ovality, inner profile and sagging.

"The Centrewave 6000 does not only impress because of its dimensions, but foremost due to its benefits resulting from the technology for the extrusion process," said Christian Schalich, head of sales for hose and tube at Sikora.

Nominal dimensions are quickly reached, start-up scrap is avoided, and processes are optimally controlled, said the company. Further-

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Right: Sikora's Centrewave 6000 uses millimetre wave technology to measure the dimensions of large pipes

more, the system does not require any coupling media, as it measures precisely and independently to external influences – such as temperature or plastics material – and does not require calibration.

"The device also automatically determines the exact refractive index," said Schalich.

It defines the intensity and the speed at which radiation travels through the material, which helps to measure accuracy. Manual input of modifications of the production conditions is not required, says Sikora.

Ultrasonic measurement

Zumbach of Switzerland will showcase a range of its technologies that measure pipe and tube dimensions quickly and accurately.

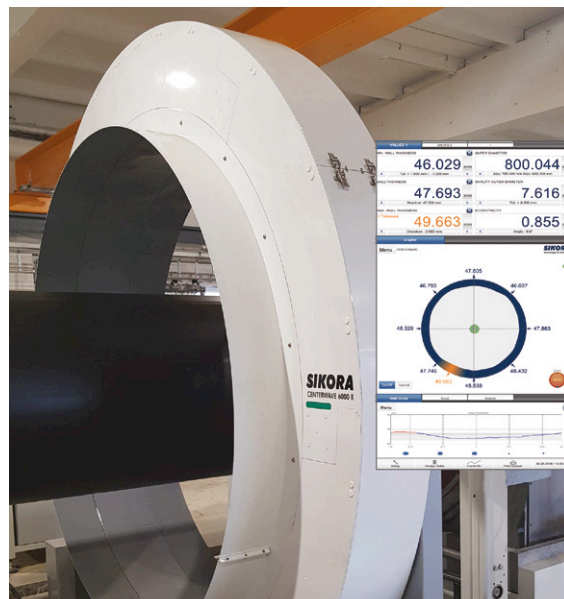
Its Wallmaster is a based on ultrasonics, while its Rayex system uses X-rays to measure wall thickness, eccentricity, diameter and ovality. The optimal technology can be selected for every application and specific requirement, it said.

In addition of gaining control over the production process and product quality, full data acquisition and production transparency helps customers as they move towards Industry 4.0 implementation, the company added.

Other devices such as its Odac laser diameter gauges, KW lump-neckdown detectors and non-contact length measurement systems further improve process control, and provide full transparency of the production process – including for complex multi-layer products.

The Odac laser diameter gauge can make up to 9000 calibrated measurements per second. A permanent, precise diameter and ovality measurement in combination with flaw detection – all in one unit – makes it ideal for tube and hose extrusion lines.

Tailored to the application, a selection of 1-, 2- or 3-axis Odac laser diameter gauges are available. These can be supplied in combination with powerful Usys display and control systems, which



offer statistics, process control and data archiving.

At the same time, its Profilemaster systems offer full cross-section measurement of plastic and rubber pipe and profiles directly in the production line. All relevant dimensions such as diameter, width, height, angle and radii are permanently measured plus statistics and process information recorded for traceability reasons.

Finally, its OPC UA allows easy, transparent data management: the universal communication protocol is commonly used for industrial automation. Zumbach says it is the protocol of choice for Industry 4.0 integration and data exchange, with relevant systems and process control software solutions.

CLICK ON THE LINKS FOR MORE INFORMATION:

- > www.sciteq.com
- > www.inoex.de
- > www.pixargus.com
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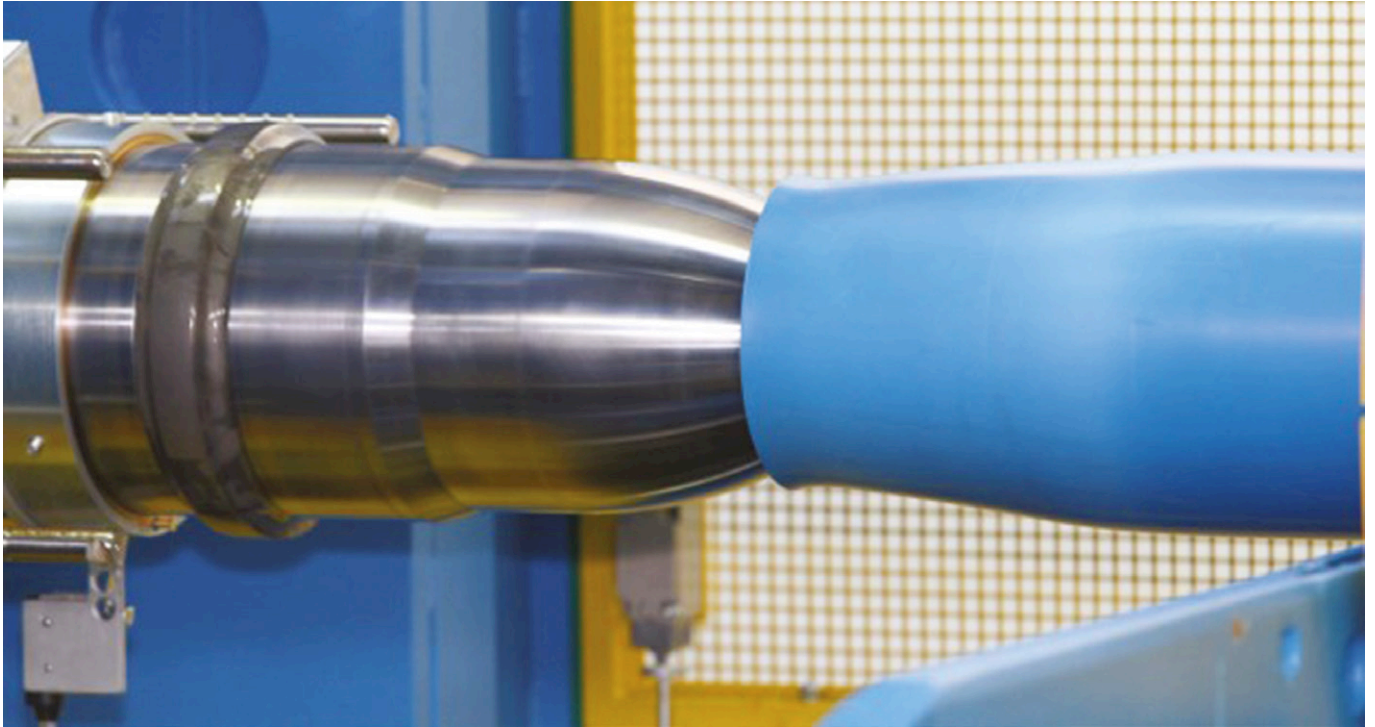


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Strong stuff: latest advances in PVC-O

Developments in oriented PVC (PVC-O) include new standards, production facilities – and the use of orientation in chlorinated PVC

Oriented PVC (PVC-O) is gaining increasing attention as a pipe material with increased strength and longevity.

At K2019, **Molecor** will present its latest developments and technology for making PVC-O pipes and fittings.

The technology allows the manufacture of PVC-O pipes and fittings with a significant energy saving as well as with a great efficiency in the use of resources, says the company.

Molecor will also present its latest product development, C-PVC-O pipes, which are suitable for transporting fluids at high temperatures or in hot environments.

The development of C-PVC-O is the result of Molecor's research and has been possible thanks to collaboration with Lubrizol, with the raw material TemRite 88703. To develop C-PVC-O, the M-OR-P-1640 model was adapted to work on a higher

range of temperatures than usual. Tests showed that the resultant material had better mechanical properties, superior even to those specified in the standard.

C-PVC-O becomes another option in the pipe sector with the possibility of being applied in civil works when working in environments with high temperatures.

Indian expansion

India-based **Chemfab Alkalix** has begun manufacturing and selling PVC-O pipe and fittings.

The company, which is mainly a chlor-alkali producer, began PVC-O production at a new plant in Sri City in Andhra Pradesh, which opened late last year.

It offers the pipe in six different diameters – from 110 to 400mm – in wall thicknesses of 2.4 to 8.8mm.

The plant currently runs a single line – with a

Main image:
Sica's Starbell
is a belling
machine for
PVC-O pipe,
which has a
patented
forming system

Chlorine protection

While PVC-O has higher strength than standard PVC, another modified grade of the material - C-PVC - offers higher temperature resistance.

The material is a chlorinated version of PVC - meaning the raw material incorporates more chlorine

atoms into the molecular structure.

The larger size of chlorine atoms helps protect the carbon chain from conditions that typically weaken other thermoplastics - such as heat.

Alfro Bonato, technical sales manager at **Bausano**, told delegates at

the recent *Plastic Pipes in Infrastructure* conference that C-PVC retains a higher pressure rating than PVC at elevated temperatures. At 60°C - the maximum working temperature of PVC - C-PVC still has a pressure rating of 0.50. (PVC has this pressure rating at about 43°C.)

capacity of 3,000 tonnes/year - and the company expects to expand to six lines in future.

Chemfab Alkalis is using machinery from Molecor to make the pipes.

"Our strategic foray into the manufacturing of PVC-O pipes is driven by the huge demand that we see coming up for advanced and efficient pipes as a result of the large-scale investments being made by the Government of India to strengthen water connectivity," said Suresh Krishnamurthi Rao, chairman of Chemfab Alkalis.

Patented belling

Elsewhere at K2019, **Sica** of Italy will show Starbell - its belling machine for PVC-O pipe.

The machine has a patented forming system featuring a special heating process and final forming on a mechanical mandrel.

There are two ovens - one hot air, and one contact oven. The combination of the two systems produces final heating and optimum deformability for forming a socket compatible with the pipe's resistance class, says Sica.

The machine also has an hourly production rate that can keep pace with the production rate of automatic PVC-O production lines.

Other features include:

- Socket cooling with ventilated air;

- Socket forming with EUR-type gasket seat and Z-joint;
- Processing of PVC-O pipes up to class PN32;
- Simultaneous processing of pipes of different lengths; and,
- Socket-edge upsetting flange in forming station.

European standard

The **European Committee for Standardisation** (CEN) has published a Europe-wide standard for PVC-O pipe.

EN 17176 PVC-O piping systems for water supply and for buried and above-ground drainage, sewerage and irrigation under pressure, adopted in the 28 EU member states and in other countries, creates a new Europe-wide voluntary standard for those manufacturing PVC-O pipes, where previously there had been a variety of non-aligned national standards.

The standard allows specification for PVC-O piping systems intended for water supply use, pressurised (up to 25 bar) drainage, sewerage, treated wastewater and irrigation systems, either underground or above-ground where protected from direct sunlight. It applies to drinking water piping systems under pressure, up to 45°C, as well as to pressurised wastewater and irrigation.

Monica de la Cruz, chair of CEN/TC 155 - the committee for plastic piping and ducting systems, where the new standard was developed - said: "Teppfa has been instrumental in helping to bring this new standard into being. It will provide reassurance to specifiers that PVC-O pipes and fittings defined within the standard are of a good quality and fit for their designed purpose."

