33rd International Munich Paper Symposium

PROGRESS IN BOARD AND PAPER TECHNOLOGY

25 – 27 March 2025

ADDRESS

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2026

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A picture of last year's 32nd International Munich Paper Symposium 2024

Welcome

Dear Participants,

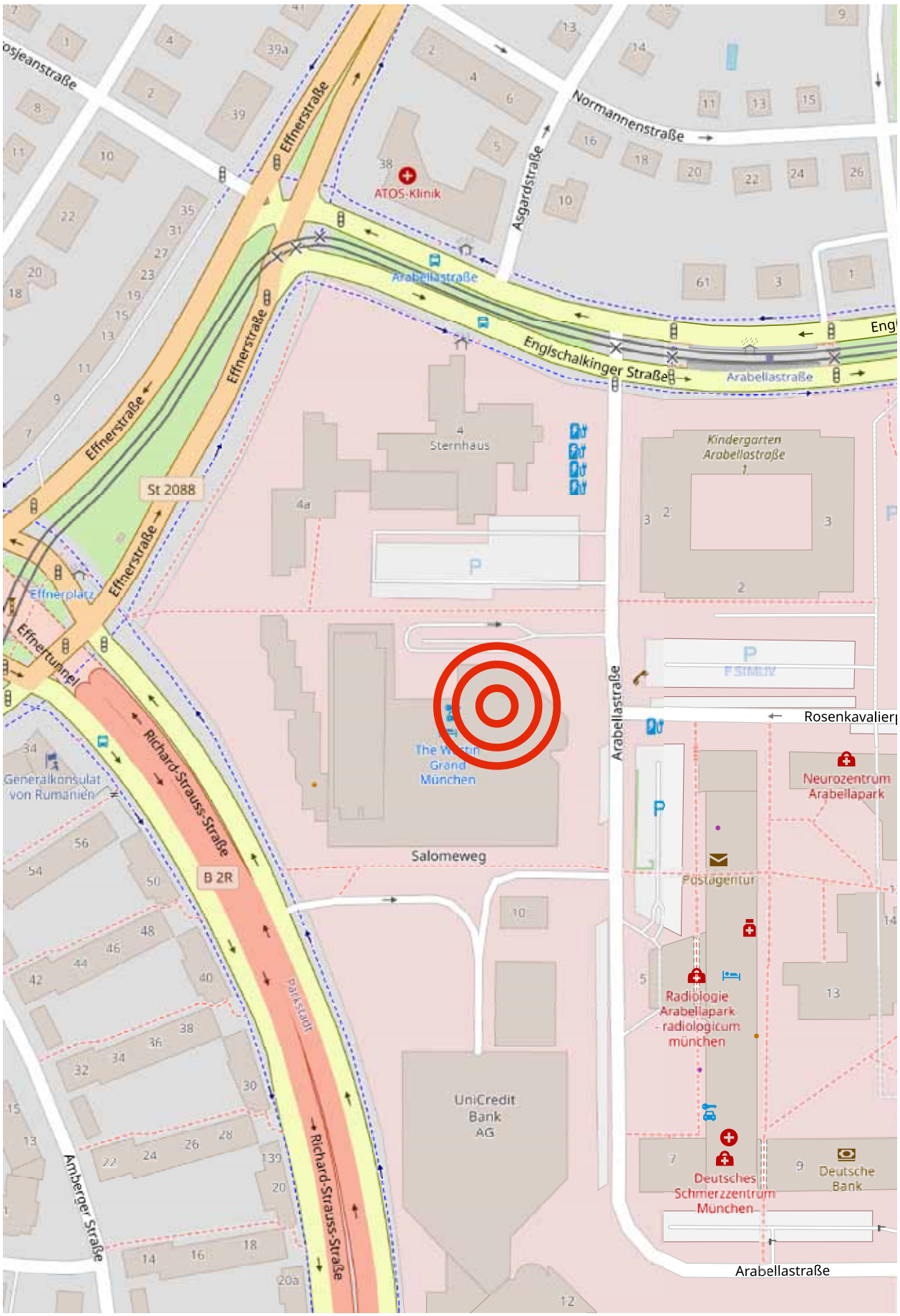
I warmly welcome you to the 33rd IMPS – International Munich Paper Symposium. This year, the IMPS is once again addressing developments that optimize the processes of paper and board production and improve product quality. Almost all the reports come directly from paper mills, which underlines both the credibility and the feasibility of the possibilities presented. The speakers come from various supplier companies and the following paper mills: Palm paper mill in Aalen, Germany; MM Board & Paper from Kolicevo, Slovenia; Smurfit-Westrock in Roermond, Netherlands; Longchen Paper & Packaging - Erlin Paper Mill in Zhanghua, Taiwan; Brigl & Bergmeister in Niklasdorf, Austria; Schoellershammer in Düren, Germany; Glatfelter in Gernsbach, Germany; Pankaboard in Pankakoski, Finland; Mondi in Vienna, Austria; Papierfabrik Reflex in Düren, Germany; Essel Selüloz ve Kâgit Sanayi Tic. A.s. in Osmaniye, Turkey; W. Hamburger GmbH in Pitten, Austria; Weig Technical Liner in Mayen, Germany; and Heinzel Holding in Vienna, Austria.

At the exhibition, you will be able to meet both familiar and new companies and see their products and services in the direct break area of the conference. These include ABB, with a complete portfolio of state-of-the-art sensors for detecting process deviations. BM Green Cooling is known for its expertise in cooling and heating using heat pumps and will be giving an interesting lecture on the subject. Cellwood is a leading supplier of dispersing systems. Deublin is known as a leading company for rotary joints and syphon systems. Emco manufactures and supplies a wide range of measuring instruments and testing machines used to test paper, cardboard and pulp. emtec Electronic develops, produces and distributes measuring instruments for the paper, cardboard and tissue industry worldwide. fipptec offers solutions and products to make paper production more efficient, competitive and of higher quality. Frank-PTI is a partner for the highest quality, customer-oriented solutions, and uncomplicated and fast service in materials testing. GAW technologies is appearing as an exhibitor and once again as a sponsor of the Cultural Evening. It is an expert in the industrial processing and production of chemicals and coating masses, as well as the automation and digitization of industrial processes. The company Gloning presents itself as one of the leading special crane suppliers and has brought the company AREC Automatisierungstechnik with it for the first time. Ms. Buschmeier from the company KPNB is once again taking part as an exhibitor, with topics on efficient production and savings potential. Maintech is concerned with the combating of stickies in waste paper processing and will explain its system in a lecture. MAN Energy Solutions will give a lecture on its contribution to successful decarbonization by modernizing vacuum systems. MAUEL Sicher Arbeiten is known for its seminars and training courses on safe working practices. N.C.R Biochemical is an experienced supplier of enzymatic processes for the tissue and paper industry. Oskar Moser supplies high-quality nozzles with sapphire and ruby jewels, precision bearings and customized components made of sapphire and ruby. PaCon is the only independent company to offer the optimization and measurement of doctor contact pressures and profiles, as well as general assistance in optimizing paper manufacturing processes. Petax, together with Techpap, is a partner of several companies that show their versatile products for the paper industry. The PTS is a well-known research and service company for the German paper industry as an affiliated institute of the TU Dresden. Siemens Energy is globally known for solutions in drive applications, energy distribution, automation and process electrification and reports on the successes in H_2 application. Trimble is presenting Wedge, a powerful data mining software that can be used to improve the efficiency of industrial plants. The Villforth company has been successfully manufacturing screens for forming, dewatering, transporting, pressing, filtering and embossing for 150 years. Wolf Heilmann will be showing a wide range of the paper production products he represents and will be giving an exciting presentation on flexible power management. X-Rite is an experienced specialist in all aspects of color measurement and control.

I hope you find many good ideas, lively discussions and an interesting exhibition.

Prof. Dr. Stephan Kleemann

MAP OF THE SURROUNDING AREA



A map of the surrounding area. The red circles mark the conference location..

CONFERENCE PROGRAMME

Tuesday, 25 March 2025

Morning Session

09:00 **Welcome and overview of the exhibition**
Stephan Kleemann · IVP - Institute of Paper Technology · Munich / Germany

Successful decarbonization at Glatfelter Gernsbach
Paul Stangenberg · Glatfelter Gernsbach GmbH & Co. KG · Gernsbach / Germany
Rudi Ewert · MAN Energy Solutions SE · Oberhausen / Germany

LC-pulping system for recycled paper with predictive control of the detrashing
Karl Tessler · Schoellershammer GmbH & Co. KG · Düren / Germany
Wolfgang Müller · J.M. Voith SE & Co. KG · Ravensburg / Germany

Discussion and Coffee Break

11:15 **Experience with the use of dry-defibered fibrous materials at the Reflex paper mill**
Tiemo Arndt · Reflex GmbH & Co. KG · Düren / Germany
Tilo Gailat · TBP Future GmbH · Moosbach / Germany

New way for processing packaging board for liquids
Tomi Hankaniemi · Pankaboard Oy · Pankakoski / Finland
Göran Antila · PR Rolls Oy · Tampere / Finland

Lunch at The Westin Grand Munich conference hotel

Afternoon Session

14:00 **Successes and prospects: Mondi's path to operational autonomy**
Lars Mallasch · Mondi AG · Wien / Austria
Ulf Grohmann · J.M. Voith SE & Co. KG · Heidenheim / Germany

Operational experience with the innovative Sleeve roll technology at Palm PM5
Alexander Kanditt · Papierfabrik Palm GmbH & Co. KG · Aalen / Germany
Christian Strohschein · Valmet GmbH · Darmstadt / Germany

Discussion and Coffee Break

16:00 **Hard nip sizing with curtain application at MM Količevo BM3**
Michael Petschacher and Rado Kunavar · MM Board & Paper · Količevo / Slovenia
Henri Vaittinen · Valmet Technologies, Inc. · Järvenpää / Finland

Steyrermühl PM6 - An innovative conversion concept from graphic grades to high-quality kraft paper
Mario Wiltsche · Heinzel Holding GmbH · Vienna / Austria
Gerald Steiner and Albrecht Miletzky· Andritz AG · Graz / Austria

Experience at Brigl & Bergmeister with new type of headbox
Oliver Präpasser · Brigl & Bergmeister GmbH · Niklasdorf / Austria
Markus Häußler · J.M. Voith SE & Co. KG · Heidenheim / Germany

20:00 **Gala-Dinner at The Westin Grand Munich conference hotel**

Wednesday, 26 March 2025

Morning Session

09:00 **New approach for saving steam consumption and CO_2 whilst reducing sticky and sheet breaks**
Chung-Chi Wu · Longchen Paper & Packaging CO., LTD. Erlin mill · Zhanghua / Taiwan
Hiroshi Sekiya · Maintech Co., Ltd. · Tokyo / Japan

Increase in machine availability with regard to stickies in the production of light-weight corrugated base paper
Maximilian Krallinger · DS Smith Paper Deutschland GmbH · Aschaffenburg / Germany
Christoph Waßmer · CTP GmbH · Schwabmünchen / Germany

Modified GCC to reduce sticky/pitch deposits in papermaking
Ahmet Nabi Temüroğlu · Essel Selüloz ve Kâgit Sanayi Tic. A.s. · Osmaniye / Turkey
Luis Ferraz and Özgür Yildiz · Omya International AG · Oftringen / Switzerland

Discussion and Coffee Break

11:15 **Hamburger Containerboard: experience with an innovative cooking process for starch**
Wolfgang Leitner and Erik Musaev · W. Hamburger GmbH · Pitten / Austria
Christian Stirn · PGA Anlagenbau GmbH · Wernberg / Austria

Water-saving direct mixing of retention aid
Henning Dippel · Weig Technical Liner GmbH & Co. KG · Mayen / Germany
Daan Waubert de Puiseau · econovation GmbH · Göppingen / Germany

Lunch at The Westin Grand Munich conference hotel

Afternoon Session

14:00 **First successful turbine operation with 100% green H_2 at Smurfit-Westrock**
Theo Peulen · Smurfit-Westrock · Roermond / The Netherlands
Ertan Yilmaz · Siemens Energy · Charlotte / USA

Economic cooling of waste water and rooms as a CO_2 sink for high-temperature heat pumps
Eberhard Knödler · BM Green Cooling GmbH · Schwarzenbruck / Germany

Discussion and Coffee Break

16:00 **Flexible power management through IR deep drying**
Wolf Heilmann · wolf heilmann GmbH · Augsburg / Germany

Modellfabrik Papier - progress from FOMOP and FOREST
Andreas Zehnpfund, Jan-Christoph Schlake and Chen Song· ABB AG · Mannheim / Germany
Johannes Lunewski and Philip Kayser · Modellfabrik Papier gGmbH · Düren / Germany

Summary
Stephan Kleemann · IVP - Institute of Paper Technology · Munich / Germany