CLICK ON THE LINKS FOR MORE INFORMATION:

- www.molecor.com
- www.chemfabpvco.com
- www.sica-italy.com
- www.cen.eu
- www.teppfa.eu
- www.bausano.com

Below:
Molecor's
C-PVC-O
technology,
which has been
extensively
tested, will be
shown at
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Extruders' guide to 2019

Part 2: Materials and additives

The world's biggest and most international plastics trade fair opens in Dusseldorf in Germany this month. K2019 is the place to see the latest innovations in plastics materials and processing but it is a big event that's best approached with a plan – our pre-event coverage aims to help you get the most from your time there.

This month we take a look at some of the planned materials and additives introductions likely to be of interest to extrusion companies. In this section, we provide details on some of the newest developments in resins, compounds, plasticisers and pigments – and also take a look at recycling equipment.

K2019 will be a big show. The previous event in 2016 attracted 3,285 exhibitors and set a new attendance record of 232,053 (up by 5.5% on 2013 numbers). The mood among visitors back then was very positive – the plastics industry had been going through a seven-year investment boom.

The picture for 2019 is quite different: global markets are slowing, protectionist economic policies are emerging, the impact of the UK's departure from the EU remains unclear, the automotive industry is facing a technological upheaval, and plastics are finding themselves in the environmental firing line.

Against such a background, it is no surprise that machinery makers have dialled down their expectations: VDMA, which represents German machinery manufacturers, is forecasting at least a 10% decline in production value across its members this year, reversing a decade of growth. That said, the K show has always been a shop window for the latest technologies and a place where business is done – whatever the prevailing market conditions. That is likely to remain the case for K2019.

If you are planning to attend the show but are yet to finalise your travel and accommodation, it is not too late. But you should act fast. There are some useful weblinks at the foot of this page and plenty more in the 'First Look' article in our August edition that may prove helpful <http://bit.ly/2ksx488>.

The Pipe & Profile Extrusion and AMI magazines team will be at the show for the full eight days and will be gathering information for our post-event coverage in the November/December edition. We will also be reporting on the biggest news and innovations as they happen via our @PlasticsWorld feed on Twitter. If you want to be sure you keep in touch with developments join the more than 20,000 people already following us.

You may also be able to catch up with our editors and sales team on the AMI stand at the show – you can find us on Stand C11 in Hall 7. We will have information about our magazines, conferences, databases, consulting services and our new North American and European expos available. Some of our industry experts will also be giving daily presentations covering compounding, masterbatch and recycling. You can learn more about those here https://go.ami.international/book_ami_k2019demo/

Dates: 16-23 October 2019

Venue: Messe Dusseldorf, Dusseldorf, Germany

Hours: 10:00-18:30 daily

Tickets: One-day €75, three-day €155 (€49/€108 online).
All include free local transport and on-site wifi

Organiser: Messe Dusseldorf

Website: www.k-online.com

Use the following links to go direct to essential show information:

K2019 hotel booking - <http://bit.ly/k2019hotel>

K2019 online ticket purchase - <http://bit.ly/K2019tickets>

K2019 exhibitor search - <http://bit.ly/K2019exhibitorsearch>

K2019 iOS/Android apps - <http://bit.ly/K2019mobile>



Right: Baerlocher will highlight its expertise in plastics recycling at K2019

Baerlocher will showcase its expertise in plastics recycling during K2019.

Its stand will feature its Baeropol T-Blend products, which can help solve various recycling issues. These dust-free additives are based on Baerlocher's RST-platform that works with traditional antioxidants. The company will also share its latest RST advancements – including new grades that offer enhanced properties previously not associated with traditional recycling.

The company will also share successful case studies in a range of areas. These include showing how Baerlocher's additives can help upstream polyolefin companies offer resins with recycled content, and improve the durability of agricultural drainage pipe (made from recycled resins) to extend its useful life.

Live demonstrations by recycling specialists Erema and APK will show how Baerlocher additives can enable the upcycling of low-value, difficult-to-recycle consumer film waste into a material suitable for profitable products used in the construction sector.

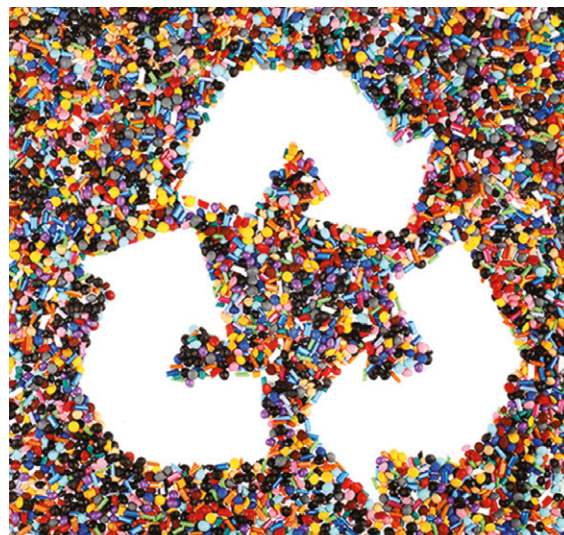
➤ www.baerlocher.com

BASF is to expand its range of Ultradur PBT materials with an extrusion grade. An interdisciplinary team of chemists, physicists, and engineers took the product from lab to reality.

Ultradur B6551 LNI combines the typical characteristics of PBT, including high melting point, low water uptake, high dimensional stability and good barrier properties. To date, the melt strength of PBT was not sufficient to make it suitable for extrusion. By connecting and branching the polymer chains via tailor-made additives, BASF experts have boosted the melt strength. This has made Ultradur B6551 LNI appropriate for pipes, profiles and mandrels.

The material offers good mechanical properties, is easy to colour, and even allows foaming. This makes it suitable for use in a range of extrusion

Below: BASF has raised the melt strength of its Ultradur PBT, making it suitable for extrusion



applications across several industries. The material is produced in Schwarzeide, Germany, and is available worldwide with respect to national regulations.

➤ www.basf.com

At K2019, **Clariant** will highlight several collaborative sustainability projects.

One, carried out with the Finnish oil refining company, Neste, recovers fat residues and discarded cooking oils and uses them as a source of renewable hydrocarbons. The company says it will reveal more details at K2019 – including details of new products for plastic applications based on mass-balance certification for usage of renewable polyolefins.

Clariant has also developed new black colorants for plastics that can be identified by NIR sorting devices. This new range can be used for various polymers (including polyolefins, PET and PA) for a number of applications.

Clariant says is also taking its EcoTain label to the next level. It is being expanded to include EcoTain partnerships that will foster collaboration between at least three partners in the value chain to create sustainability and business impacts, and advance environmental protection and the circular economy. At K2019, Clariant will invite companies to collaborate specifically on one particularly challenging aspect of recycling.

➤ www.clariant.com

Croda recently opened a £27 million (US\$33m) amide manufacturing facility at its site in the UK. This doubles the site's capacity and will ensure long-term global security of supply and consistent product quality, says the company.

The new site will make a range of Croda's amides, including Crodamide slip and anti-block,

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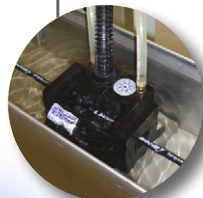
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Get In Control





Above: Evonik will showcase a range of its innovative materials at K2019

Incroslip high stability slip and torque release, and IncroMold release and anti-scratch additives.

The company will showcase its Ionphase permanent anti-static additives at K2019. Ionphase inherently dissipative polymers offer an immediate and permanent effect that is not dependent on humidity. They provide uniform, homogenous distribution in the host polymer and offer high processability and surface quality. The additives are suitable for several processes, including extrusion, and allow for compliance with key industry standards for EPA and EX areas. There are multiple grades available to suit different polymer types including polyolefins, styrenics and PC blends.

Croda's smart materials business is also home to a range of bio-based building blocks to enhance the performance of engineering polymers like COPE/COPA and polyimides.

➤ www.croda.com

Dow will showcase its recycling portfolio at K2019 – including details of a new agreement with Netherlands-based Fuenix.

Fuenix will produce pyrolysis oil feedstock – made from recycled plastic waste – which Dow will then use to make new polymers at its production facilities at Terneuzen, The Netherlands.

The agreement will help to increase feedstock recycling – the process of breaking down mixed waste plastics into their original form to manufacture new virgin polymers. The polymers made from the pyrolysis oil will be identical to those made from traditional feedstocks and can be used in the same applications – including food packaging.

This will contribute to Dow's commitment to use at least 100,000 tonnes of recycled plastics in its products sold in the European Union by 2025.

"Plastics are too valuable to be lost as waste and should be part of the circular economy," said Diego Donoso, business president for Dow Packaging &

Specialty Plastics. "This partnership is an important next step in moving towards the sustainable production of circular polymers."

➤ www.dow.com

Evonik will present its portfolio of high-performance polymers and speciality additives at K2019. These include its Vestamid polyamides, which are used in a range of applications including consumer goods, as well as its Pebax PA12 elastomer.

The company is making a €400 million investment to increase its total capacity of PA 12 by over 50% between now and 2021.

Another important material is its range of Dynapol speciality co-polyesters – which are used in flexible packaging for food, and for internal coatings for cans. Evonik recently expanded production of the material at its Witten site in Germany. Aquafil Engineering helped Evonik build the new production plant.

"Adapting our technology to the particular requirements of the Evonik process, and integrating it into existing structures, proved to be an enormous challenge," said Dirk Karasiak, managing director of Aquafil.

The technology ensures that the materials can now be produced more efficiently. The partners intend to continue collaborating in the development and construction of plants for production of speciality co-polyesters.

Also at K2019, Evonik will showcase its speciality additives for masterbatch manufacturers, compounders, and processors include crosslinkers, comonomers, and dispersing agents for pigments and fillers, as well as additives for process and performance improvement. The resulting modified surface characteristics improve mechanical properties including scratch resistance, flow, block resistance and anti-caking effects.

➤ www.evonik.com

Gabriel-Chemie will present a number of new additive solutions and product demonstrations – in areas including colouring, printing and detection.

One new product series, called Taggant Technology (TagTec), is a 'marker' that is added to a formulation and can be used to identify individual parts. The unique molecule acts like a 'fingerprint'. It can be used in all stages of a product cycle – including manufacturing, quality management, and even in raw materials at the end of a product life.

The colours and materials of its Colour Vision sustainability range showcase dry colour and surface impressions. These were realised on the basis of PCR and PIR polymers. Also, new additives

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Right: One grade of Akro's Akromid material has been used to make valves for cold water applications, for plastic pipe networks

have been used which, among other features, enable detectability in the recycling stream. The colour spectrum includes intense, vibrant red through to marble-effect blue shades.

Detection in the recycling stream requires it to be tracked using near-infrared systems. The masterbatch must be made using special pigment formulations that allow this - as well as being food contact approved and laser markable. The masterbatch can be processed by extrusion and other methods.

A laser additive masterbatch enables contact-free, permanent marking, labelling and decoration of plastic parts without using printing ink or solvents. Markings can be made on soft, coarse, stepped and curved surfaces and are resistant to abrasion and chemicals, as well as being lightfast. Gabriel-Chemie has an ongoing cooperation with BeLaser, and will demonstrate this at K2019 in a separate laser area.

➤ www.gabriel-chemie.com

Ineos Styrolution says a major theme for it at K2019 will be demonstrating the recyclability of polystyrene. The company has a number of projects involving both chemical and mechanical recycling of PS. Its work in depolymerisation led the company to announce in April it had produced lab-scale quantities of general purpose PS from 100% recycled styrene monomer.

At about the same time, it signed a joint development agreement with Canada-based GreenMantra. The agreement aligns GreenMantra's patented catalytic depolymerisation technology with Ineos' manufacturing infrastructure to convert waste PS into chemical monomer building blocks - which will replace a portion of Ineos' virgin monomer feed in its polymerisation process.

➤ www.ineos-styrolution.com

Below: Gabriel-Chemie will present a number of new additive solutions, including its Colour Vision sustainability range



German compounder **Akro-Plastic** (a subsidiary of **KD Feddersen**), will showcase a variety of its products at K2019, in collaboration with a number of sister and subsidiary companies.

Although injection moulding grades are not normally of interest to extruders, the company will showcase its Akrotek PK and Akromid T5 series of compounds - which meet standards for contact with drinking water, according to KTW/W270, ACS, NSF 61 and WRAS up to 85°C. One grade of Akromid has been used to make valves for cold water applications, which will form part of a plastic pipe network. Test reports comprise all product variations between Akromid T5 non-reinforced to 50% glass fibre reinforced in natural and in black, as well as Akrotek PK-VM 8 non-reinforced to 50% glass fibre reinforced, also in natural and black.

➤ <https://kdfeddersen.com>

➤ www.akro-plastic.com

Milliken will highlight its partnership with Chicago-based PureCycle Technologies - which will advance closed-loop recycling of polypropylene (PP) resin. Using technology developed and licensed by Procter & Gamble, PureCycle plans to open a plant by 2021 that will use a patented recycling method to restore virgin-like quality to waste PP resin.

This will enable the recycled material to become circular, and be reused in its original application - rather than having to be downcycled into lower-value products.

"We have clear priorities to help create a circular economy for plastics," said Herrin Hood, global marketing director of Milliken's plastics additives business. "Improving the recyclability of plastics, replacing single-use plastics with durable reusable plastics, and increasing the use of biopolymers will help create a more sustainable plastics industry."

➤ www.milliken.com

Oman Oil and Orpic is to outline its plans for polyethylene (PE) and polypropylene (PP) expansion.

An investment by Liwa Plastics Industries Complex (LPIC) will see production of PE and PP increase to 1.4 million tonnes by 2020. The



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Above: Pevalen Pro will initially be available with up to 40% renewable content

portfolio will include LLDPE, HDPE and PP.

"We are shaping possibilities across the packaging, infrastructure, household and appliances, agriculture, and healthcare industries," said Talal al Awfi, chief commercial officer at the company.

➤ www.orpic.om

Perstorp has developed a non-phthalate plasticiser called Pevalen Pro, which it will launch at K2019.

The material will initially be available with up to 40% renewable content - with plans to make it fully renewable in future.

The company says this will give flexible PVC an environmental boost, including a lower carbon footprint. It adds that the renewable polyol ester also provides superior performance.

Jenny Klevås, global marketing and product manager for polyol ester plasticisers, said: "We believe that flexible PVC with Pevalen Pro offers precisely what brand owners and consumers are looking for: a high-performance product with a significantly better environmental footprint."

Perstorp says that Pevalen - which was launched in 2014 - has high plasticising efficiency (as less material is required), faster processing (so less energy is needed), low volatility and high UV stability (which prevents premature ageing).

Pevalen Pro is a direct replacement for Pevalen, making it very easy to switch to. The renewable grades are made under the Mass Balance concept and backed by third-party ISCC Certification, says Perstorp.

➤ www.perstorp.com

Plastika Kritis - part of the **Global Colors** group - has developed a range of biodegradable black masterbatches based on PLA, PBAT and selected carbon black of high purity.

Kritilen Bio4420P and Kritilen PL 8430 can be used for extrusion and thermoforming of composta-

ble articles, offering high opacity and jetness. They are certified for industrial and home composting.

At its headquarters in Crete, the company recently opened a new R&D centre, hosting the group's advanced research and development activities, as well as pilot plants for optimising process technologies using its masterbatches.

The company has also developed two masterbatches that allow dark coloured plastics to be sorted for recycling using near infrared (NIR) technology. This involves replacing traditional carbon black with alternative black pigments. Kritilen Black 92001 is a general purpose black masterbatch for thermoforming products, while the 92002 grade offers better tinting and black undertone. Both are based on PE carriers and are free of carbon black.

Global Colors itself has developed a number of additive masterbatches for use with recycled plastics.

These include: desiccant masterbatches such as DC 500, DC700 and DC451, which eliminate the humidity that could be present in recycled plastics; deodorant masterbatches such as DEO 588, which absorbs unpleasant odours; and fragrance masterbatches such as 1411 Forest OC and 1412 Lavender OC that chemically de-activate substances that create unpleasant smells.

At the same time, combo masterbatches combine a strong anti-oxidant package (to prevent polymer oxidation) with an odour neutraliser and rheology modifier to improve the flow of recycled polyethylene or polypropylene.

➤ www.plastikakritis.com

➤ www.global-colors.net

French compounder **Polytechs** is to unveil a new range at K2019 - including two new products that raise productivity, called Flow Xpress and Clean Xpress.

Flow Xpress covers two different technologies: the first is a viscosity modifier for polypropylene (PP), and the second is a combination of various process assistance products that reduce the friction and pressure exerted on materials in the extruder.

Clean Xpress is a set of purging compounds for both injection moulding and extrusion, which delivers high efficiency - especially for material and colour transitions, says the company.

➤ www.polytechs.fr

SABIC is highlighting its commitment to circular solutions and reducing plastics waste under the theme of "Making a world of difference together". The group said it will be addressing global trends through the use of bio-renewable and recycled

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feedstock and showcasing product solutions for its customers in multiple industries in the context of recyclability, durability and optimal reuse.

Its family of circular polymers are being produced using a pyrolysis oil feedstock from the recycling of mixed plastic waste. As part of the project, has introduced the alternative feedstock into its Chemelot production site at Geleen in The Netherlands. The resultant certified circular polymers will be supplied to major customers such as Unilever, for use in products including food packaging.

"To enable a genuine shift from a linear to a circular economy, while meeting the needs of our customers, the maximum value of the plastics waste stream needs to be retained and reused," said the company.

The company intends to build a semi-commercial plant to refine and upgrade pyrolysis oil feedstock, which is expected to enter commercial production in 2021.

➤ www.sabic.com

Songwon is to showcase its portfolio of additive solutions - including stabilisers and anti-oxidants - at K2019. It will also launch a new family of flame-retardant synergists based on a proprietary technology designed to combine performance with safety and sustainability.

The company will feature products and solutions for applications in sectors including packaging and films, healthcare and agriculture. Another key feature of its presence will be an increased focus on sustainability.

One recent success was to become one of the first chemical companies to package its products in 20kg PE bags that incorporated 50% recycled PE sourced from its customers.

➤ www.songwon.com

➤ www.sabo.com

Tolsa has extended its Adins range of flame-retardant (FR) additives for PP, PVC, rubber polymer systems, and silicones, and will highlight them at K2019.

The new clay synergists reduce smoke production and improve heat release in PP, PVC, and rubber polymer systems, in addition to the existing FR additives used in other polymers.

The expanded product line includes a new grade that uses titanium dioxide to improve the performance of intumescent systems for PP and coatings. It further stabilises the char in intumescent systems (at dosages of 1-2%), improving the flame-retardant efficiency. In intumescent systems, Adins clay decreases and delays the peak of the heat release rate and acts as a smoke suppressor. It can improve cost efficiency of formulations with intumescent flame retardants.

Key end-use applications include transportation, pipe, coatings, and wire and cable.

➤ www.tolsa.com

Vertellus will highlight a range of its materials technologies at K2019.

These include: performance additives for the PVC, polyester, polyolefin and polyamide industries; intermediates and catalysts for making a broad range of vinyl and sulphone polymers; and adhesives, sealants and gel products that help device manufacturers maintain product integrity in harsh environments.

"We have a great portfolio of products as well as a pipeline of innovations that position us to drive real value for our customers and stakeholders," said John Van Hulle, CEO of Vertellus.

➤ www.vertellus.com

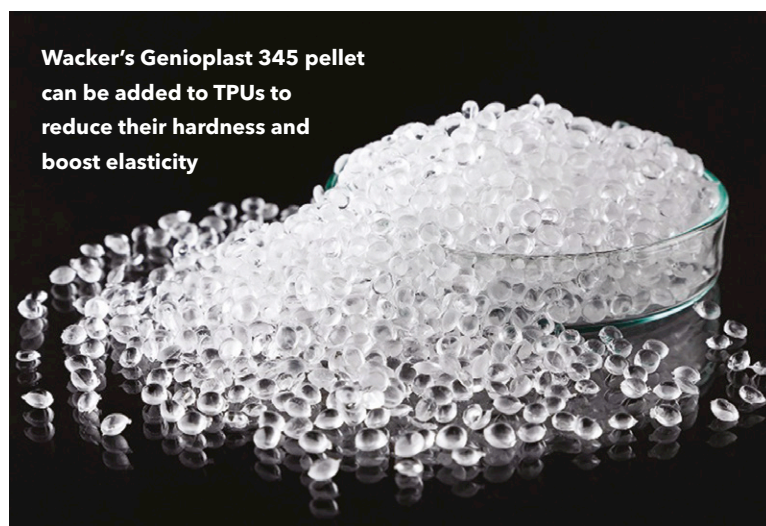
Wacker says that Elastosil R771, its new flame-retardant solid silicone rubber for the rail industry, meets the fire-safety codes for all rolling stock in the European Union since 2018.

The new grade allows manufacturers to produce large-format bellows and profiles in compliance with the new fire-safety codes, says the company. The material can be processed in a variety of ways - including extrusion - to make products including profiles, panels, films and fabric-reinforced silicone sheets.

The grade meets hazard level 2 ("HL2") for the R1 requirement set, which Wacker says is sufficient for most applications in rolling stock.

Silicone elastomers are naturally flame-resistant, generate little smoke in a fire and are halogen-free - so emit no hydrogen chloride when they do burn.

➤ www.wacker.com



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We carried a detailed preview of the polymer machinery and ancillaries of interest to extruders in the September edition of *Pipe & Profile Extrusion* (you can read it [here](#)). Over the next six pages we take a look at some of the latest introductions that missed last month's publication deadline.

Baruffaldi of Italy has developed a new pipe-cutting technology called iCut, which will be shown for the first time at K2019.

The patented device has a number of design innovations, says the company. For instance, advanced software allows it to simplify the entire cutting process. Baruffaldi has also made changes to the cutting and blade entry mechanisms in order to improve performance.

The new device is compact - with fewer moving parts - and can handle a variety of products and materials. At the same time, it has a low energy consumption - working with 220V - and it cuts without producing burrs or swarfs.