20:00 **Cultural Evening - Invitation to a concert at the Prinzregententheater**

Monday, 24 March 2025 and/or Thursday, 27 March 2025

Excursions

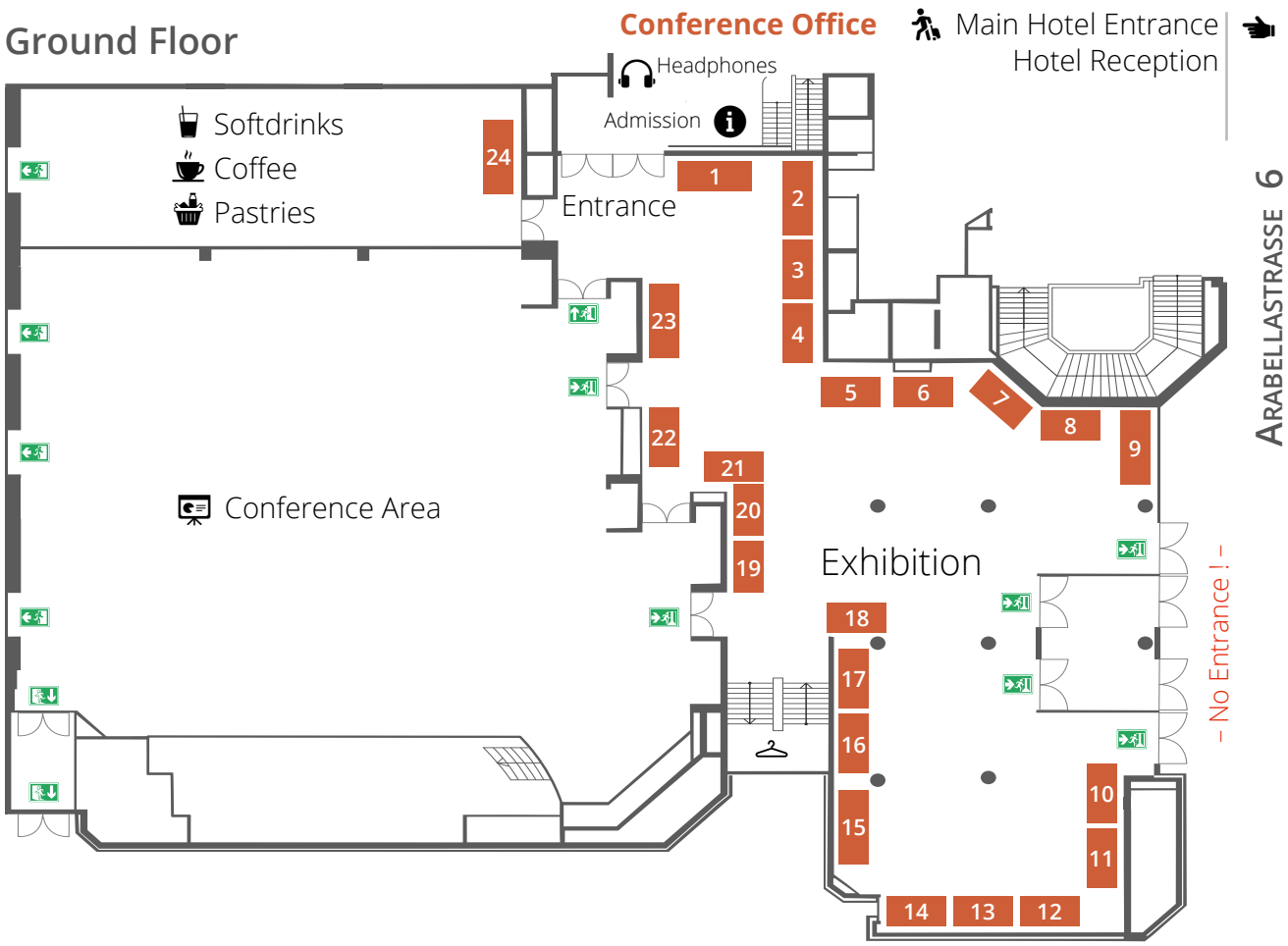
Monday Departure time: 14:15	Laboratories, Pilot Paper Machine and Coating Units at the **Munich University of Applied Sciences** in Munich / Germany
Thursday Departure time: 08:45	**Paper Mill Neenah Gessner** (Specialty papers) in Feldkirchen-Westerham / Germany
Thursday Departure time: 09:00	**Voith HySTech - Hydrogen Storage Technologies** in Garching near Munich / Germany

All buses leave from in front of The Westin Grand Munich conference hotel and return there afterwards.

Prof. Dr. Stephan Kleemann (IMPS Organiser) · 32nd International Munich Paper Symposium 2024

EXHIBITORS

Conference and Exhibition Area



1	Villforth	**9**	PTS	**17**	Oskar Moser
2	ABB	**10**	Trimble	**18**	GAW technologies
3	Emtec	**11**	Cellwood	**19**	Gloning & AREC
4	KPNB	**12**	Maintech	**20**	FRANK-PTI
5	Petax & Techpap	**13**	N.C.R. Biochemical	**21**	fipptec
6	Emco	**14**	Wolf Heilmann	**22**	Deublin
7	X-Rite	**15**	BM Green Cooling	**23**	MAUEL
8	Siemens Energy	**16**	MAN Energy Solutions	**24**	HM & IVP & PaCon

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Data status: Thursday, 6 March 2025

ABSTRACTS

Welcome to the International Munich Paper Symposium

Stephan Kleemann · IVP - Institute of Paper Technology · Munich / Germany

The IMPS is once again focusing on developments that optimise paper and board production processes and improve product quality. An unusually large number of reports come directly from paper mills, underlining both the credibility and feasibility of the optimisations presented. The speakers represent various suppliers and the following paper mills: Papierfabrik Palm at Aalen / Germany, MM Board & Paper at Kolicevo / Slovenia, Smurfit-Westrock at Roermond / Netherlands, Longchen Paper & Packaging - Erlin mill at Zhanghua / Taiwan, Brigl & Bergmeister at Niklasdorf / Austria, Schoellershammer at Düren / Germany, Glatfelter Gernsbach / Germany, Pankaboard at Pankakoski / Finland, Mondi at Vienna / Austria, Paper Mill Reflex at Düren / Germany, Essel Selüloz ve Kâgit Sanayi Tic. A.s. at Osmaniye / Turkey, Weig technical Liner at Mayen, and Heinzel Holding at Vienna / Austria.

During the International Munich Paper Symposium (IMPS), participants will have the opportunity to visit various exhibitor areas directly in the centre of the conference within the general coffee break area. Each exhibitor will be briefly introduced during the introductory welcome. Further information can then be obtained at the respective exhibition stand.

In addition to the conference and exhibition, the IMPS is also an ideal opportunity to get in touch with the students of the international Master's degree program Paper Technology at Munich University of Applied Sciences, which is taught only in English and unique in Europe. The students come from many different countries and the common ground for all of them, apart from the English language, is their interest in technology and the paper and board industry. Approach the more than 30 students present and you may find your future application engineer or long-sought country-specific sales representative among them.

For future contacts, you can contact Munich University of Applied Sciences at *papertec@hm.edu* at any time regarding job offers or interesting internships. Further information about the bachelor's degree program, the dual paper technology program in Munich and the master's degree program in paper technology can be found on the Internet at *hm.edu/smp* and *mpt.hm.edu* as well as *paper.university*.

In addition to training around 50% of all paper engineers for Germany, Austria and Switzerland, the Biofibers and Paper course at Munich University of Applied Sciences is involved in contract studies and research on current topics in biogenic fibre technology and process optimisation as part of its affiliated institute IVP (Institut für Verfahrenstechnik Papier) *www.ivp.org* .

I am confident that you will enjoy the exciting, practice-oriented presentations and an interesting exhibition where you can discuss your own problems with colleagues and make contact with the exhibitors and our many German and international students of paper technology.

A key distinction of the IMPS is that it does not send out public "calls for papers". The presentations at IMPS are always selected based on the experience and knowledge of the organisers and are about successful first-time installations and ongoing optimisation processes. The emphasis is on novel developments applied for the first time and optimisations of existing units or products. The focus is primarily on technical aspects. If possible, we would also like a paper or board or tissue producer to be an author or co-author. We are also open to spontaneous presentation offers.

Successful decarbonization at Glatfelter Gernsbach

Paul Stangenberg · Glatfelter Gernsbach GmbH & Co. KG · Gernsbach / Germany
Rudi Ewert · MAN Energy Solutions SE · Oberhausen / Germany

For many years, specialty papers have been produced in the center of Gernsbach, a city in the south of Germany. Capacitor paper, cigarette paper and many other specialties were in the production portfolio. Today, the company is a market leader in the tea bag sector and also produces overlay papers. Long fibers and their special processing require special machines. High dilution rates in the headbox and the resulting high dewatering performance for the most diverse grades also require an extremely flexible vacuum system.

Higher energy efficiency is just one argument for using a blower instead of a water ring air pump. At Glatfelter Gernsbach GmbH, the water temperature Δt in the receiving water was also a focus. Every m³ that does not increase the discharge temperature relieves the situation and makes the installation of cooling units unnecessary. In addition, a vacuum blower on the pressure side is a real energy source. Hot dry air is fed through two heat exchangers and the energy obtained is used, among other things, to dry the paper web.

From the first point of contact, the entire Glatfelter team was fully committed to the project. By choosing MAN Energy Solutions SE as a partner, they chose a blower with the greatest flexibility in terms of vacuum height and air volume. Another pillar of the concept is the use of standard motors and stable high-performance gearboxes.

The experienced project managers worked with the MAN team to test and evaluate the installation options. Once the two locations for the blowers had been determined, the team was fully challenged to build the necessary infrastructure and overcome one or two hurdles. Converting an existing plant without weeks of production downtime is significantly more complex than a new installation. The location of the factory also requires special attention to be paid to limiting noise emissions.

The expected improvement in energy efficiency also provides an extra portion of motivation. After all, over 40% less energy is to be used at the motor. In addition, 65% of the coupling energy can be recuperated via the two-stage heat exchanger. This means that, in total, 80% less energy has to be used for a better vacuum solution.

However, vacuum is only one step towards decarbonization. The paper industry in Germany must take further steps to maintain its competitiveness under the current conditions.

LC-pulping system for recycled paper with predictive control of the detrashing

Karl Tessler · Schoellershammer GmbH & Co. KG · Düren / Germany
Wolfgang Müller · J.M. Voith SE & Co KG · Ravensburg / Germany

Continuous LC-pulping of OCC involves not only defibering, but also removal of the coarse contaminants contained in the waste paper. The interaction of both processes requires complex measures.

BluePulp LC, Voith's innovative pulping system, accomplishes this task with an optimally coordinated interaction between continuous pulper and cyclically operated disposal. In the presentation, the process is illustrated with the help of a video simulation that details the process steps of heavy parts separation, pumping to the IntensaMaXX detrashing machine with accumulation, washing and reject removal, as well as the final stage of the drum screen with complex water application.

BluePulp LC, which succeeds the proven TwinPulp system, is equipped with the predictive control OnC. Pulping D (detrashing), which dynamically controls the detrashing process. An algorithm indirectly analyzes the level of contaminants in the pulper. Typical operating values, such as power consumption and accept flow rate, provide the program with information about the current contamination level of the recovered paper fed in. Based on the data, the cycle times and throughput rates of the detrashing machines are automatically set to the optimum. Compared to static setpoints, this dynamic operating method can significantly improve fiber loss, energy and water consumption. In addition, machine wear and maintenance requirements are greatly reduced.

Experience with the use of dry-defibered fibrous materials at the Reflex paper mill

Tiemo Arndt · Reflex GmbH & Co. KG · Düren / Germany
Tilo Gailat · TBP Future GmbH · Moosbach / Germany

Various largely unused streams of waste materials from paper, fiber composites, and composites or from agriculture offer additional potential for securing the raw material supply of a paper mill and further improving the sustainability of its products. However, the valuable fiber sources they contain are only available to a limited extent for paper production due to a lack of processing technologies.

One approach to a solution can be the use of dry-defiberized fiber materials. These can be processed very easily into homogeneous and consistent quality from wet-strength or difficult-to-defiber recyclables, agricultural by-products or fiber composites.

To counteract this processing deficit, TBP Future GmbH has developed a dry processing method that can gently break down such products into individual fibers. This makes dry processing technology an excellent energy-saving tool for recovering valuable fibrous materials. In addition to the economically and ecologically important aspect of fiber recovery, dry pulping also offers the possibility of fiber modification and thus the targeted improvement of product properties. The technology is also suitable for processing natural fibers for paper production, thus utilizing their potential for modern specialty and packaging paper production.

The presentation will give a brief overview of the principle, the technology and the performance of dry fiberization, which has already been proven in numerous industrial applications. In addition, the focus will be on experiences with the use of dry fibers in various fields of application. In addition, different possibilities are described for testing alternative raw materials and raw material sources for your own applications or for integrating them into your own raw material concepts, thus convincing yourself of the process and quality stability as well as the economic efficiency of dry-pulping technology.

The example of Reflex GmbH is used to present initial experiences with the use of dry-defibered raw materials in the laboratory and in production. The focus is on explaining the technological and economic potential that can be exploited by using dry-defibered pulps in the production of packaging and specialty papers. In this context, the results of the production and processing of paper from hemp straw that has been dry defiberized are explained. In addition, the importance of creating regional material cycles for a secure supply of raw materials is discussed.

New way for processing packaging board for liquids

Tomi Hankaniemi · Pankaboard Oy · Pankakoski / Finland
Göran Antila · PR Rolls Oy · Tampere / Finland

This presentation will highlight new innovations aimed at simplifying process solutions and eliminating the need for many traditional unit processes such as secondary pulper, coarse screening, HC cleaners and reject drums in recycled fiber lines. This leads to lower total investments, less energy consumption, less operating costs and reduced climate emissions together with higher fiber yield.

Recycled paper contains various impurities which have to be removed from pulp. Hard and heavy particles cause wearing of the process equipment and the most economical way is to remove these impurities as early stage of process as possible. Light rejects like plastics tend to rotate above the vortex made by rotor and they have to be continuously removed. Traditionally there are several equipment needed to remove all these different rejects, but it can also be done in a simpler way.

Usually there are easily degradable material and material which is difficult to disintegrate in the recycled paper. It is known many cases where the disintegration time is too short for the material with higher wet strength and this material ends up in reject. New process innovation makes it possible to extend the disintegration time for the most difficult fibers including wet strength papers meanwhile the energy consumption can be kept lower than traditionally.