➤ www.baruffaldi.eu

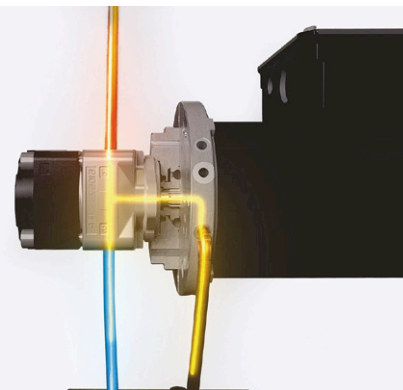
Battenfeld-Cincinnati will unveil its DTA 160 direct cutting machine. With a new cutting unit, both polyolefin and PVC pipes can be cut accurately to length quickly, precisely and cleanly. A highlight of the swarfless unit is that it uses no hydraulics.

The saw carriage is very light, weighing around 40% of a conventional system. It must follow the pipe in line with the process requirements so as not to interfere with or interrupt the continuous production flow. The reduced weight improves the dynamics and enables short pipe lengths to be cut at greater extrusion speeds. The time required for acceleration and deceleration is significantly reduced.

"The greater mobility of the cutting unit is advantageous for short lengths of 50cm or less in particular," said Henning Stieglitz, CTO of BC Extrusion Holding in Bad Oeynhausen, Germany.

The cutting tools are powered by linear actuators. The advantages of this include a reduced number of components - and less maintenance - as well as increased precision and flexibility. The cutting tools rotate around the pipe during the cutting process. Because of this, the tool only needs to be long enough to cut through the wall

The leakage flow of Baumüller's new servo pump can be used to lubricate the gear tooth system



thickness of the pipe, regardless of its diameter. This contributes to the unit's compact design. Quick-action fasteners and centring aids enable cutting blades to be exchanged easily. A wide variety of blade shapes can be used, including triangular and rounded blades to match cut performance to specific customer needs: for instance, a chamfer mill can be incorporated, as it is often needed for PVC pipes.

Multiple, evenly distributed pneumatic clamping jaws grip the pipe simultaneously, ensuring a clean cut thanks to their stable guidance. The small distance between the cutting position and the clamp prevents the pipe from being deformed, further enhancing the quality of the cutting surface. This makes it easier when the pipe is installed, for example, with sleeves, and enables extremely precise pipe-to-pipe connections. Special bearing materials synchronise the clamping jaws to improve the service life of individual components. The overall design of the cutting unit makes it easily accessible for maintenance or conversion work.

➤ www.battenfeld-cincinnati.com

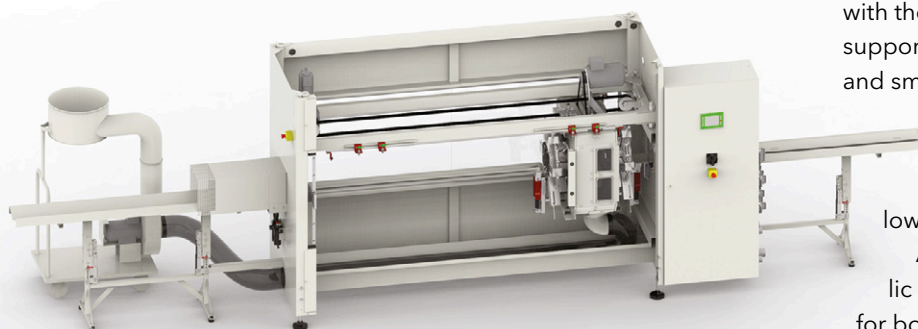
Baumüller has introduced its latest servo pump onto the market, which will be seen at K2019.

The pump can be attached directly to the engine with a gear tooth system. This dispenses with the need for a traditional coupling and pump support. This results in a shorter installation length, and smaller machine installation area. Direct

attachment also eliminates the need for mechanical parts. In this way, the machine manufacturer benefits from lower storage costs.

Another advantage lies in its use of hydraulic oil. The latest version has new connections for both the motor and the constant pump so that

Below:
Battenfeld-Cincinnati's DTA 160 direct cutting machine uses no hydraulics, and claims to work faster than competing systems



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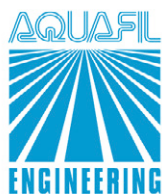


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Right: Bunting will showcase its expertise in magnetic separators and metal detectors

the leakage flow of the pump can be used for the permanent lubrication of the gear tooth system. This eliminates the need for grease lubrication of the internal toothing.

The structural change also offers a further customer benefit. Since the holes for the connections are on both sides, the motor can be installed horizontally or vertically, depending on the application. This means that the motor position can be freely selected and adapted to the respective machine design.

➤ www.baumueller.com

BMSvision will exhibit its developments in the fields of smart factory, machine connectivity, Industry 4.0 and mobile MES solutions.

Web-DU is a web application for managing a group of machines. It can be used to remotely enter rejects or stop cause information from any location. The look and feel of the Web-DU has been reworked in order to match the smart phone looklike user interface used for all other BMSvision data capture terminals.

MyMES is the first real MES App available on Apple and Play Store. It includes a cockpit view and an alert module. The cockpit shows the KPIs and most important production and quality data of the plant while the alert module highlights problem areas that need immediate attention.

Smart Bracelet is a wearable device that tells operators when there is a need to intervene on a machine. As soon as the MES software detects a warning or alarm condition, the operator's bracelet starts vibrating – and the machine number and type of alarm is displayed on its screen.

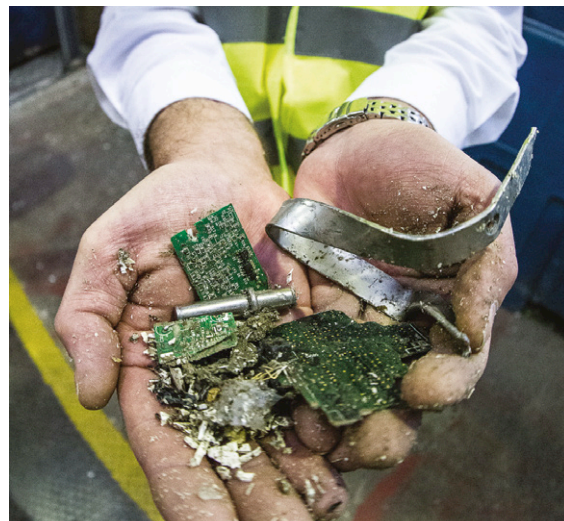
➤ www.bmsvision.com

Bunting Europe will showcase its expertise in magnetic separators and metal detectors for the recycling and plastics industries.

In virgin plastic manufacturing processes, metal damages processing equipment and the quality of the end-product. Recycled plastic commonly has both ferrous and non-ferrous metal contamination, and removal is vital to enable the reuse of the waste material, says the company.

Bunting's portfolio includes a wide range of magnetic separators and metal detectors to detect and remove metals.

Its FF and HF drawer filter magnets are the most commonly used magnetic separators in the plastics sector. Visitors will see both standard and manual-clean (MSC) designs, which all use high strength neodymium iron boron (rare earth) magnets. In operation, plastic beads or shredded plastic waste



falls through the drawer filter under gravity, while ferrous metal contamination is attracted to the surface of the magnets.

The company will display its new FF350 drawer filter magnet in Europe for the first time. The FF350 enables processing material at higher temperatures. High heat is damaging to standard rare earth magnets and the new design maintains magnetic strength at temperatures up to 350F (175°C). There are also changes to the housing, window and access fixings to provide trouble-free operation at these temperatures.

The company will also display the plate magnet (with and without tapered step) and grate magnets (round and square).

"Our experience in solving metal contamination issues in the plastics sector is second to none," said Simon Ayling, managing director of Bunting Europe. "Without removing metal from waste, the recycling of plastic is simply not possible."

➤ www.buntingeurope.com

CMG is launching the new Evoluzione series of granulators for post-consumer recycling. The model on display at K2019 is the 9-tonne EV616. All the Evoluzione granulators are equipped with advanced Industry 4.0 controls to make the machine operation 100% monitorable and manageable. These cover operating temperature, blade wear, productivity, operating efficiency, energy usage, and all functional parameters managed on the machine or remotely with OPC-UA protocol connectivity.

➤ www.cmg.it

Ettlinger will use K2019 to unveil its new ERF 1000 high performance melt filter for very high throughputs in plastics recycling operations. This is Ettlinger's largest melt filter to date: the four filter

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Right: The ERF 1000 high melt filter is Ettlinger's largest to date and can handle up to 10,000 kg/h

drums provide a total of 6,280 cm² of filtration surface – twice as much as the ERF 500, the previous top-of-the-range model. The ERF 1000 removes foreign particles from polymer feedstock containing up to 18% contaminants. The filter can handle a maximum of 10,000 kg/h throughput depending on the application. Ettlinger says ERF filters are now available in four different sizes, starting with the ERF 200 for throughputs up to 800 kg/h.

The new ERF 1000 is self-cleaning and works with a rotating, perforated drum, through which there is a continuous flow of melt from the outside to the inside. A scraper removes the contaminants that are held back on the surface and feeds them to the discharge system. As a new feature, the ERF 1000's four filter drums can be individually replaced without disrupting production. This allows the filter to run continuously and fully automatically, often over a period of several months at a time, and Ettlinger says its advantages include low melt losses and good mixing and homogenising of the melts.

Ettlinger is part of Maag, the manufacturer of gear pumps, pelletising and filtration systems and also pulverisers.

► www.ettlinger.com

Below: Frigel's central adiabatic water-cooling system is installed outdoors, and removes excess heat

Fimic has developed the new GEM melt filter which it is showing on its stand at K2019. This is the first filter from Fimic equipped with two screens to guarantee a greater filtering surface than that of its established RAS700 filter. At the show it will display a GEM unit with two screens and two discharge valves, enabling a filtering area of 5,552 cm² on a single machine.

Fimic says this innovation will increase production from recycling lines while keeping the highest



quality of the final product. It is also simple in operation and contributes to reduced operation costs. The company says the GEM filter enables shorter residence time of the material, lower energy consumption and lower consumption of spare parts, and additionally leads to less waste and a more efficient and faster replacement of the screen.

► www.fimic.it

At K2019, **Frigel** will showcase its Ecodry 4.0 system – which it says takes cooling performance to a higher level.

It says that its 'process synchronised cooling' approach covers many different scenarios – including plastics extrusion. The system is based on two technologies: local temperature control units; and a central adiabatic water-cooling system.

The temperature control units offer a wide range of operating temperatures, in processes including injection moulding, PET preforms, blow moulding and extrusion. For the latter, the temperature range is 50-160°C.

In addition, each cooling unit is connected to a central adiabatic water-cooling system installed outdoors, in order to reject the heat extracted from processes to ambient. This modular system – an alternative to old style open circuit evaporative cooling towers – consists of closed-circuit adiabatic fluid coolers that can keep the coolant temperature even lower than the ambient temperature.

Additionally, this central system can also provide direct cooling for all other requirements, such as hydraulic machine cooling, resin dryers and air compressors.

Frigel claims a number of advantages of this approach, including higher productivity, and a reduction in cost – through savings in energy, water use and maintenance.

► www.frigel.com

UK-based **Gillard** will exhibit its new extrusion servo rotary cutter. The Servo-Torq Plus extrusion cutter is designed for plastics, rubbers and many non-polymeric materials. It combines Lenze brushless AC servo motors with a digital multi-axis control system to activate the rotating knife blade. Gillard says very high cut rates are possible, with precise cut length accuracy. At the same time, Siemens widescreen touch panels allow easy operator control of the machine.



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Above: Gillard will show its Servo-Torq cutter at K2019

The cutter is available with maximum diameter cutting capacities of up to 150mm. All types of plastic and rubber extruded material can be cut with the machine.

Integral twin-belt Accra-Feed caterpillar infeeders/puller machines are provided to match every cutter model. These feature direct drive AC motors and planetary gearboxes, which improve speed control at high extrusion speeds.

The machine has a high level of connectivity: ProfiNet allows networking with the rest of the extrusion line, while remote service is available via the Internet using the built-in VPN router.

► www.gillardcutting.com

Herbold Meckesheim is using K2019 as a platform to launch new technology for plastics recyclers. The new EWS 60/210 high-capacity shredder was developed for both dry and wet operation and is said to be very robust and durable. The development work focused on requirements needed in the crusher stage in the recycling process, such as the need to deal with foreign bodies. The company says it focused on making a perfect wear-protected rotor that, in addition to custom knife configurations, is equipped with bolted armour plating and a special grinding chamber seal.

Herbold Meckesheim will also show a new two-shaft DWS shredder, which has a stator positioned in the middle. Due to the large surface area of the rotor, the machine has a very good feed performance and is suitable for materials that can only be fed in doses using conventional shredders such as big bags or high-volume containers, says the company.

Other company products on show include SB series granulators with force feeding, the new VWE 700 prewashing unit, mechanical and thermal dryers and HLR label removers.

► www.herbold.com

Hosokawa Alpine has developed a combined shredder and granulator.

The Polyplex PPC 50/120 has a vertically arranged rotor with a top-mounted shredder

and granulator section underneath.

"Granulator fineness values are achieved in a single step," said Josef Zöttl, senior sales manager in the company's recycling and granulators division. "The joint drive makes the size reduction far more energy-efficient."

With the aid of an intake unit, feed material is automatically dosed and charged to the shredder-granulator unit. Feed rate can be adjusted to suit the problem specification. After passing through the shredder section, the material falls into the granulator section and is reduced to granulator fineness.

The machine is especially suitable for in-house recycling. Different plastic parts can be charged together. The vertical design of the mill also brings advantages when cleaning, enabling easy access to the rotor and cutting knives. This guarantees fast cleaning and reduces downtime.

■ Separate to this, the company has set up a new division – selling and renting pre-owned process machines. All machines are the company's own. Pre-owned machines are tested to ensure high performance. Renting – of new machinery – allows customers to try out Hosokawa machinery before they buy it.

► www.hosokawa-alpine.com

Movacolor will showcase a range of its dosing technology at K2019 – and encourage visitors to be interactive with its display.

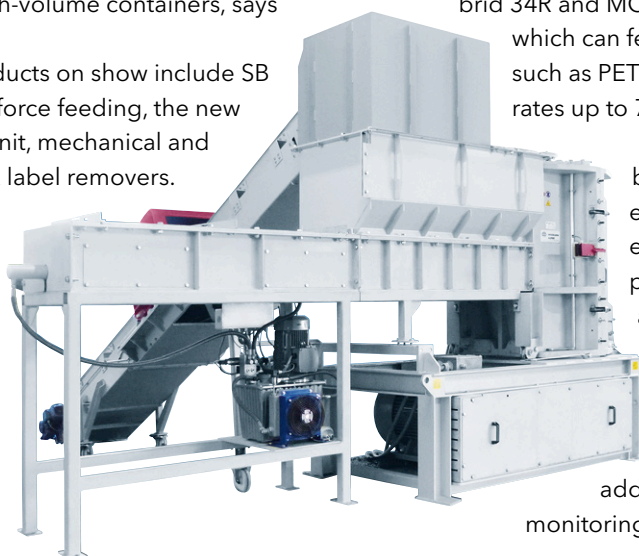
This includes a newly integrated installation wizard. Visitors can also configure their own dosing system on two big touchscreens.

"We want visitors to experience how easy it is to design their own dosing system," said Gerhard Dersjant, managing director of Movacolor. "Installation and start-up can be done without reading the user manual – even for a first-time-buyer."

Products on show include the MCTwin, MCHybrid 34R and MCHigh Output 2500R – which can feed low density regrinds such as PET flakes at high dosing rates up to 75%.

Its MCNexus will also be on show. This optometric dosing system enables very accurate, pellet-by-pellet dosing and was developed for micro injection moulding and micro extrusion applications.

The company adds that its MCSmart monitoring and reporting software



Right: Hosokawa's Polyplex PPC 50/120 combines a shredder and granulator in a single vertical shaft

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Above:
Movacolor will showcase a range of its dosing technology during K2019, with a number of interactive displays

- and OPC/UA communication optional on its gravimetric systems - helps companies move towards Industry 4.0.

► www.movacolor.com

NGR has extended its C Gran series of recycling machines to handle outputs of 2,200 kg/h and above.

This follows the market trend of increasing plastic recycling quantities and modernisation of recycling plants to satisfy the increased demand for high-quality recycled pellets, it says. As well as having to increase recycling quantity, the industry must ensure that the quality of recycled pellets is high.

"We have a broad portfolio of recycling machines with very different, specialised technologies," said Patrick Steinwendner, product and marketing Manager at NGR. "We recommend shredder-feeder-extruder combinations - especially for dry industrial waste - but for high moisture mixed plastics from the post-consumer waste stream, cutter-compactor-extruder combinations offer advantages."

► www.ngr-world.com

Sica has developed an electric saw for cutting plastic pipes made from complex materials, or with multiple layers.

Standard cutting systems may not be able to deal with pipes made from materials such as PVDF, PP-R or those reinforced with glass fibre. These would typically be used in medical or telecommunications applications.

The new TRKC 160E saw can cut without producing chips or dust, up to a diameter of 160mm. The new machine dispenses with hydraulic components and the need for manual adjustments - as required in previous versions completely - such as for positioning the cutting and counter-arms.

Everything is managed automatically by defining a few parameters - such as material type, and pipe diameter and thickness - from an operating panel. Each movement is electric, which reduces noise and increases precision. A compact servo-actuator, which integrates the motor and gear unit, improves the movement and performance of the cutting arm.

Its versatility allows an automatic positioning adjustment of cutting arm and counter-arm, by simply defining the diameter being processed. Several cutting algorithms have been developed to obtain the best performance in terms of cutting quality and execution speed.

To cope with emergency operating conditions (or a power cut), Sica has created a patent-pending electro-elastic hybrid system that allows cutting tools to be disengaged from a pipe during operation.

Sica will also launch its Everbell4 200EN - a new PP pipe bellling machine. The company says it is a new concept in multi-socketing machines. It processes up to four pipes at the time with only two ovens - which reduces energy consumption by around 40% - and one forming station.

The machine has already been tested on an extrusion line at a customer's site for more than a month. It is compact - being just 233cm wide - which is 89cm narrower than its previous model and much narrower than competitor machines.

It can process 1200 sockets/hour with PP-H pipes, in diameters of 32, 40 and 50mm, and 1.8mm wall thickness. Speed is not influenced by the simultaneous processing of different pipe lengths.

In terms of precision, a patented system assures permanent socket profile for pipes of 32-200mm diameter. At the same time, using electrical control boosts both accuracy and speed - and banishes the need for hydraulics.

www.sica-italy.com

Sigma Engineering has extended its expertise in modelling software to extrusion simulation.

For the first time, its Sigasoft Virtual Molding software can be used to optimise extrusion dies.

The behaviour of the melt



Right: NGR's C Gran recycling machine can now handle outputs of 2,200 kg/h

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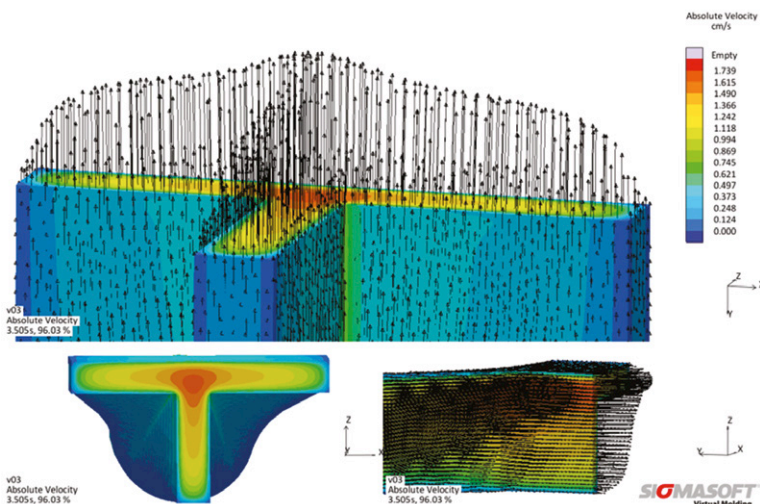
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Above: Sigma's new software overcomes the inhomogenous velocity distribution that causes deformation of the extrudate

inside an extrusion die is comparable to the flow inside a thermoplastic hot runner (or elastomer cold runner), says the company. For the extrusion die, temperature distribution inside the die alloy – and the geometry of the flow channel – have a huge influence on flow behaviour. Sigma has used its experience in the thermal and geometrical balancing of hot and cold runner systems to create a simulation program for extrusion dies.

Early tests have shown that Sigmasoft helps optimise flow channels in the extrusion die within hours. This improves the quality of the extrudate. To achieve this, geometrical degrees of freedom for the extrusion die's flow channel are defined inside the software – which then autonomously determines the ideal geometry for a dimensionally stable extrudate.

"The software now on the market helps to calculate the temperature distribution inside the

extrusion die," said Timo Gebauer, CTO at Sigma. "With the help of our software – and the included Virtual DoE – users can find a geometry that allows for extrusion with homogenous velocities."

The optimised velocity profile inside the extrusion die helps minimised deformation of the extruded profile.

➤ www.sigmasoft.de

Zeppelin Systems will present a range of plastic processing solutions at K2019 – which each designed to "ensure more efficiency during plant operations", says the company.

Shorter plant downtimes increase productivity. Zeppelin has developed a new Airfoil tool that reduces cleaning costs. The wing-shaped mixer arm – together with 'winglets', which have been used in aviation for years to reduce air resistance – generate a low resistance during the mixing process. This and other design innovations have reduced cleaning expenses. Large savings can be achieved on production lines, with multiple mixtures changes during the day – with each entailing a cleaning process. The company will carry out a live presentation of the new container mixer during the show.

The company also offers improved diverter valves, rotary feeders and silos – which it says are vital to the economical operation of logistics facilities. Its optimised line of switches and locks can deliver equivalent performance with a significant reduction in size, offering higher overall system efficiency due to lower installation costs and an improved energy balance.