These new innovations presented at this paper are result of long-term research and engineering work. They make possible to improve efficiency of old pulpers and also building whole new pulping lines where coarse screening of pulp happens inside the pulper are possible.

Successes and prospects: Mondi's path to operational autonomy

Lars Mallasch · Mondi AG · Wien / Austria
Ulf Grohmann · J.M. Voith SE & Co. KG · Heidenheim / Germany

The paper industry is on the brink of a new era – a future where innovation and automation merge to redefine the very essence of papermaking. At the same time, we're facing more challenges than ever: shrinking resources, a growing lack of skilled workers, and a new, urgent need for sustainability. This presentation delves into the transformative potential of the autonomous paper mill and the solutions it offers to these challenges.

At Mondi we are convinced that industrial autonomy will create a compelling future, combining IT and OT technologies to elevate the workforce, thus enabling future economic growth and sustainable operation.

Together with Voith we ventured into a new development for our mills that will increase the efficiency of every single operator, freeing up capacity to innovate and drive the internal transformation process. With the use of Optima as our implementation of Voith's operations management solution MillONE we will improve our work processes, stabilize production, and lift productivity and output to an entire new level.

With Optima Mondi can bridge internal organizational boundaries by creating a unified interface for all involved users, e.g. operations, maintenance, management. Further the solution allows to scale the methodology across all production assets and the global Mondi fleet. The first implementations on several production lines show us that we are on the right path into the future. Operators have shown great acceptance of the system and became meanwhile an active part of daily continuous improvement activities.

The new technologies of the autonomous paper mill will be a catalyst for change, propelling the pulp and paper sector as well as the paper industry in general toward a future characterized by climate-positive practices. Autonomous paper mills will allow us to take an active step toward new industry standards where resources are conserved, reused, and recycled, reducing the paper industry's ecological footprint.

Digitalization has the potential to not only support the industry but amplify its biggest assets: machines operating with remarkable precision, powered by artificial intelligence, data analytics, and smart sensors – fusing cutting-edge technology with the principles of circularity and sustainability. Autonomous paper mills will empower the skilled workforce with advanced tools, enabling them to make data-driven decisions and foresee challenges, thus reducing the potential for mistakes and miscalculations. Advanced AI-driven systems and IoT integration will ensure precise control over resource consumption, minimizing waste and maximizing the use of renewable materials.

At Voith, we are convinced the autonomous paper mill embodies resilience and adaptability in the face of climate challenges. Its agility in responding to market demands, coupled with its ability to innovate rapidly, can position the pulp and paper sector as a dynamic force within the industry. With this presentation, we hope to engender discourse, collaboration, and partnerships, fostering a collective commitment towards leveraging technology for a sustainable, circular, and climate-resilient future.

Operational experience with the innovative Sleeve roll technology at Palm PM5

Alexander Kanditt · Papierfabrik Palm GmbH & Co. KG Co. KG · Aalen / Germany
Christian Strohschein · Valmet GmbH · Darmstadt / Germany

The Aalen-Neukochen mill is the origin and headquarters of the Palm Group and Papierfabrik Palm. In addition to the production of corrugated cardboard base paper, the site also houses the administration and sales departments for the three German paper mills.

As part of an investment of 500 million euros, the old plant, which consisted of three outdated paper machines, a power plant, and a wastewater treatment plant, was completely dismantled between 2017 and 2022 and replaced by a modern production plant (Palm Aalen PM5) for the manufacture of ultra-lightweight corrugated cardboard base paper. The new production plant with an annual capacity of 750,000 tonnes is a trendsetter for even lower basis weights for corrugated cardboard base paper and thus for further ecologically oriented savings in corrugated cardboard packaging. Thanks to the use of the latest technologies, the paper machine supplied by Valmet produces ultra-lightweight corrugated cardboard base paper even more efficiently and in a resource-saving manner. Overall, this reduces energy requirements and emissions along the entire value chain in the production of corrugated cardboard packaging.

With a trimmed working width of 10.9 metres, Palm Aalen PM5 is the widest containerboard machine in the world and, among many other innovations, has the second sleeve roll ever supplied by VALMET in the wire section. The special feature of the sleeve roll is its high dewatering performance without vacuum. High pulsation to remove the water from the web is also avoided, which in turn has a very positive effect on the internal binding forces in the paper.

In this presentation, the concept of the PM5 and the decision-making process for the sleeve roll will be presented first. This is followed by a technical explanation of the sleeve roll and operational experience with this innovation.

Hard nip sizing with curtain application at MM Količevo BM3

Michael Petschacher · MM Board & Paper · Količevo / Slovenia
Rado Kunavar · MM Board & Paper · Količevo / Slovenia
Henri Vaittinen · Valmet Technologies, Inc. · Järvenpää / Finland

In curtain sizing, the starch is applied in the form of a curtain to hard rolls and then pressed to the web. This method has many benefits compared to the conventional surface sizing methods. Curtain application is based on higher starch solids contents (20…30%) than film sizing (10…15%) or pond sizing (5…10%). This means that the curtain sizer applies less water with starch to the web.

Due to the high solids content of starch, the afterdryer section can be very compact after the curtain sizer, as less drying energy is needed after the sizer. A compact afterdryer section gives the possibility to increase the production of board making line remarkably, as it makes it possible to extend the predryer section without moving the coating section or reel location. In some cases, it is possible to install a curtain sizer to a board making line that has originally not had any surface sizer.

Also, the smoothness development of the sheet is enhanced with curtain sizer. This is related to the reduced wetting in surface sizing, which decreases the unwanted roughening effect of the base board. In curtain sizing, the optimized balance between the size coverage on the sheet and the size penetration into the sheet can be adjusted with the nip load. This is possible as the nip pressure can be adjusted with a deflection-compensated hard roll. Curtain sizer can also be used to apply pigments and several other chemical components to the web. For example, with pigment application it is possible to increase brightness and smoothness of the base board.

In October 2023 the first ever hard nip sizer with curtain application was started-up at MM Količevo BM 3 mill in Slovenia. The board machine BM 3 produces three different product classes, and it needed a sizer that would be flexible enough to fulfil the requirement of the wide product portfolio. The results from the first year of curtain sizer operation are presented as well as experiences from the start-up.

Steyrermühl PM6 - An innovative conversion concept from graphic grades to high-quality kraft paper

Mario Wiltsche · Heinzel Holding GmbH · Vienna / Austria
Gerald Steiner · Andritz AG · Graz / Austria
Albrecht Miletzky · Andritz AG · Graz / Austria

On January 1 2024, HEINZEL GROUP completed the strategic acquisition of the Steyrermühl mill formerly owned by UPM. Ownership of the idled PM3 had already been transferred to HEINZEL in March 2023, allowing the conversion from supercalendered graphic grades to kraft papers. With this project, the company expanded its bleached and unbleached kraft paper production capacity by an additional 150,000 t per year.

This ambitious conversion included a new softwood and hardwood fiber line as well as rebuilding the gap former to a single, fully adjustable PrimeForm TW shoe-blade gap former, thereby ensuring high flexibility in basis weights ranging from 30-100 gsm at production speeds up to 1200 m/min. This concept also includes a new PrimeFlow AT headbox, a combination that results in lowest MD/CD ratios that are significantly lower than those from any other conventional gap formers in the market. What's more, the ANDRITZ PrimePress X shoe press and upgrades in the steam & condensate system achieve significant energy savings. The new ANDRITZ VIB SteamTech profiling system and the PrimeCal soft calender technology further enhance the paper's surface quality, making it ideal for demanding kraft paper applications.

The equipment selection was proven in pilot trials via joint efforts between HEINZEL GROUP and ANDRITZ and features several innovations, most notably the use of a nonceramic drainage surface in initial forming phases. The nonceramic surface is a steel alloy which allows dramatically increased flexibility of pressure profile design, increased durability, and reduced CAPEX and OPEX considerations, all while offering very high wear resistance.

After a challenging project lead time of only 16 months, the machine started up at the beginning of May 2024, perfectly on time. After an unbelievable period of just four weeks, the target production capacity for the first paper grades had already been achieved, and further optimization is still taking place. The PM6, with its new headbox and forming section, sustainably achieves the excellent profiles needed for high-quality end products.

The conversion at the Steyrermühl mill is the latest successful project in the long cooperation between ANDRITZ and HEINZEL GROUP.

Experience at Brigl & Bergmeister with new type of headbox

Oliver Präpasser · Brigl & Bergmeister GmbH · Niklasdorf / Austria
Markus Häußler · J.M. Voith SE & Co. KG · Heidenheim / Germany

The MasterJet 4Tec represents the fourth generation of MasterJet headboxes from Voith Paper. This new generation offers significant advantages in four key areas, namely formation, pulsation damping, ease of operation and energy efficiency.

Compared to its predecessor, the already powerful MasterJet Pro, the MasterJet 4Tec offers significantly improved headbox jet quality. This is an excellent basis for very good formation values, no streakiness and therefore perfect paper properties.

Another highlight of the MasterJet 4Tec is the newly developed pulsation damper, which offers four essential advantages. It has a flexible membrane that separates the air volume from the pulp suspension, ensuring maximum cleanliness and stable machine operation. In addition, the damper does not generate any pressure loss, which reduces the energy consumption of the headbox pump. It also requires no cleaning, which saves fresh water, and is more compact and easier to install, even on existing machines.

Voith has also improved the operating comfort of the MasterJet 4Tec. An important innovation is the new EdgeMaster, which prevents the suspension from flowing off sideways. Its new design makes it easier to operate and effectively reduces edge waves.

In terms of energy efficiency, the MasterJet 4Tec uses several levers to reduce energy consumption, based on the proven MasterJet technology. Even with the previous MasterJet Pro, the cross-distributor does not require recirculation. This proven technology is also used in the MasterJet 4Tec. This reduces the volume flow to the headbox by up to 10%. In addition, the new pulsation damper and the optimized turbulence tube reduce the pressure loss at the headbox by around 25 percent.

In summary, the MasterJet 4Tec represents a significant advancement in headbox technology, offering considerable advantages in terms of paper quality, energy efficiency and ease of use.

New approach for saving steam consumption and CO_2 whilst reducing sticky and sheet breaks

Chung-Chi Wu · Longchen Paper & Packaging CO., LTD. Erlin mill · Zhanghua / Taiwan
Hiroshi Sekiya · Maintech Co., Ltd. · Tokyo / Japan

For many years, the paper industry has been making every effort to maximize the use of recovered paper, further improve recycling technology, and expand the use of recycled paper. Recycled paper generally contains impurities such as duct tape, labels, and ink, which cause deposits on the dryer section surface. These deposits lead to defects, holes, and sheet breaks, significantly reducing paper machine productivity.

Maintech Dryer Section Passivation (DSP) prevents stickies and paper dust in the dryer section by spraying passivation chemicals onto the dryer section surfaces with oscillating air-atomizing spray nozzles.

DSP chemicals are primarily oil emulsions. The water component of the chemical sprayed on the surface of the dryer cylinder and fabric evaporates, forming an extremely thin protective layer of oil that prevents the stickies and fine fibers on the wet sheet surface from transferring onto the surfaces and significantly reduces deposition and dusting on the dryer cylinder. Also, the protective layer enables the doctor blades and high-pressure cleaners to scrape off the deposits easily. This effect extends the lifetime of doctor blades and fabrics as well as reduces the frequency of batch cleaning. In addition, DSP can reduce steam consumption and even increase the machine speed because the clean cylinder enhances heat transfer to the wet sheet while the clean fabric maintains permeability.

Paper mills can benefit from Dryer Section Passivation significantly:

First, DSP can keep the cylinder and fabric clean to increase drying efficiency. This reduces energy costs and CO_2 emissions, making manufacturing recycled paper more eco-friendly.

Secondly, DSP can improve productivity by reducing sheet breaks and downtime for batch cleaning, improving product quality and operator safety and reducing the environmental impact of aggressive chemicals.

Additionally, the paper mill can increase the utilization rate of low-quality recycled paper, such as mixed waste, to reduce the material cost.

Increase in machine availability with regard to stickies in the production of light-weight corrugated base paper

Maximilian Krallinger · DS Smith Paper Deutschland GmbH · Aschaffenburg / Germany
Christoph Waßmer · CTP GmbH · Schwabmünchen / Germany

The use of recycled paper in paper production, which is becoming increasingly poor in quality, poses significant challenges for paper mills. One of the main problems is stickies and fibres, which are pulled out of the paper web by the drying cylinders and drying fabrics and then build up on the cylinder surfaces, drying fabrics, guide rolls, doctor blades and in the drying hood. These deposits can cause far-reaching problems:

The build-up of deposits on drying cylinders reduces the heat transfer to the paper web. Deposits on drying fabrics reduce air permeability, heat transfer and evaporation efficiency, thus preventing efficient drying of the paper. This reduces the drying capacity of the machine and increases specific energy consumption. Another effect is, for example, an uneven moisture cross-profile of the paper.

If the stickies are detached from the surfaces and transferred to the paper web, it can lead to breaks due to holes and edge cracks, broke and production losses. This not only causes considerable problems at the paper machine, but also in the downstream processing steps, which can play a decisive role customer complaints.

There are several possibilities for solving these problems. For example, the addition of platelet-shaped pigments or polymers in the approach flow, coating drying cylinders or spraying additives onto drying cylinders and drying fabrics. However, each of these solutions is limited in terms of its scope of application and success. The following problems were analysed at DS Smith Paper in Aschaffenburg:

- Fibre picking and dusting in the first dryer group (reduced heat transfer due to clogged cylinders, as well as sticky deposits in front of and behind the doctor blades - holes, cracks and breaks)
- Stickies on the bottom cylinders of the first double-tier dryer group, as well as in front of and behind the doctor blades (holes, cracks and breaks)

Finally, PCA technology was applied in collaboration with CTP GmbH (one application per each side of the paper), which resolved the problems. This resulted in increased productivity and quality, as well as significant cost savings.

Modified GCC to reduce sticky/pitch deposits in papermaking

Ahmet Nabi Temüroğlu · Essel Selüloz ve Kâgit Sanayi Tic. A.s. · Osmaniye / Turkey
Luis Ferraz · Omya International AG · Oftringen / Switzerland
Özgür Yildiz · Omya International AG · Oftringen / Switzerland

The build up and accumulation of pitch (wood resin) and stickies (e.g. adhesives, ink and coating binders from recycled fibers) deposits negatively affects pulp and paper mills, leading to machine shut downs, increasing cleaning time, maintenance, production costs and compromising product quality.

Talc has been the benchmark for many years as a mineral additive in pitch and stickies control. Talc's surface properties render this mineral very efficient in adsorbing pitch onto it's surface, reducing its tackiness and avoiding the creation of larger agglomerates. Differently from chemical dispersants, that are used to maintain pitch or stickies colloids in a dispersed state to prevent its deposition but fail to remove them from the close recirculated water systems, pitch and stickies compounds adsorbed to minerals are efficiently incorporated into the paper structure and thus removed from the aqueous circuits and effluent streams within the final product. However, talc may contain contaminants harmful for human health, and therefore, the replacement of talc in the pulp and paper industry is desired.

Differently, calcium carbonate (CaCO3) mineral, commonly used as a paper filler or coating pigment in paper making is unharmful for humans. In this work, Omya research and development team have mimicked talc's functional properties on calcium carbonate particles and developed an efficient mineral solution to replace talc as pitch/stickies control solution.

Recently, Omya's functionalized calcium carbonate was used to control stickies in a tissue paper production factory. The results of this trial, as well as, different test methods for pitch and stickies control evaluation will be discussed in this presentation.

Hamburger Containerboard: experience with an innovative cooking process for starch

Wolfgang Leitner · W. Hamburger GmbH · Pitten / Austria
Erik Musaev · W. Hamburger GmbH · Pitten / Austria
Christian Stirn · PGA Anlagenbau GmbH · Wernberg / Austria

As early as 2022, the Hamburg-based group decided to process starch using the innovative and patented cooking process from PGA Anlagenbau GmbH at its Gelsenkirchen site.

The reason for the investment was the desire to significantly increase the efficiency of starch processing and thus the efficiency of the site itself. In particular, the consumption of steam and starch was to be reduced as much as possible. In addition, the aim was to improve the quality of the starch that had already been processed and to prepare a homogeneously cooked starch without a swelling agent for the ASA plant.

This cooking line has been in successful continuous operation since the beginning of 2023. The centerpiece of the line is the PGA starchPERFORMER. The starch digester is based on a patented thermo-mechanical cooking process and is revolutionizing the processing of corn starch and surface starch in the pulp and paper industry. Compared to conventional cooking systems, the PGA starchPERFORMER significantly reduces steam consumption while producing completely homogeneously cooked starch. In addition, the system offers maximum flexibility when using different types of starch and enables a quick change between different types. The enzymatic starch degradation process is fully under control with the PGA starchPERFORMER. The starch binding capacity is used more efficiently and the molecular weight distribution is also regulated. This can significantly reduce the amount of starch needed.

This presentation will first examine the initial situation and the optimization measures taken in starch processing at the Gelsenkirchen site. This is followed by a technical explanation of the starch processing with the help of the PGA starchPERFORMER, and finally by the operating experience with this innovation.

PGA Anlagenbau GmbH is part of the IBS Paper Performance Group, based in Teufenbach-Katsch, Austria.

Water-saving direct mixing of retention aid

Henning Dippel · Weig Technical Liner GmbH & Co. KG · Mayen / Germany
Daan Waubert de Puiseau · econovation GmbH · Göppingen / Germany

The boundary conditions for water use are becoming increasingly challenging, even for additive processing systems initially classified as low-consumers, because

- fresh water withdrawals are increasingly not free of charge,
- sufficient fresh water quantities are not always available due to climate change,
- more fresh water means more process heat losses in the wastewater stream,
- some fresh water qualities can reduce polymer performance, and
- seasonal fresh water conditions often pose major challenges for process hygiene and reduce the overall efficiency of the plant.

The multidimensional vortex process for mixing in is already known for the very late mixing in of retention agents and pigments. In this case, situations arose where polymer with 2% solids content had to be mixed in directly because existing processing was limited. These first attempts were mostly standardized with success.

A special partner with several projects is the WEIG Group in the Eifel region after the dry summer of 2022.

It started with the construction of a fresh water-reduced powder polymer processing plant from 0.3% to 2%, with an ecowirl injector for each of the two sludge dewatering lines at the power plant.

This was followed by the conversion of the two recirculating water purification systems (flotation systems) in the plant to fresh water-free operation of liquid polymers.

Finally, the retention agent dosing system of the 3-layer board machine was converted. First, a single layer was converted in a trial run for six months, after which all the dosing systems were converted.

The dosing systems in the periphery of the paper machine are briefly discussed and then the challenges on the paper machine are discussed in more detail.

There is also a brief report on the challenges with white papers.

The further development required for the specifications discovered in Mayen for good blending of the ecowirl m on m² and m³ is shown.

Wishes and requirements for polymer qualities are formulated for discussion.

First successful turbine operation with 100% green H_2 at Smurfit-Westrock

Theo Peulen · Smurfit-Westrock · Roermond / The Netherlands
Ertan Yilmaz · Siemens Energy · Charlotte / USA

The production of pulp and paper, as an energy-intensive industry, faces a significant challenge in the rapid transformation into a climate-neutral industry operation, which is also changing the landscape of energy generation. While the preferred method for electricity and heat generation in pulp and paper production is the high efficiency combined heat and power (CHP) process, the overall transformation increasingly emphasizes renewable, fluctuating energy sources such as solar and wind energy. However, in this context, heat generation is overlooked, which must be considered and integrated in the design for continuous and consistent paper production. One solution for gradually transitioning from fossil energy generation to climate-neutral energy generation is the path based on green hydrogen. Hydrogen can be produced from renewable energy sources and serves as a storage medium and green fuel for both carbon-free thermal and electrical energy generation.

This concept, towards a green hydrogen infrastructure, is globally supported and backed by significant investment programs. One significant initiative is the HYFLEXPOWER project funded by the EU. In this project, green hydrogen is produced from renewable energy, stored on-site, and converted into electricity and heat for the Smurfit Westrock paper mill in Saillat-sur-Vienne, France, using an SGT-400 gas turbine. This development towards a CHP plant that ultimately operates the gas turbine on 100% green hydrogen is presented at the IMPS 2025.

Economic cooling of waste water and rooms as a CO_2 sink for high-temperature heat pumps

Eberhard Knödler · BM Green Cooling GmbH · Schwarzenbruck / Germany

BM Green Cooling (BMGC) offers green tech specifically for the paper industry. In this presentation, the focus will be on the new possibilities offered by the integration of ultra-high temperature heat pumps into the steam range.

BMGC supports from the initial idea through the planning, implementation with its own devices, through MSR technology, to the required service level of the customer. Feasibility studies and pinch analyzes complete the portfolio. Informative reference projects can be found throughout Europe.

Energy-efficient control room air conditioning

- Direct river or well cooling without compressor.
- Optimized free cooling with free cooling shares of up to 90% p.a.
- High leverage of such projects for decarbonization.

Waste water cooling

The legal requirements for the temperature of waste water are currently being tightened. Modern, energy-efficient waste water cooling systems with simultaneous waste heat recovery use the waste heat from the waste water in a targeted manner to heat processes or to generate steam using high-temperature heat pumps.

- Waste2Heat
- Waste2Steam
- Waste2Cool

Waste heat recovery with high-temperature heat pumps

- High-temperature heat pumps from 110–220 °C.
- Achievable key performance indicators and influence on decarbonization.
- Influence of the refrigerants still available. Trend towards natural refrigerants.
- Available series technology + pilot plants with natural refrigerants.
- Selection criteria for choosing the most suitable and cost-effective solution.

Flexible power management through IR deep drying

Wolf Heilmann · wolf heilmann GmbH · Augsburg / Germany

Paper production is highly energy intensive. A good two thirds of energy consumption is used to dry the paper and coatings. The vast majority of this energy is currently generated using fossil fuels.

To decarbonize the paper industry, these fossil fuels must be replaced by electricity that can be generated from renewable sources. Today, electric drying is still in its infancy, with the exception of infrared drying. However, conventional NIR emitters are relatively inefficient, making them insufficient for drying.

Compact Engineering's eNIR dryers typically vaporize twice the amount of water with the same amount of energy, making them competitive with fossil drying. Above all, the radiation penetrates deep into the substrate and dries from the inside out.

We show how these energy-efficient dryers can be used as catalysts for drying cylinders and gas-powered hot air hoods. The catalyst effect significantly reduces the energy requirements of the following cylinders and/or hot air hoods.

Profile control with eNIR dryers instead of overdrying with fossil energy reduces the need for fossil energy by a similar amount. Together, the steam requirement can be reduced by 15% to over 30%.

It is already possible today to choose between fossil and renewable energy and, depending on the cost of the electricity, to control the drying of the paper machine in such a way as to reduce costs and, above all, CO_2 emissions.

Together with the digital twins from AutomationX, the conversion of reject pulp into fuel pellets and the heat pumps from BM Green Cooling, the biggest part of a paper mill's fossil energy requirements can be electrified in this way.

Modellfabrik Papier - progress from FOMOP and FOREST

Andreas Zehnpfund · ABB AG · Mannheim / Germany
Jan-Christoph Schlake · ABB AG · Mannheim / Germany
Chen Song · ABB AG · Mannheim / Germany
Johannes Lunewski · Modellfabrik Papier gGmbH · Düren / Germany
Philip Kayser · Modellfabrik Papier gGmbH · Düren / Germany

The paper industry is one of the pioneers of the circular economy. With over 3,000 different products and different product properties, it still achieves a recycling rate of over 80%. However, with an energy consumption of around 2,600 kWh per tonne of paper and a total annual production of 19 million tons in Germany, it is one of the most energy-intensive industries and a significant CO_2 emitter and energy consumer [1].

To optimize energy management and track the CO_2 footprint in detail at sub-process and product level, a framework for digital twins of paper production is being developed under the leadership of Modellfabrik Papier gGmbH as part of the third-party funded project (FOREST). The reference architecture created in the project is scalable and uses innovative digital twin technologies such as Asset Administration Shells (AAS) and Functional Mock-up Units (FMU) [2]. Together with detailed models of the processes, energy supply and paper quality, paper manufacturing processes can be accurately simulated and analyzed.

Chemical and/or enzymatic fiber modifications, the use of additional and novel (bio-based) process chemicals and alternative fibers are analyzed to tailor water absorption and water retention properties. Proven technologies are validated and transferred into new technologies/prototypes (SP1 - tailor-made raw materials). New types of process control in aqueous media and innovative technologies (e.g. for grinding, press and drying sections) focus on reducing the primary energy used. Here, too, laboratory test rigs and pilot machines are being set up and validated (SP2 - innovative systems in aqueous media). In (semi-)dry paper production, fleeces are formed from dry fibers using the Airlaid process and then conditioned to different moisture contents. These conditioned fleeces are bonded in a press at elevated temperatures and different pressures. The prospect of transferring this process from laboratory to industrial scale offers considerable potential for water and thus energy savings during drying. Another supporting method used in SP2, among others, is computational fluid dynamics (CFD). This allows the geometry and functionality of prototypes and pilot machines to be simulated, optimized and then designed for engineering purposes (SP3 - System Change in Fluid) [3, 4]. To accompany the development, scaling and validation of the novel methods at prototype level, energy evaluations are carried out on a laboratory and pilot plant scale. The resulting calculations are used to objectively evaluate energy, ecological and material balances. At the same time, the developed modules are combined to form a holistic process (SP4 - Systemic Integration).

References:

[1] Papierindustrie D. Papier 2023-Ein Leistungsbericht. Die Papierindustrie e. V. Bonn. 2023.

[2] Juhlin, Prerna, et al. "Open Reference Architecture for Sustainable Papermaking Based on Industrial Interoperability Standards and Cloud-Native Technologies." Proceedings of the 2024 IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2024.

[3] Brydon, A. G., Pourmohammadi, A., & Russell, S. J. (2022). Drylaid web formation. In Handbook of nonwovens (pp. 89-180). Woodhead Publishing.

[4] Jin, Y., Liu, Y., & Cui, J. (2023). Numerical study on the motion characteristics of an elastic fiber migrating in a cylindrical Couette flow with centrifugal effect. Acta Mechanica Sinica, 39(3), 322423.

CULTURAL EVENT

The King's Singers
Wednesday, 26 March 2025
Start of the show at 20:00

The King's Singers. © Frances Marshall

Event Location

PRINZREGENTENTHEATER
Prinzregentenplatz 12
81675 Munich
Germany

Tel. +49 89 218502
www.prinzregententheater.de

Details

19:15 Bus departure from the conference hotel

20:00 Start of the show

Event duration approx. 2 hours incl. break

Unrivalled listening pleasure is guaranteed when the a cappella ensemble 'The King's Singers' perform at their vocal best with British wit and gentlemanly appeal, capturing hearts and ears in the process. The British vocal ensemble amazes with its wide-ranging repertoire and is celebrated worldwide for its vocal perfection and flawless technique. Since 1968, the tradition-conscious sextet from Cambridge has been constantly taking on new challenges. In 2023, the Grammy award-winners released three albums that could not be more diverse: In addition to an album of Renaissance works, they dedicated a second to the sound of Disney, followed by 'Wonderland' as an impressive range of their commissioned compositions.