➤ www.zeppelin-systems.com

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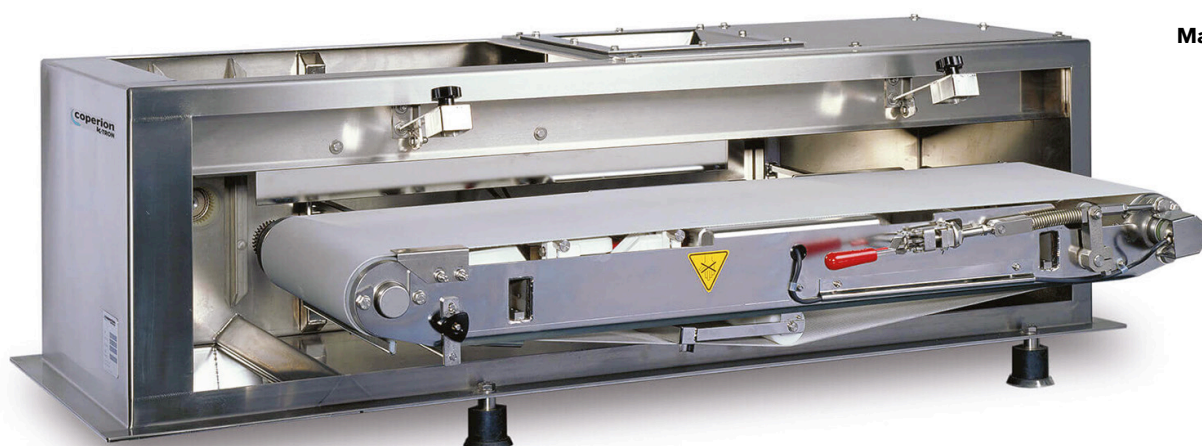
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Main image: Coperion K-Tron's SWB-300 weigh belt feeder promises high accuracy and efficient process control

Mixed bag: latest in materials handling

Materials handling machinery prepares, transports and measures polymer into the extruder. We look at some of the relevant equipment that will be seen at K2019 this month

Machinery as diverse as drying, conveying and dosing equipment helps processors to control the input of raw polymer into their process. It is a vital filter in ensuring that this material is correctly prepared and fed to the extruder in the correct quantities.

Coperion K-Tron will exhibit a variety of its materials handling technologies at K2019. The show is the European premiere for the company's redesigned K3 vibratory feeder line - and its V200 model will be shown as part of a running system.

The K3-ML-D5-V200 vibratory feeder will be shown in action as part of a recirculating system - with automatic refill provided by a P-series vacuum receiver and a compact vacuum pump. Vibratory feeders are ideal for feeding recycled material or flakes as well as for the addition of glass fibre in compounding processes. They are nearly maintenance-free, as there is no wear on the mechanical parts. P-series vacuum receivers can be used to convey a wide range of bulk materials - in conveying only applications such as hopper loading, as well as loss-in-weigh feeder refill applications. The receivers are made of stainless steel, and their features include steep cone angles - to ensure efficient discharge - and band clamps for quick disassembly.

Also on display, the company's SWB-300 weigh

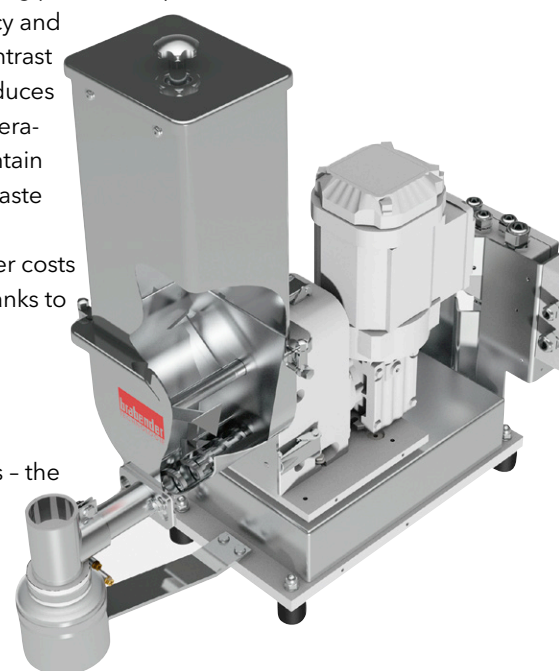
belt feeder is a comparatively simply constructed, reliable gravimetric feeder for high accuracy and efficient process control. Weigh belt feeders of this type can feed large volumes of bulk materials with various flow properties and are well suited for, among other things, processing recyclates.

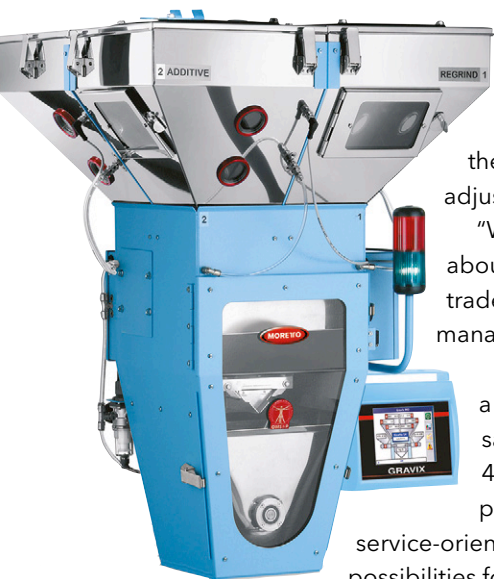
Another materials handling solution is Fluidlift Ecoblue, a pneumatic conveying process for plastic pellets that increases efficiency and minimises degradation. In contrast to conventional designs, it reduces abrasion - which cuts the generation of dust or strands to maintain product quality and reduce waste accumulation. It also enables plastics manufacturers to lower costs and increase throughputs, thanks to low energy consumption.

Feeding time

Brabender Technologie has redesigned two of its feeders - the DSR28 and DDSR20. As well as having a new type of gearbox, the machines use a number of new components that allow easy cleaning.

Below: Brabender has redesigned two of its feeders, including the DSR28





Above:
Moretto's DGM Gravix batch gravimetric dosers promise high accuracy and precision

Both will be displayed at K2019, and also demonstrate the possible motor types – such as the new motor with extended adjustment range (1:100).

"We don't want to reveal too much about these two feeders before the trade fair," said Bruno Dautzenberg, managing director of Brabender.

The company has also developed a new OPC-UA interface, which it says is a key step towards Industry 4.0. The new interface transmits process and control data in a service-oriented architecture, opening up new possibilities for customers, says the company.

The expansion to upstream machines, such as vacuum conveyors, is also now available in the feeder control and the OP16 control unit. This provides customers with a control for both machines from a single source, allowing them to optimise refill processes.

Conveying and dosing

Moretto of Italy will show a range of its materials handling technologies – including dosing and conveying – at K2019.

To manage and supervise the conveying process – of small or large quantities of plastic – its One Wire 3 system ensures high transport efficiency, thanks to its FIFO logic.

One Wire 3 also controls the devices, which contribute to optimising the granule conveying and feeding process. In particular, the Dolphin manifold unit automatically supplies and distributes all the materials to all the machines, avoiding the risk of contamination and human error.

Kruise Control (KK), patented by Moretto, can manage material speed during the conveying phases. This eliminates the formation of angel hair and wear of the pipes. It acts differently to typical inverter systems that simply act on air speed, but do not account for numerous other variables that characterize each material, Moretto – pointing out that KK controls more than 15 parameters.

Its DGM Gravix batch gravimetric dosers promise high accuracy and precision – up to 0.01% – thanks to its Vibration Immunity System and double

eyelid system. They cover dosing requirements for granule, powder and flakes, with dedicated applications, up to 12 materials and 12,000 kg/h.

The company also offers its DPK weight-in-loss dosing system, for dosing small amounts of masterbatch or additives. The technology of the load cells – and the control algorithm – give it a dosing accuracy of $\pm 0.03\%$. The masterbatch or additive to be dosed is contained in a hopper built in a specific transparent resistant acrylic material, free from electrostatic charges, which makes immediately visible the content material and the level of load and avoids the stop of material on the hopper walls. The hopper is easily removable without the use of tools and, together with the intelligent storage and recognition system of the masterbatches alongside the machine, the recipe change is even more immediate, says Moretto.

Handling range

Motan will focus on a range of materials handling technologies at K2019.

Its Spectroplus synchronous dosing and mixing unit was developed for extrusion and compounding and will replace its previous Graviplus range. With a modular design, it is suitable for a large range of different materials – from powders, granulates and regrinds to liquids and flakes. Additionally, the synchronous dosing unit can be augmented with the Spetroflex dosing modules, which are also available in gravimetric and volumetric versions.

Spectroplus is controlled with the new Spec-

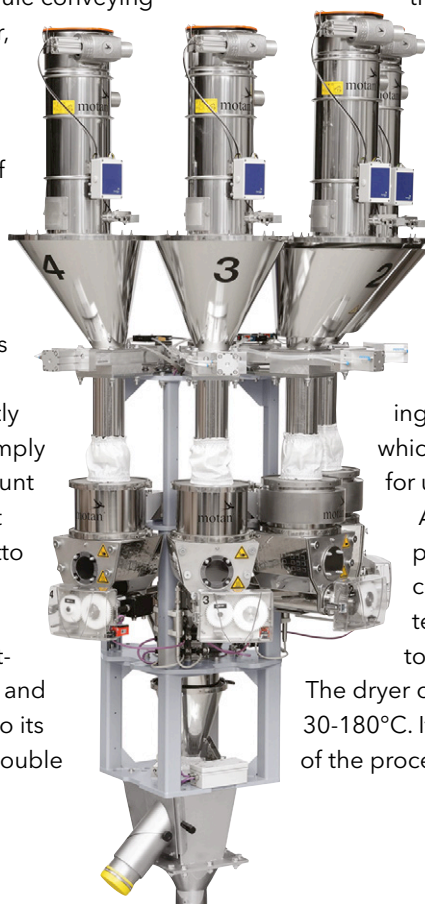
tronet control, which can control both volumetric and gravimetric dosing modules, as well as external dosing units.

Meanwhile, its Metroflow gravimetric material loaders offer precise vacuum conveying – such as to move material from a silo to a drying bin, or to the processing machine. With their precise weighing technology, they are particularly suited for monitoring material consumption in real time, which means that the units are ready for use in an Industry 4.0 environment.

Also, its new Luxor CA A compressed air dryer, with optimised control and integrated ETApplus technology, is designed for small to medium material throughputs.

The dryer operates at temperatures of 30-180°C. It can be installed directly on top of the processing machine or on a mobile

Right: Motan will show a range of its materials handling technologies, including its Spectroplus synchronous dosing and mixing unit



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Right: Farrag will show its Card E/S, Card M and Card L/XL bulk materials dryers at K2019



frame. The dryer is available in four sizes with bin volumes of 8, 15, 30 and 60 litres.

The company has also reworked and expanded its Metro range of individual material loaders. The new Metro G (for granulate) model, for large material throughputs, is available in 60, 100 and 150 litre capacities. Metro R (for regrind) is designed for processing recycle, and is available in the same three sizes,

as is the Metro F (for processing flakes). As a non-free-flowing material, flakes are prone to bridge-building, so this model is equipped with an extra-large outlet flap.

The Metro SG loaders offer an affordable range for standard applications, and are quick and easy to install. The Metrovac SG conveying station - with conveying control, blower and central dust filter - can supply up to eight material loaders and four purging valves. At the same time, the new Metronet SG provides the matching control, from which eight material loaders and one stand-by blower can be managed via a colour touchscreen display.