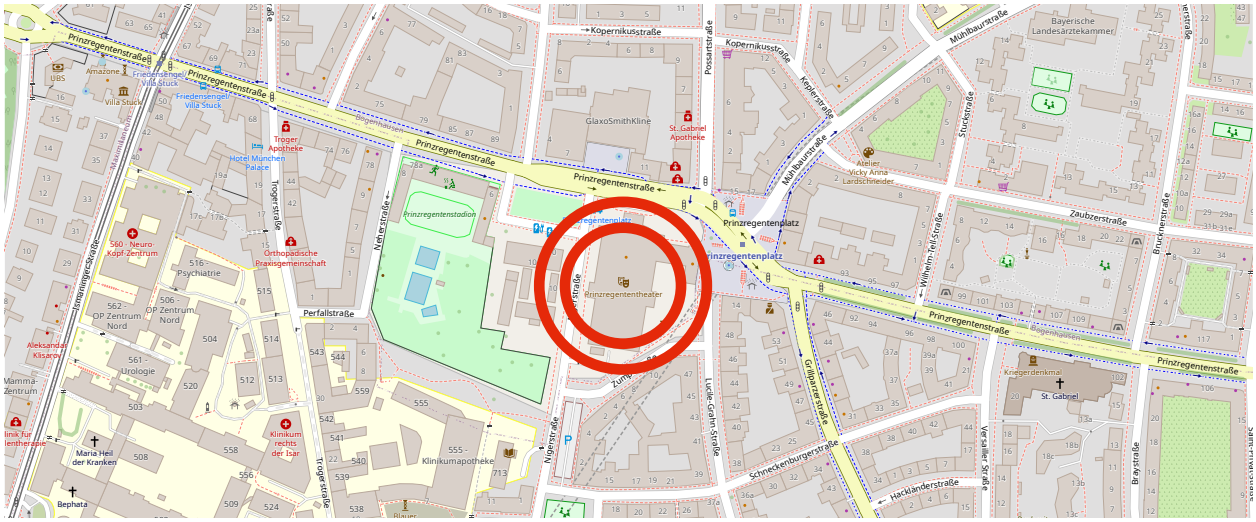
The King's Singers. © Frances Marshall

The location of the event: the Prinzregententheater, Munich / Germany.

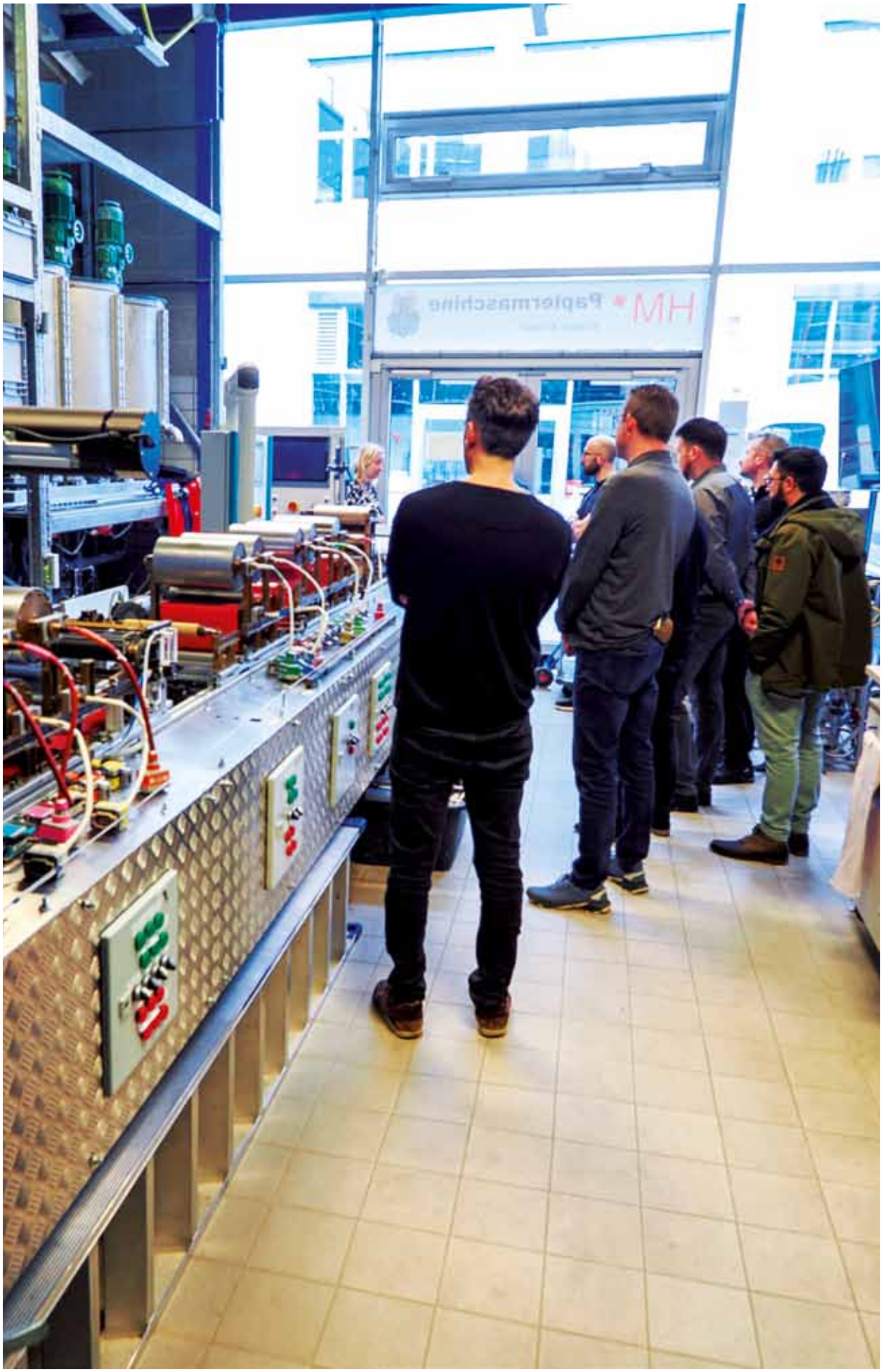
The six singers with their inimitable vocal style now invite you to a 'best of' their favourite showpieces from pop, jazz and folk and take their audience on an entertaining, moving journey. An evening full of 'Close Harmony' jewels that remain unrivalled in their original arrangements and captivating harmonies.

The concert is taking place in the Prinzregententheater in Munich, a jewel of Munich's cultural scene.

Cultural Event
GAW technologies
SPONSOR



Map of the Prinzregententheater in Munich. The red circles mark the location of the event.



The pilot paper machine at Hochschule München University of Applied Sciences during the excursion of the IMPS 2024.

EXCURSIONS

Excursion I
Munich University of Applied Sciences
on Monday, 24 March 2025

Lothstr. 34
80335 Munich
Germany

www.mpt.hm.edu

Munich University of Applied Sciences, one of the largest paper and packaging faculties in Central Europe, has been training paper engineers for over 60 years. Since 2007, the Faculty of Paper Technology has offered a Bachelor's degree in 7 semesters. Since 2004, it has been possible to continue with the Master of Engineering (MEng) in Paper Technology, which takes 1.5–2 years. All lectures in the Master's programme are given in English, which makes it particularly interesting for international students. The excursion provides an overview of the courses and educational programmes at Munich University of Applied Sciences and includes a guided tour of the university's modern laboratories. The well-equipped facilities include a Siemens PC-S7 controlled pilot paper machine and modern laboratories.

Programme

14:15	Departure from the main entrance of The Westin Grand Munich conference hotel
14:45	Meeting at the Info-Point by the entrance in Lothstr. 34
15:00	Welcome and information on the study courses
	Guided tour through the laboratories
17:00	Return to the hotel
17:30	Arrival at the hotel

Travel time approx. 30 minutes

Distance approx. 8 km

Excursion II
Paper Mill Neenah Gessner
on Thursday, 27 March 2025

Weidacher Str. 30
83620 Feldkirchen-Westerham
Germany

Internet: www.neenah-gessner.de

Paper production under the name Gessner can look back on a long history: As early as 1845, the first filter paper mill in Germany bears this name. In 1955, filter media for the automotive industry are produced for the first time at the Bruckmühl paper mill. A few years later, further paper machines are built for this purpose in neighbouring Feldkirchen-Westerham, which are soon supplemented by impregnation plants. The special know-how surrounding the impregnation process, both on a methanolic and on an aqueous basis, makes Gessner a leading manufacturer of special papers. In 1998, the company and its two sites are taken over by the American Fiber Mark Group. In 2006 the ownership changes to Neenah, and since 2023 the new owner is Mativ.

The Feldkirchen-Westerham site produces filter media for the automotive industry and industrial filtration, as well as other materials. The machinery equipment includes two inclined wire paper machines, three impregnation lines (Ex lines), three meltblown lines, one laminating line, one nanofibre line and six winders.

Direct competitors and suppliers to the speciality sector are requested to check in advance with the conference office and Neenah Gessner whether attendance is appropriate. Neenah Gessner reserves the right to give limited tours to individual visitors.

Programme

8:45	Departure from the main entrance to The Westin Grand Munich Hotel
9:45	Welcome and company presentation
11:00	Guided tour through the paper mill
12:30	Invitation to a snack and conversation
13:30	Return to the hotel
14:30	Arrival at the hotel

Travel time approx. 45 – 60 minutes

Distance approx. 45 km

A bus to the Munich central railway station and the Munich airport (MUC) will depart at 15:00 from in front of the main entrance of The Westin Grand Munich hotel.

Excursion III
Voith HySTech - Hydrogen Storage Technologies
on Thursday, 27 March 2025

Daimlerstr. 27
85748 Garching near Munich
Germany

Telefon: +49 (0) 89 32001-800
Internet: voith.com/corp-en/hydrogen-storage/hydrogen-storage-system.html

The Voith Group has founded Voith HySTech GmbH at its Garching location as of April 1, 2024. With the new company, Voith is strengthening its position in the growing market for hydrogen technologies and is focusing in particular on hydrogen storage systems for heavy-duty vehicles.

The flagship product, the modular hydrogen storage system for trucks, enables refueling in just 10 minutes and offers maximum safety and storage capacity. The “Plug & Drive” concept promises seamless integration of the systems into vehicles and thus makes a significant contribution to the decarbonization of heavy goods transport. The unique TowPreg winding process achieves a level of quality that is unparalleled in the industry.

Despite the challenges of the market and the high requirements, Voith has succeeded in offering a certified and safe product with this hydrogen tank that is recognized by leading truck OEMs worldwide.

The predecessor company Voith Composites in Garching is the CFRP development and production center of the Voith Group. With over 15 years of experience in the field of fiber composite technology, the production of high-performance components is industrialized. The “from the fiber directly into the component” strategy eliminates expensive semi-finished products from the production process. This results in an enormous reduction in process throughput time and production costs. This results in an enormous reduction in process throughput time and production costs. Production is fully digitalized under the guiding principle of “Carbon Production 4.0”

Programme

9:00	Departure from the main entrance to The Westin Grand Munich Hotel
9:30	Welcome, presentation, guided tour and discussion
11:30	Invitation to a snack and conversation
12:30	Return to the hotel
13:00	Arrival at the hotel

Travel time	approx. 20 minutes
Distance	approx. 15 km

A bus to the Munich central railway station and the Munich airport (MUC) will depart at 15:00 from in front of the main entrance of The Westin Grand Munich hotel.

32nd International Munich Paper Symposium 2024

Pictures of the 32nd International Munich Paper Symposium 2024

INFORMATION BY THE EXHIBITORS

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Patents
Trade Marks
Designs

European IP specialist firm Withers & Rogers will be attending International Munich Paper Symposium (IMPS) 2025.

Looking for advice on patent, designs and trade mark registrations in Europe and further afield?

To get in touch email:
ewittman@withersrogers.com

COMPETENCIES THAT LEAD TO SOLUTIONS

AREC Automatisierungstechnik GmbH specializes in the design and implementation of complex automation tasks as well as digital transformation. The company supports its clients from the initial concept to the realization of the project, providing comprehensive solutions for control and drive technology—ranging from control cabinets to sophisticated software solutions, along with ongoing support and maintenance.

Over time, the woodworking industry has become a key business sector, where AREC is entrusted with machine programming and the development of control systems. Additionally, crane systems and a variety of logistics projects are among the company's core competencies.

AREC CONTROLLER SYSTEM: INTRALOGISTICS WITH SYSTEM

AREC develops and programs fully automated conveyor technologies and autonomous transport systems for various facilities. Through virtual pre-simulation, 3D visualization, and optimized material flow logistics, customers can accelerate and perfect their processes.

The AREC Controller System (ACS) is a specialized solution for controlling, monitoring, and optimizing intralogistics processes. This holistic platform is based on a three-tier architecture model, consisting of the system level, module level, and customer level. This modular design allows for flexible adaptation to individual requirements.

The system level forms the technological foundation of the control center and is built on the SMARTBase Core, which supports essential functions such as authentication, database management, and messaging.

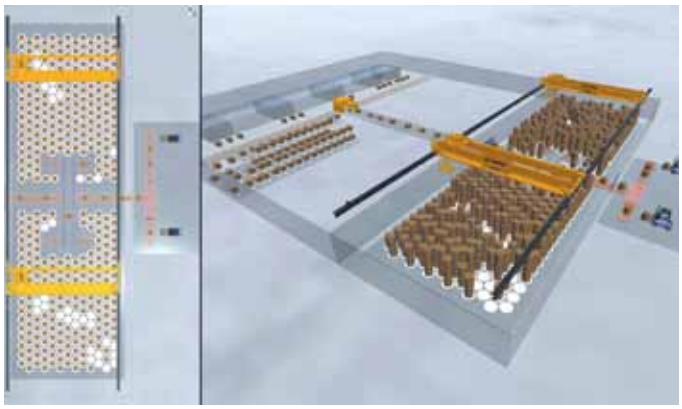
The module level includes all core modules that cover specific tasks and functionalities. These modules are integrated into the control center software according to customer requirements.

The customer level consolidates all customer-related information and requirements. It serves as an interface to seamlessly integrate specific customer needs into operational production and logistics.

AREC SMARTBASE: THE INTELLIGENT FOUNDATION

The AREC Controller System (ACS) is embedded within AREC SMARTBase, which serves as the technical foundation for controlling and managing the entire system. It covers various areas:

- The AREC Material Flow Controller is the key tool for efficient production process and resource management. With flexible strategies and prioritization functions, individual manufacturing requirements can be optimally implemented. Its integration into the AREC platform and the expansion through add-ons enhance the control center's functionality, offering additional possibilities for process optimization, monitoring, and fault management.
- The AREC Warehouse enables the management of various warehouse types and seamless control of transport systems via the AREC Material Flow Controller (MFC). It is the ideal platform for companies looking to digitize and future-proof their warehouse logistics.
- The AREC Forklift Control System offers a highly flexible and configurable platform for managing internal transport processes. It allows for the precise assignment of transport tasks, optimization of vehicle utilization, and intuitive visualization of logistics processes. With its flexible configuration options and seamless system integration, it helps companies increase efficiency, transparency, and productivity.



LOGISTICS INDUSTRIAL INFORMATICS PROJECT

The „Digitalization of Hall I1 at the Linz Industrial Port" is a prime example of AREC's solution-oriented software development. Material is transported to Hall I1 via freight trains, trucks, and cargo ships. Inside the hall, products are typically lifted from transport vehicles and either temporarily stored in the warehouse area or directly transferred to another transport vehicle. With AREC's support, this process has been significantly optimized.

Each crane is now equipped with hardware that provides sufficient computing power to display a high-performance 3D visualization of up to 10,000 objects in the warehouse. The system allows crane operators to determine their workflow, whether by selecting orders automatically or manually after lifting, repositioning products without an order, or storing new products. By integrating 3D visualization, encoder systems, radar technology, and high-performance scanners, AREC has created a powerful and efficient solution that enhances the logistics operations in the Linz region along the Danube, making them more efficient, transparent, and reliable.

- The AREC Simulation replicates production facilities virtually, supporting companies in the analysis, optimization, and planning of their manufacturing processes. It enables precise forecasting and ensures that changes and strategies can be tested virtually before being implemented in reality.Additionally, the innovative 3D concept allows for virtual training sessions for multiple users—even before a facility has been physically built.

AREC Automatisierungstechnik GmbH
Hart – Gewerbestraße 6
3304 St. Georgen/Ybbsfeld
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Reliable and energy efficient cooling solutions from BM Green Cooling!
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- *Natural cooling solutions for paper industry - Riverwater Cooling, Fountain Cooling, Freecooling up to 80% of the year*
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Tailored cooling solutions for the paper industry!

The unique close partner of the paper industry: innovative energy efficient cooling solutions throughout Europe!

BM Green Cooling is the leading provider of energy efficient and reliable solutions for the paper and pulp industry in the areas of cooling (waste water, control rooms and processes) and waste heat utilization. Waste2Heat, Waste2 Steam and Wase2Cool set the tone here. Together with the customer, we optimize the cold and heat flows within a pinch analysis. Our systems use advanced technologies like adiabatic cooling, natural water cooling, and the latest high-temperature heat pumps to ensure efficient and eco-friendly temperature control for your paper mill.

By partnering with BM Green Cooling, you can be sure that you are working with a team of experts dedicated to optimizing your cooling system to meet your specific requirements. Whether you need a new cooling system or want to upgrade your existing one, BM Green Cooling can help you achieve the perfect balance between energy efficiency and reliability. Initial idea -> conception -> planning -> plant construction service. Everything from a single source.

Example diagram of natural cooling and mechanical cooling, including heat recovery:

Cellwood Machinery

Dispersers

Recycled paper made stronger and cleaner.

Pulpers

Energy efficient solutions for paper dissolving.

Conveyors

Custom material handling solutions.

Microfilters

Safe re-use of process water.

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- Engineered to last the life of any paper machine

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ON-SITE DRYING-SECTION-TRAINING

The **paper product training** takes place at your premises considerating your shift planning and can directly address local tasks.

Our focus is your experience. We analyze your installed components & systems and compare them directly with best practice. Drawings, cut-away-models, mechanical seal components and a variety of different condensate pick-up shoes will show you the possibilities.

Areas covered in the training

- Steam and condensate behavior inside drying cylinders
- Rotary Unions in paper machines
- Selection of the Siphon System
- Optimization with Turbulence Bars and Mini-Bars
- Cooling Systems
- Steam & Condensate Systems

The Deublin Drying Cylinder rotary model is the highlight of the training where each participant will see and learn about the advantages of stationary siphons installed in our drying cylinder model by studying the condensate behavior while changing production speeds and differential pressure.

The model shows the Turbulence Bar effects, which

- increase production
- improve moisture profile
- optimize paper quality
- improve paper machine runnability
- increase heat transfer

by generating „turbulence“ breaking the laminar condensate layer, they reduce energy costs for production.

DEUBLIN
A HOERBIGER COMPANY

Deublin Rotary Unions and siphon systems have been successfully used on paper machines worldwide for many decades.

Our dryer-section training as a roadshow informs you about the installation, maintenance and optimization of the rotary union, in order to achieve the optimum production performance and at the same time the maximum service life of the components.

For operators and machine designers:	Paper Product Workshops please email for information
Trade fair activities 2025 business unit paper:	International Munich Paper-Symposium, *25.-27. March* Zellcheming-Expo, *1.-3. July, Wiesbaden*
Catalogue download:	https://www.deublin.eu/download-catalogues
Deublin fair data:	https://www.deublin.eu/fairs

▼ Learn more about Paper Energy Optimization (PEO)

Turbulence Bars
Schleifringkörper
Siphon Systems
Multi-Passage
Dampf- & Kondensatsysteme
Störleisten
Rotary Joints
Swivel Joints
Schleifringe
Slip Rings
Kugelgelenke
Drehdurchführungen
Mehrwege
Siphonsysteme
Steam & Condensate Systems
Drehgelenke
Rotary Unions
Slip Ring Units

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Identification of the proccess-relevant characteristics for all applications

Testing service
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Consulting
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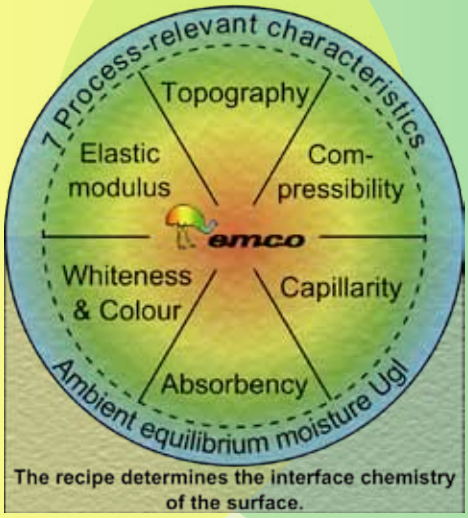
Problem solving
Reclamation

Training
Continuing education

Service
Device inspection

Effective paper testing



Conventional paper specification

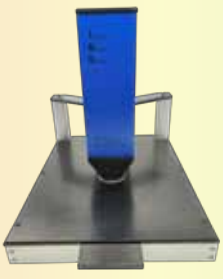
- Grammage
- Thickness
- Smoothness Bekk
- Wet Expansion
- Internal Bond
- Moisture

Special paper specification

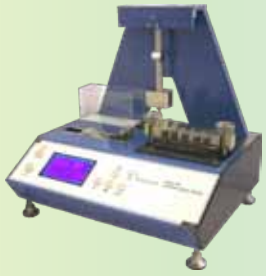
- Topography
- Absorbency
- Capillarity
- Static / E-Modulus

emco measuring technologies reduce costs with better quality!


DPM66


Topography


Testing automat


Internal Bond


Wet Expansion

emco Elektronische Mess- u. Steuerungstechnik GmbH,
Mommsenstrasse 2, D-04329 Leipzig, Germany

Since 1992 Partner of Paper Industry
Since 1996 Partner of Printing Industry
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Automated management system
for the determination of water content

non-destructive ● mobile ● quick

automated ● web data base

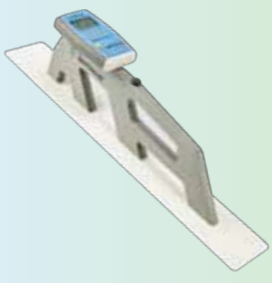
Waste paper - AP 500-M6

Pulp sheets - CMM

Running roll - MP 5

Paper stack - Dolphin P

Knowing the nature of paper makes paper processing calculable!

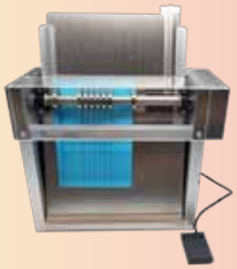


Moisture of PfR

Pulp sheet moisture

Paper moisture

Paper testing



Sample cutter

Tel: +49 341 27146-0 Fax: +49 341 27146-14
E-mail: emco@emco-leipzig.de Web: http://www.emco-leipzig.de

WET END OPTIMIZATION

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Zeta Potential determination online –

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with low
maintenance effort

FPA | FIBER POTENTIAL ANALYZER

CAS | CHARGE ANALYZING SYSTEM

Innovative Testing Solutions

ASH CONTENT ANALYZER | **ACA**

Percentage of individual fillers &

total mineral filler content

accurate
and reliable results
within seconds

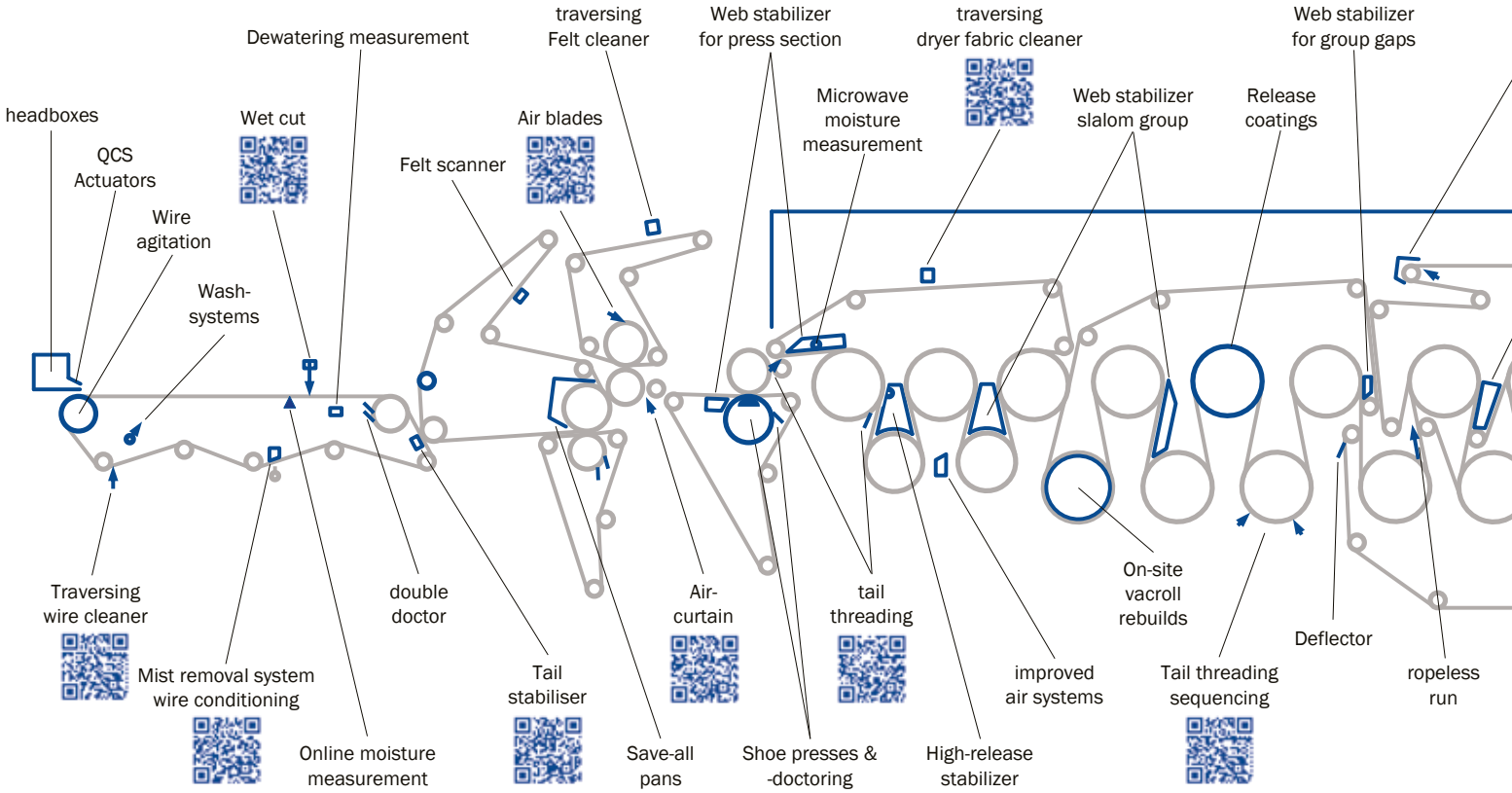
typical fillers are calcium carbonate, titanium dioxide, clay/talcum, barium sulfate, iron oxide and many more