Mixing it up

Plasmec, which specialises in plastic mixing machinery, is to show a range of its technologies at K2019.

Combimix-HC mixers are aimed at technical mixing applications in the field of PVC or WPC dry blend production. Versions span from 200/800 to 2500/8500 litres capacity. A high output can be achieved thanks to the optimised design of the high-speed TRM mixer, and the high-efficiency HEC cooler type mixer.

Plasmec will also show a TRR-1500/FV container mixer, which complies with the Atex Directives. It is suitable for mixing additives with potential explosion risk and can be installed in classified areas. It is an alternative to conventional turbo-mixers for masterbatch, pigments and technical polymers when production conditions require a high degree of versatility and a wide range of different recipes to be mixed with the same machine, says the company.

Right: Maguire says that its Ultra vacuum resin dryer can drastically reduce energy bills



Compressed variants

FarragTech of Austria says it has continued to refine the design of its compressed air resin dryer (Card) - and will show a number of variants at K2019.

The dryer, first developed in the 1990s, relied on a new method of drying.

"In extrusion blow moulding, it was standard for a long time to vent the dry blow air at the end of each cycle," said Rainer Farrag, founder of the company. "As a result, a lot of unused air - and energy - was lost, which I found was a pity. The idea struck me to use this air for resin drying."

Using compressed air from an upstream process to dry resins made it possible to dehumidify material with minimal extra energy - and no moving parts. It proved a cost-effective, reliable alternative to adsorption drying.

Although the basic design is the same, improvements continue to be made: better process integration, modern controls - such as the Sleep mode - and the reduction of the amount of air after reaching a particular temperature in the upper range of the drying hopper all help to reduce energy consumption further. The heat recovery from the air compressor has meanwhile led to resin drying which can mostly dispense with additionally supplied energy.

At K2019, the company will show its Card E/S, Card M and Card L/XL bulk materials dryers. These variants can, among other things, be combined with systems for condensation water protection and for internal mould cooling. This way, they make

the whole process more efficient, says the company.

"It has to be assumed that resin drying using compressed air will become the standard in the plastics industry in the years to come," said Farrag.

Energy efficient

Maguire will showcase its vacuum resin dryer, which it says uses a fraction of the energy of a desiccant dryer. The dryer, which has been renamed Ultra (it was formerly called VBD), can drastically reduce energy bills, says the company.

"While the energy needed to heat polymer to its required temperature is roughly the same for both vacuum and desiccant dryers, the Ultra dryer uses much less energy in the next stage - when the heated resin is actually dried," said Frank Kavanagh,

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Right: ProTec will launch its new Somos RDF flexible modular drying system at K2019

vice president of marketing and sales at Maguire.

He cites a typical example for a process running at 220lbs (100kg) per hour, for 6,000 hours per year. An average desiccant dryer might run at 60 Watts per pound of material, versus the Ultra, which consumes 19 Watts per pound. While each system uses around 15W to heat the material from ambient temperature, the energy used to dry is very different: the desiccant dryer would use another 45W, while the Ultra uses just 4W – around 10 times less.

For an average US price of \$0.12/kW, the annual energy bill for the desiccant dryer is \$7,128, and \$570 for the Ultra.

“Over the average lifespan of a dryer, that equates to \$65,580,” said Kavanagh.

Using load cells in the dryer – on the vacuum hopper and retention hoppers – allows the touch-screen controls of the dryer to control the process in a way not seen with desiccant dryers, he said.

“The use of data provided by the load cells allows the dryer to achieve many functions automatically, such as automatic start-ups, automatic stops, and making cleaning and materials changes extremely rapid,” he said.

Ultra dryers are available with throughputs of 150, 300, 600, and 1,000 lbs/hr. (68, 136, 272, and 454 kg/hr).

Flexible drying

ProTec Polymer Processing will launch a new flexible modular drying system at K2019.

The Somos RDF modular resin drying system, for flexible stationary use without a central dry air generator, consists of autonomous units with their own Industry 4.0-capable controllers. Depending on requirements and desired throughput, the modules can be combined into a variable overall system with central visualisation and control.

Components are available with capacities of 50-400 litres, with each individually controllable.



When interconnected, they can be controlled using a common operator control unit. As standard, they offer drying temperatures of 60-140°C, while high-temperature variants for up to 180°C are also available. Each module has an integrated air generator, which rules out complete failure – as may occur with a centrally supplied drying system.

Installation requires little space and effort as the modules are compact and do not require extensive supply and return air piping. The system also saves energy because only the components that are needed are operated. If requirements change, modules can be added or removed.

The modules can store up to 200 formulations. They have their own dry air generators and also provide several energy-saving systems: drying air volume is adapted to throughput, while regeneration cycles are controlled on the basis of the actual water content of the pellets, for instance.

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Vienna / 2019

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Austria Trend Hotel Savoyen, Vienna, Austria



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- the use of additives to enhance and optimise performance

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Research and Development Manager



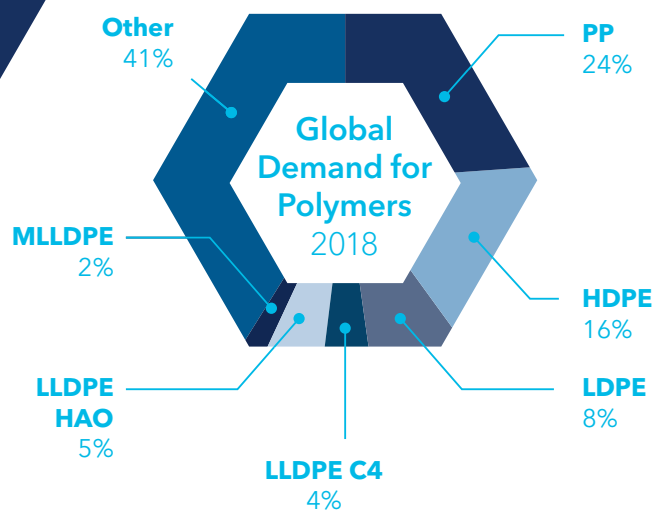
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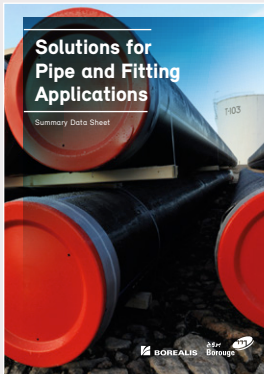
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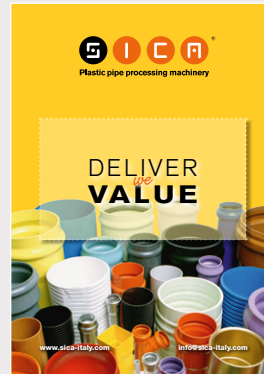
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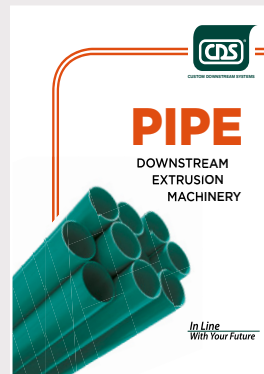
HEXPOL: DRYFLEX TPE



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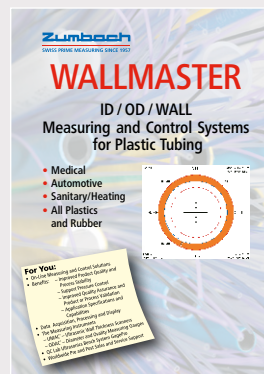
UNICOR: PIPE CORRUGATION



This brand new 48-page brochure from Unicolor provides detailed insight into the design, production, applications and advantages of corrugated pipes. It includes specification data on the company's wide range of pipe corrugation equipment.

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ZUMBACH: MEASUREMENT CONTROL



This eight-page brochure details the main features of Zumbach's Wallmaster measurement and control system for improving product quality, process stability and data capture in plastic tube and pipe extrusion applications.

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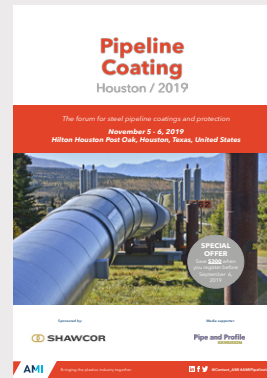
CONDUCTIVE PLASTICS 2019



AMI's Conductive Plastics conference takes place for the fourth time in Europe on 5-6 November 2019. It is the place to learn about formulation, processing and application of both electrically and thermally conductive thermoplastics. The event takes place in Vienna.

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PIPELINE COATING HOUSTON 2019



AMI's fourth Pipeline Coating Houston conference takes place on 5-6 November 2019. It will bring together North American pipeline operators, contractors, pipe coaters, researchers and specifiers to discuss the latest sector trends and technologies.

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MEDICAL TUBING USA 2019



Taking place in Minneapolis, MN, USA, on 5-6 November 2019, AMI's North American Medical Tubing conference is the place to learn about the latest regulatory, material and processing developments for this demanding market.

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POLYOLEFIN ADDITIVES 2019



Taking place in Vienna in Austria on 12-14 November, attendees at Polyolefin Additives will learn more about the latest additive technology trends in the polyolefin resins market, including vital steps to implementing the circular economy.

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PROFILES



Taking place in Cologne in Germany on 12-13 November 2019, AMI's Profiles conference brings together the entire industry value chain to discuss the latest developments in construction standards, materials and production technologies.

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POLYMER FOAM 2019



The seventh Polymer Foam conference will be held in Hamburg in Germany on 26-27 November, bringing together an international audience to learn more about the latest chemical, physical and particle foaming technologies.

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Tubrica

Head office:	Barquisimeto, Venezuela
President:	Raul Alvarez
Founded:	1985
Ownership:	Private
Profile:	Founded in 1985, Tubrica is a specialist in tubing, pipes and fittings for the building, infrastructure and agricultural sectors – as well as specialist products for the oil and gas sector. Its main business is in PVC pipe, but it also makes polyolefin pipe and composite pipe. In addition, the company has extensive injection moulding facilities in order to produce fittings.
Product lines:	The company's products split into three areas: building, infrastructure and agriculture. In agriculture, it offers its Geotech range of pipes – which are designed to be used for deep wells. At the same time, its Sistema Riego (for irrigation) is available in a range of diameters, and up to 6m in length. In building, it offers a variety of products including high impact conduit pipe and high pressure C-PVC pipe for hot water transport. Its infrastructure products include sewer pipe – which typically replaces concrete pipe – in lengths of 3m and 6m, as well as ducting for electrical and telecoms cables of three main types – including ones that can be embedded in concrete.
Factory location:	The company's main factory is located in Barquisimeto, where it produces PVC and PO pipe. In 2017, it took a large order from KraussMaffei of Germany – for two single extruders and 10 full production lines. Some machines have been installed at its Barquisimeto and Valencia plants, while others are used to make composite pipe in its Maracaibo facility. Overall, the company produces around 90,000 tonnes/year of pipe, which is mostly supplied to customers in South America.