NON-DESTRUCTIVE FILLER ANALYSIS

Take out, switch on, start measurement

zeta potential & particle charge measurement in the lab

FPA *touch!* & CAS *touch!* –
smaller & lighter than ever
(carry-on-luggage size)



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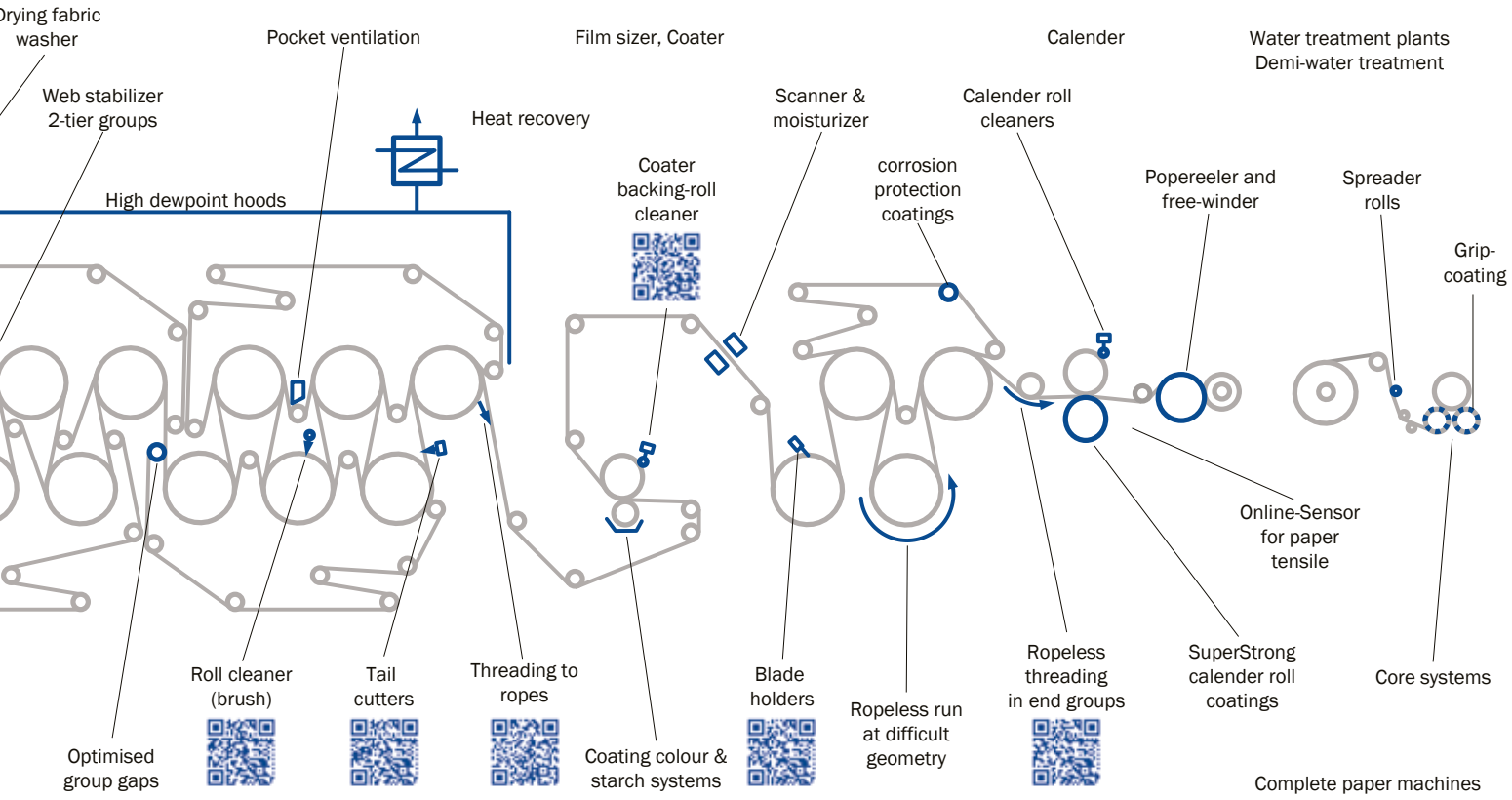

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- Microwave sensors for online moisture measurements
- Feltscanner online

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- Sludge dryer plants for fibre and bio sludge
- Heat pump system, if no local thermal energy available

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Precision Testing Instruments

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FRANK-PTI NOVELTIES 2023/24

Braindl Fiber Classifier

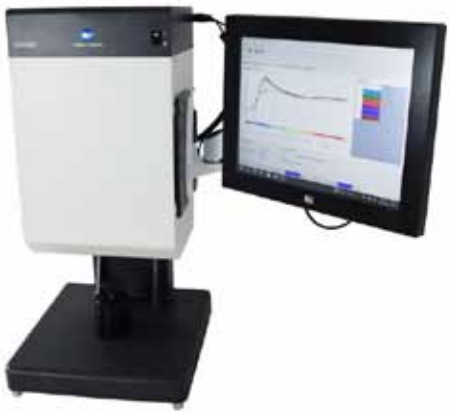
Product group: S40176

- 2 in 1 combi device consisting of Haindl and Brecht Holl
- For analyzing recyclability
- For fiber fractionation

Micrometer

Product group: S16502

- Newly designed and revised micrometer
- New software based on the proven FRANK-PTI layout
- Easiest and most customizable handling thanks to a new access settings
- New difference measurement mode
- Learn more on our website



Spectro Analyzer

Product group: S40606

- Two-beam spectrophotometer with d/0° geometry
- Modular touch screen unit
- Camera system for precise target acquisition
- Measurement compatibility with the previous model

FRANK-PTI GmbH
Auf der Aue 1
69488 Birkenau

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FRANK-PTI NEWS

New Concora with inovative wave segment coating

The Concora Medium Fluter for producing corrugated samples consists of a base and a corrugated housing. Both the motor and controls are installed in the basic housing. The corrugation and heating segments are located behind the protective cover of the corrugation housing. At the top there is a slot for sample feeding. The temperature of the corrugated segments is controlled and displayed via the thermostat integrated in the basic housing. The standard device with exchangeable and pinned segments is available for all common flute types and enables the segments to be changed quickly while still maintaining a tight fit. The corresponding "third hand" and the rubbing block are used to glue the previously formed flute sample.

The new surface coating results in the following adventages:

- Adhesion-proof coating prevents the sample from jamming.
- Changed surface roughness ensures perfect wave formation

Product type: S95936 Concora Medium Fluter

Sample preparation has never been so easy and problem-free!

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GAW technologies

GAW technologies, a member of the GAW Group, is a guarantor of technological competence in international industrial plant engineering and construction.

With more than 70 years of experience, we are the experts for industrial

- preparation & production of chemicals and coating compounds
- automation & digitalization of industrial processes
- water & wastewater treatment solutions

www.gaw.at

Coating	Digitalization	Water
Preparation	Optimization	Recycling

GREAT APPLICATIONS WORLDWIDE

GAW technologies supports paper- and board producers to **achieve their sustainable development goals**. We also help to **lower the carbon footprint**.

With more than 70 years of experience, we are the worldwide leading experts in the areas of **saving of energy / water / resources**.

- **preparation of coating compound and additives for the refinement of paper and board** (coating colour/starch/chemicals etc.)
- **digitalization und automation**
- **water- and wastewater treatment**

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GLONING
KRANTECHNIK

TRADITION OBLIGES, INNOVATION DRIVES US!

Gloning Krantechnik GmbH is one of the leading and most experienced suppliers of specialised cranes in Europe and is also an established supplier of standard cranes in southern Germany. We are your reliable partner for standard crane systems of all kinds as well as for the conversion of existing systems. Our strengths lie in precision, quality and many years of experience.

Gloning Krantechnik GmbH has established a firm place for itself in the day-to-day work of a wide range of industries and sectors by offering customised solutions in the field of materials handling technology.

INDUSTRY LEADER IN SPECIAL CRANES - POWERFUL AND FLEXIBLE

As one of the leading suppliers of specialised cranes in Europe, Gloning Krantechnik develops concepts, components and solutions for complex special systems.

In recent years, Gloning Krantechnik GmbH has realised impressive projects in the paper industry. Our highly qualified team has designed and realised crane systems for paper machines as well as fully automatic crane systems for handling pulp.

Repair and maintenance work for crane systems of all makes is one of our strengths, and a well-equipped service team completes our range of services.

Put your trust in Gloning Krantechnik - more than 40 years of experience ensure a competitive edge.

Gloning Krantechnik GmbH
Im Lachfeld 1
73495 Stödtlen
Germany

www.gloning.com

WE TAKE ON EVERY CHALLENGE

With thorough planning and maximum precision, we have equipped mega projects such as the new Palm paper mill (PM5) as well as smaller and medium-sized companies in the region with customised crane technology. Efficient paper production thanks to powerful cranes from Gloning, which carry impressive lifting capacities of 72 tonnes and are positioned at the paper machine. Our robust and reliable cranes ensure smooth handling of heavy loads, optimise production processes and thus make a significant contribution to increasing efficiency in paper production.

High-Tech meets Sustainability

The art of paper manufacturing is as old as our calendar. Even in the age of the internet, paper is by far the most important information carrier, and it will remain so in the future. New paper machines are bigger, more expensive and even more complex than jumbo jets; they produce paper with a speed at 100 km/h, with a paper width of up to 10 meters and a thickness of only 0.1 mm.

Such a machine produces more paper in one minute than you would need to cover two football grounds. The paper industry is making an increasingly greater use of recycled paper as raw material.

World-wide, Germany is leading with a recycling rate of over 75%, and provides the paper industry all over the world with the technology required to produce high quality paper and cardboard from 100% recycled fibers.

Contact and Information

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Lothstraße 34, 80335 München
Room G 1.03, T +49 89 1265-1501
sekretariat-fk05@hm.edu

Website

Instagram

HM

Munich's University of Applied Sciences is Bavaria's largest university for applied sciences: Over 80 attractive and future-oriented degree programmes form the basis for a successful career. In addition to professional skills, the university promotes sustainable and entrepreneurial thinking and behaviour as well as international and intercultural experience, e.g. through international exchange programmes.

The departments prepare students to contribute to their professions and society with vision, creativity and a sense of responsibility. Close contacts with companies in the high-tech location of Munich ensure practical experience already during the studies. And don't forget: Munich's attractive cultural and leisure activities offer plenty of variety.

Hochschule München University of Applied Sciences

Department of Technical Systems, Processes and Communication

Paper Technology

HM

Master Programme – Paper Technology

The Master Paper Technology in Munich is a unique study course conducted entirely in English, attracting students from over ten different nations. As part of this international and capital-intensive sector, you will learn about the various aspects of paper and cardboard manufacturing while covering a wide range of industry-related topics.

Customize your learning experience by choosing from an array of elective subjects, with support from the industry and the Institute for Paper Technology (IVP).

Engage with up-to-date technology and equipment in well-resourced laboratories, creating an environment that fosters creativity and innovation. Create your own newspaper on a pilot paper machine, while developing your skills through hands-on laboratory work and research projects.

Expect small class sizes and a supportive academic atmosphere. Benefit from an excellent network of well-known companies in the industry and international partner universities.

The Master Paper Technology equips you for leadership roles within the global paper industry.

Study Programme

Degree: Master of Engineering (M.Eng.)
Language of instruction: English

3 semesters for students with a degree in Paper Engineering (or 6 semesters part-time, including Master Thesis)

- Chemical Engineering
- Minerals
- Intercultural Communication
- Scientific Writing
- Recycled Fibres
- Automation Fundamentals
- Fundamentals of Coating
- Coating and Barriers
- General Management
- Paper Chemistry
- Paper Machine Technology
- Automation and Digitalisation
- Design of Experiments and Statistics
- Circular Economy

- Master Thesis

4 semesters study for students without a degree in Paper Engineering (or 8 semesters part-time, including Master Thesis)

In addition
- Paper Technology Fundamentals
- Stock Preparation
- Paper Physics
- Biofibers
- Practical Research Training

Electives (may vary)
- Specialty Papers
- Tissue Papers
- Clothing
- Data Literacy and Industry 4.0
- Product Development
- Printing Technology
- Project Management
- Patent Law
- Innovation Management

Photo Credits
Julia Bergmeister, DIE PAPIERINDUSTRIE e. V., Ulrike Myrzik (Hochschule München), Lena Isabel Schmidbauer, Voith GmbH & Co. KGaA

Job Prospects

First class job prospects are available for graduates of the Master programme. Graduates have very good chances of an interesting career in the world of paper and board.

The paper industry offers many opportunities in production, research and development, as well as in the engineering and supply industry. A Master in Paper Technology provides a wide range of possibilities including mill manager or member of the board of executives.

Those careers are not only reserved for men, as has been proven by a number of very successful female students in the past.

The paper industry is becoming increasingly global, thus favouring our highly international study at Munich University of Applied Sciences.