To be considered for 'Extruder of the Month', contact the editor on lou@pipeandprofile.com

Pipe and Profile EXTRUSION FORTHCOMING FEATURES

The next issues of Pipe and Profile Extrusion magazine will have special reports on the following topics:

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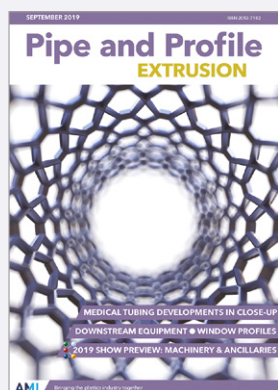
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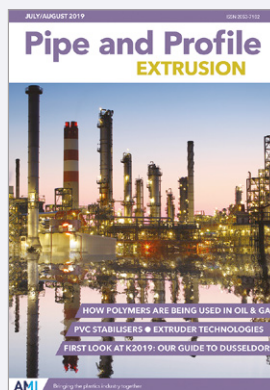
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Pipe and Profile September 2019

The September issue of Pipe and Profile Extrusion magazine explores the latest developments in medical tubing, window profiles and downstream cutting systems. Plus, a preview of the innovations in store for extruders at K2019.

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Pipe and Profile July/August 2019

The July-August edition of Pipe and Profile Extrusion looks at how polymer pipes are being used in the offshore oil and gas sector. Other features cover extruder innovations to be shown at K2019 and developments in PVC additives.

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Compounding World September 2019

The September issue of Compounding World discusses how to get more from pigments and also covers bioplastics, stabilisation and purging. Plus a preview of K2019 materials and additives exhibitors.

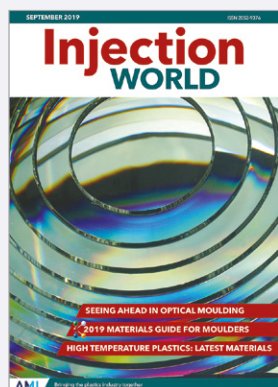
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Plastics Recycling World September/October 2019

The September/October edition of Plastics Recycling World explores a new sorting technology that uses watermarks to identify polymers. Plus, a look at the latest initiatives in rigids recycling and a preview of K's innovations.

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Injection World September 2019

The September edition of Injection World magazine takes a look at the latest in optical and medical moulding. It also reviews developments in high temperature plastics, plus a preview of the material innovations that will feature at K2019.

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Film and Sheet September 2019

The September issue of Film and Sheet Extrusion takes an in-depth look at the latest in downstream equipment, new biaxial film technologies and PVC plasticisers. Plus the K2019 Preview provides an extruder's guide to material exhibitors.

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	25-28 November	Plastivision Arabia, Sharjah	www.plastivision.ae
	27-29 November	Plastics & Rubber Vietnam	www.plasticsvietnam.com
2020	13-16 January	Saudi Plastics & Petrochem, Riyadh	www.saudipp.com
	16-20 January	Plastivision India, Mumbai, India	www.plastivision.org
	21-23 January	Swiss Plastics, Lucerne, Switzerland	www.swissplastics-expo.ch
	28-31 January	Interplastica, Moscow, Russia	www.interplastica.de
	9-11 March	Plast Alger, Algiers, Algeria	www.plastalger.com
	11-13 March	Expo Plasticos, Guadalajara, Mexico	www.expoplasticos.com.mx
	26-28 March	MECCSPE, Parma, Italy	www.mecspe.com
	21-24 April	Chinaplas, Shanghai, China	http://www.chinaplasonline.com
	3-4 June	Plastics Extrusion World Expo Europe, Essen, Germany	www.eu.extrusion-expo.com/
	8-11 June	Argenplas, Buenos Aires, Argentina	www.argenplas.com.ar
	21-25 September	Colombiaplast, Bogota, Colombia	www.colombiaplast.org
	13-17 October	Fakuma, Friedrichshafen, Germany	www.fakuma-messe.de

AMI CONFERENCES

5-6 November 2019	Medical Tubing, Minneapolis, USA
12-13 November 2019	Profiles, Cologne, Germany
12-14 November 2019	Polyolefin Additives, Vienna, Austria
4-5 December 2019	Oil & Gas Non-Metallics, London, UK
24-25 March 2020	PVC Formulation, Cleveland, USA
28-29 April 2020	Plastic Pipes in Infrastructure, Hamburg Germany
2-3 June 2020	Profiles, Cleveland, USA
2-3 June 2020	Oil & Gas Polymer Engineering, Houston, USA
17-18 June 2020	Medical Tubing, Berlin, Germany
4-5 November 2020	Wood-Plastic Composites, Vienna, Austria

For information on all these events and other conferences on film, sheet, pipe and packaging applications, see www.ami.international

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WORLD EXPO

POLYMER TESTING
WORLD EXPO

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ESSEN, GERMANY

PLASTICS EXTRUSION
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Profiles

Cologne / 2019

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12-13 November 2019
Cologne Marriott Hotel, Cologne, Germany



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The conference will examine developments in materials technology, production techniques, design, testing, sustainability and standards for PVC windows and other building applications such as doors and decking.

2017 HIGHLIGHTS:

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- **Over 18 countries represented globally**
- **Over 25% profile producers**



Discussion panel on the market was the highlight for me. The talks were very clear, networking possibilities were on the spot

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- **Discuss and debate the impact of the sustainable circular economy**
- **Gain an update on market trends and new opportunities for profiles in construction applications**
- **Keep up to date on innovative additives and materials to optimise performance**
- **Understand the latest developments to increase production quality**
- **Meet the entire supply chain in our 'Speed Networking' session**

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Space is limited so to avoid disappointment please register for this service as soon as possible.

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SAVE €200

Register before
13th September
2019

Tuesday 12th November 2019

- 08:30 Registration and welcome coffee
09:30 Opening announcements

SESSION 1 - MARKET TRENDS AND OPPORTUNITIES

- 09:40 **The future of window technologies**
Speaker TBC
ALUPLAST GROUP, Germany
- 10:10 **A critical review of the long-term supply and demand for PVC resin and the implications for profile producers**
Mr. Yves Heroes, Director Market Intelligence,
KEMONE, France
- 10:40 Coffee break

SESSION 2 - OPTIMISING PVC COMPOUNDS FOR CONSTRUCTION PROFILES

- 11:10 **New rigid PVC blends for profiles in heavy-duty outdoor applications**
Mr. David Carr, Technical Director,
PLASTCHEM BV NETHERLANDS, Netherlands
- 11:50 **Improving the gloss of extruded profiles by optimising impact modifiers for CaZn-stabilised PVC formulations**
Mr. Bernard Cora, TS&D Director,
DOW FRANCE, France
- 12:20 **Using PVC-based wood-plastic composites in window frames - studying performance and benefits**
Mr. Daniel Friedrich, Lecturer and Researcher,
BADEN-WÜRTTEMBERG COOPERATIVE STATE UNIVERSITY/
COMPOLYTICS, Germany
- 12:50 Lunch

14:20 SPEED NETWORKING

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- 15:50 Coffee break

SESSION 3 - QUALITY CONTROL AND PERFORMANCE TESTING

- 16:30 **Quality assurance of profiles through testing and monitoring**
Dr. Philipp Lang, Group Manager Testing Profiles
and Sealants,
SKZ - TESTING GmbH, Germany
- 17:00 **Studying the surface of PVC profiles - what different analysis methods will reveal**
Dr. Michael Schiller, Founder and owner,
HMS CONCEPT E.U., Austria
- 17:30 Closing comments
- 18:00 Networking Cocktail Reception

Wednesday 13th November 2019

- 09:00 Welcome coffee
09:30 Opening announcements

SESSION 4 - SUSTAINABILITY, STANDARDS, RECYCLING

- 09:40 **What is a sustainable PVC window?**
Ms. Charlotte Röber, Managing Director,
EPPA, Belgium
- 10:10 **PANEL DISCUSSION**
Sustainability and the Circular economy
Mrs. Claudine Bloyaert, Technical Marketing & Development
Specialty Vinyls,
INOVYN EUROPE, Belgium
Ms. Charlotte Röber, Managing Director,
EPPA, Belgium
- More panellists to be confirmed

- 11:10 Coffee break

SESSION 5 - MATERIAL AND PRODUCTION OPTIMISATION

- 11:50 **Development of a Polymer - based profile with exceptional fire performance: Properties, Uses and Applications**
Dr. Michail Kalloudis, Technical Manager,
IMPACT SOLUTIONS, United Kingdom
- 12:20 **New EPDM designs for sealing systems in building and window profiles**
Dr. Caroline Miesch, Senior TS&D Engineer,
DOW EUROPE GmbH, Switzerland
- 12:50 Lunch
- 14:20 **Case Study: Using colour masterbatches instead of pigments in the production of PVC profiles, improving productivity, reducing scraps and guaranteeing colour repeatability**
Mr. Manel Miret, Area Manager,
DELTA TECNIC, Spain
- 14:50 **Combining co-rotating and counter-rotating twin-screw extruders for the flexible production of high-quality products**
Mr. Andreas Holt, Business Consultant New Technologies,
THEYSOHN EXTRUSIONSTECHNIK GMBH, Germany
- 15:50 Coffee break and Conference ends

AMI reserves the right to alter the programme without notice.
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Title: Mr/Mrs/Dr/Other: _____
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Please confirm that you agree to your name being published alongside your company name and job title on the delegate list.

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	Price	VAT	Total
<input type="checkbox"/> Early Booking Delegate Admission Fee ¹ : (until 13th September 2019)	€1,040.00	19%	€1,237.60
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PROFILES 2019 CONFERENCE INFORMATION

12-13 November 2019
Cologne Marriott Hotel
Johannisstrasse 76-80
50668 Cologne
Germany
Tel: +49 221 94222 700
Fax: +49 221 94222 777

HOTEL ACCOMMODATION

Delegates are responsible for booking their own accommodation. We have negotiated a room rate of €182 for a single room and €202 for a double (tax, breakfast and Wi-Fi included) at the Cologne Marriott Hotel in Cologne until 1st October 2019.

Please make your reservation using the direct hyperlink which can be found on our website www.ami.international/events (click on 'Profiles 2019' followed by Accommodation)

PARTICIPATION OPPORTUNITIES

Delegate registration: includes attendance at all conference sessions, a set of conference proceedings, entrance into the Networking Cocktail Reception, lunch and coffee breaks.

Sponsor this event: maximise your company profile before, during and after the event by becoming a sponsor. For further information, please contact the Conference Organiser

Exhibition space: an excellent way to enhance your business opportunities and make it easy for delegates to find you! Includes:

- entry for one representative from your company
- one exhibition space in the networking area
- your company profile in the conference proceedings
- new and existing product display
- handing out brochures and promotional items from your stand

Spaces are allocated on a first-come-first-served basis and sell quickly.

Group discounts: when registering as a group you may be entitled to discounts. Contact the Conference Organiser for more information.

Networking Cocktail Reception

A networking cocktail reception will be held on the first evening. This offers an excellent opportunity for delegates to meet with speakers and other colleagues. All delegates are invited to attend and admission is included in the delegate fee.

CANCELLATIONS

Full refunds, less a cancellation charge of €300 will be made on cancellations received prior to 13th September 2019. Thereafter we regret that no refunds can be made. Delegates may be substituted at any time. Please note that refunds will not be given on exhibition spaces, sponsorship packages or networking dinner places.

CONFERENCE HOTLINE

EMILY NICHOLSON, CONFERENCE ORGANISER

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