Admission Criteria

Consecutive Master
- Bachelor from a university, in a Paper Engineering course of study
- Proof of English language skills in speaking and writing (e.g. IELTS/TOEFL test)

Post-graduate Master
- Bachelor from a university, Bachelor of Engineering or a Bachelor of Science degree
- 1 year work experience after degree
- Proof of English language skills in speaking and writing (e.g. IELTS/TOEFL test)

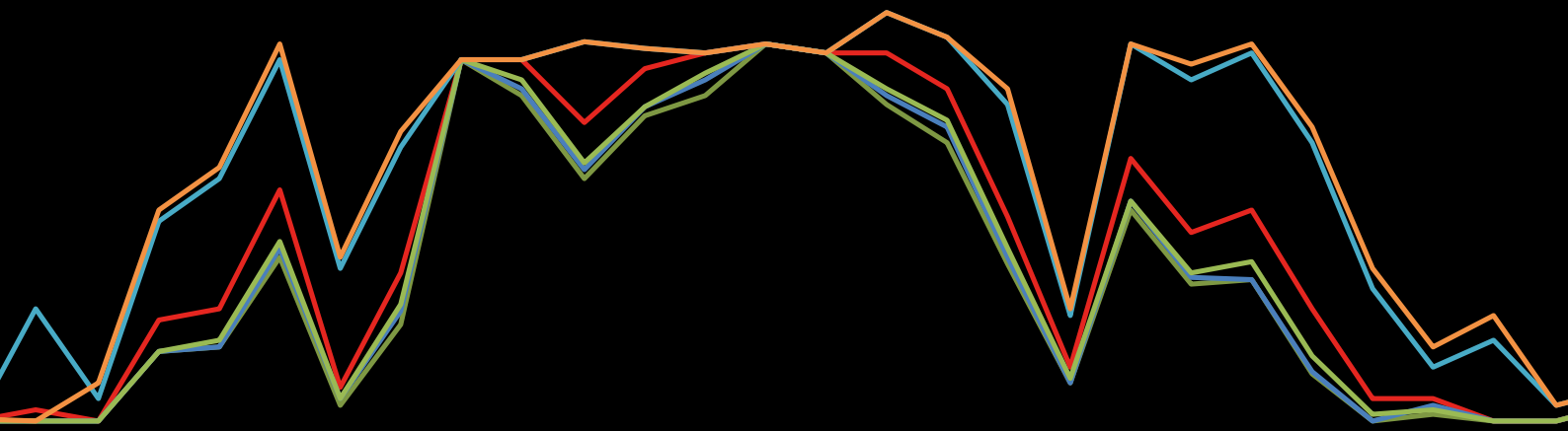
Further conditions for admission may apply.

Costs
- Consecutive Master: Student Union fees and semester ticket fees
- Post-graduate Master: Tuition fees, Student Union fees and semester ticket fees (not including accommodation). Tuition fee can be paid on a semester basis. For details please see homepage.

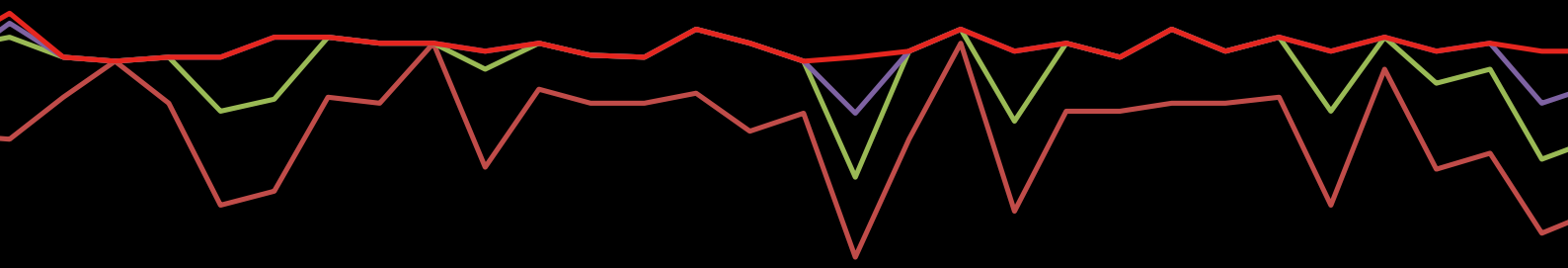
Important Dates
- The consecutive Master starts biannually, on March 15 and October 1, the post-graduate Master starts only in Winter semester, October 1
- For application period and details on the application process please see: http://www.mpt.hm.edu/
- Completed applications should be submitted as early as possible, in order to ensure a place in the programme.

BladeCheck®

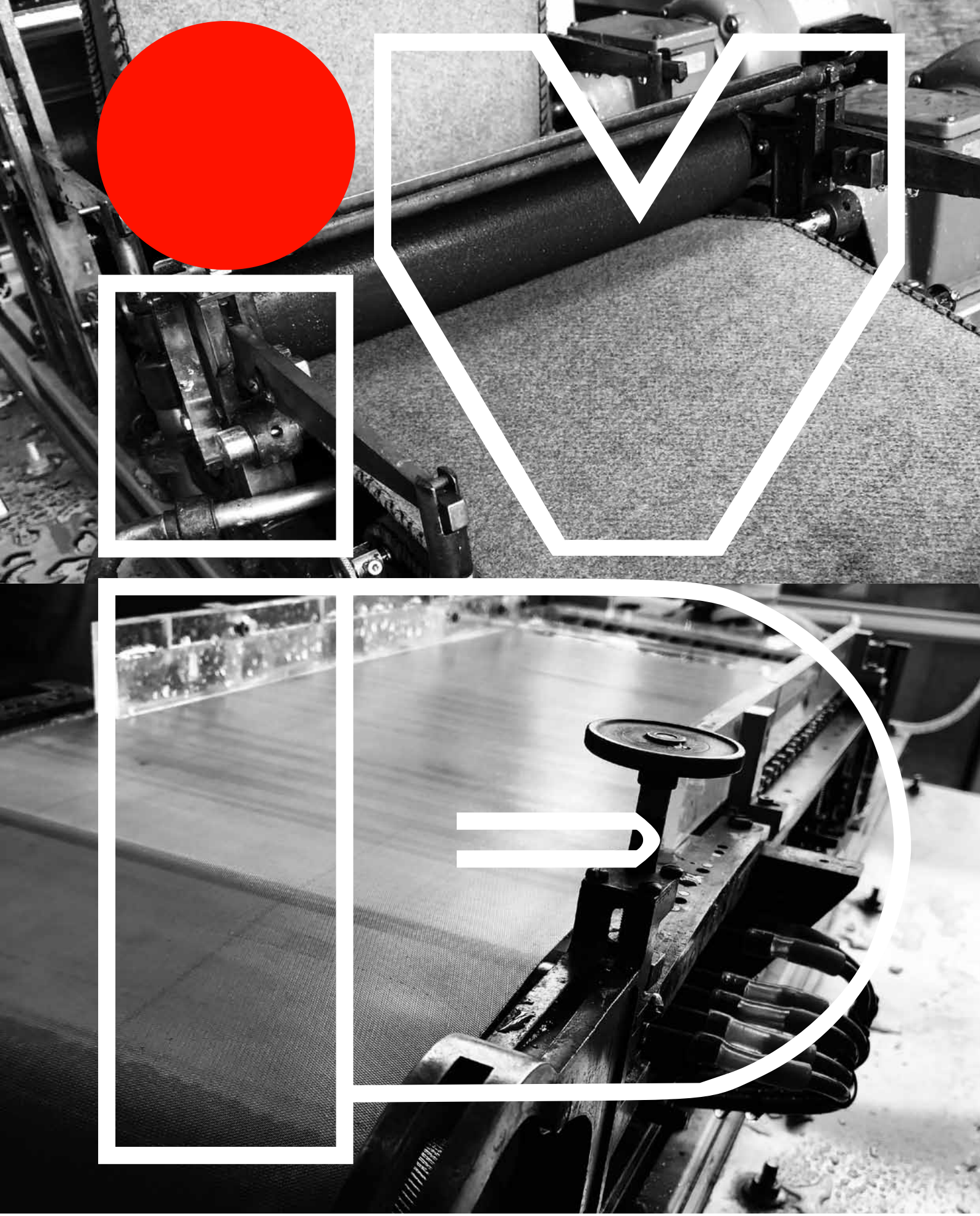
WE KNOW THE PRESSURE DOCTORS ARE UNDER !



» MEASURING THE REAL PRESSURE PROFILE OF DOCTOR SYSTEMS «



www.bladecheck.de



Institute of Paper Technology
Dachauer Straße 153, Rgb.
80335 Munich
Germany

www.ivp.org

KPNB

Komponenten + Partner Nicole Buschmeier

Matchmaking specialist suppliers with manufacturers for sustainable process improvement.

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For 45 years – Your partner for all QCS needs

TASOWHEEL

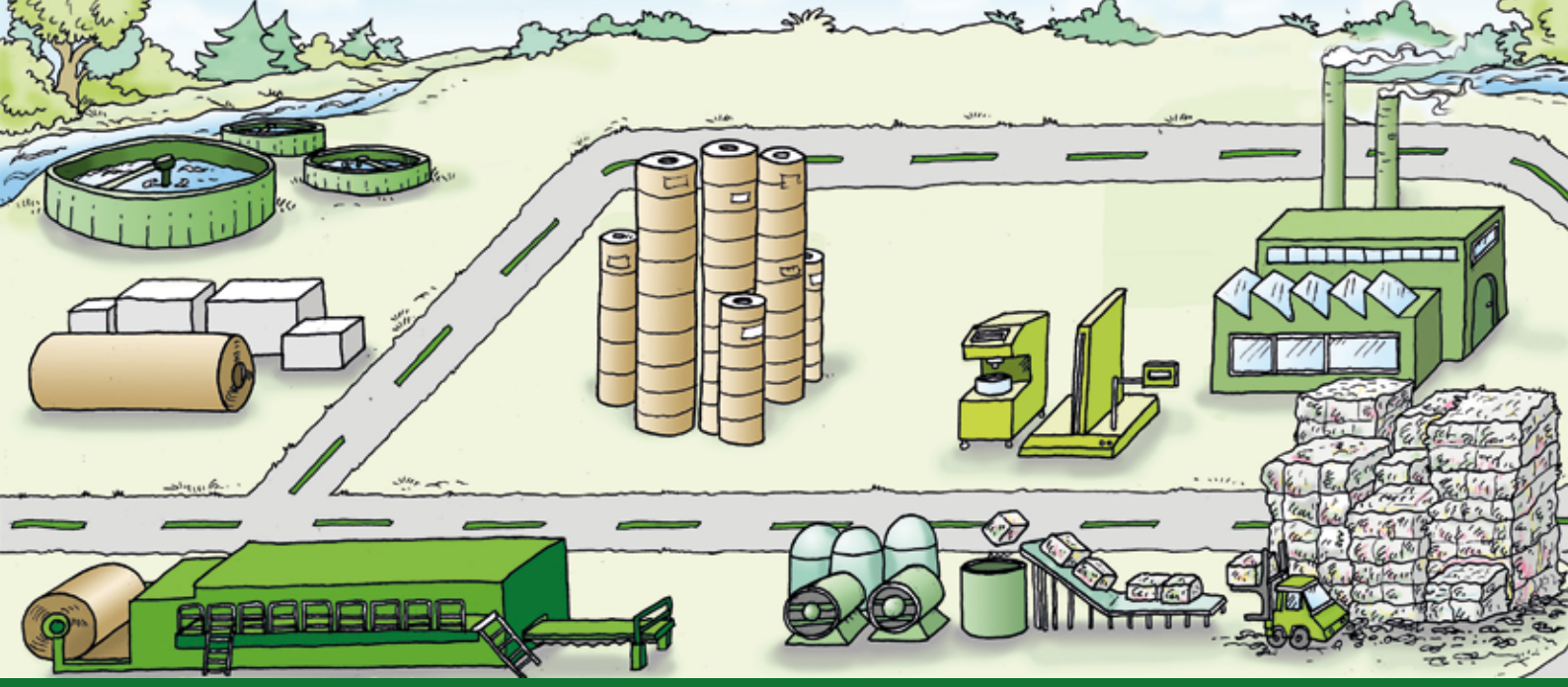
Tasowheel is the original manufacturer of complete Quality Control Systems.
We deliver complete turnkey QCS projects for paper and converting.

- High performance profiling systems
- Advanced CD & MD controls
- First class measurements and sensors

Increased production performance

Raw materials & energy savings

Optimized paper uniformity and quality



Matchmaking specialist suppliers with manufacturers for sustainable process improvement. The KPNB-Network is large and diverse, we have specialists and market leaders in the industry from most vital areas. Contact us for your challenges. *Nicole Buschmeier KPNB*

Resource Efficiency for Your Paper Mill!

Vinsen®
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A new approach to recycling and resource recovery

- innovative
- safe
- flexible
- powerful
- durable
- user-friendly
- robust

Your solution is the KPNB-Net-Work!

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a brighter picture of your process

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- Pixact Stock Monitoring
- Pixact Particle Monitoring
- Pixact Bubble Monitoring

Enhancing innovation · Maximizing efficiency · Increasing safety · Promoting sustainability

Maintech
since 1967

maintech-papertech.com/de

Inventor of surface passivation in the drying section

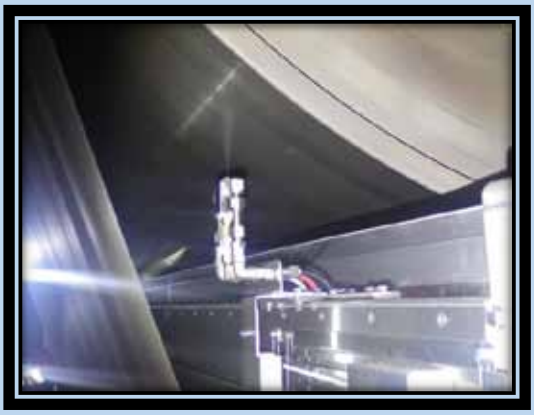
Your advantage in the areas of

- Productivity
- Energy efficiency
- Quality • Water treatment
- Maintenance

Inventor of Passivation

Dryer Section Passivation (DSP) Technology

Maintech was founded in 1967 and provides solutions for passivation in the dry part of paper machines worldwide—with the goal of sustainable paper production. As a pioneer in this field, Maintech has already installed more than 1,000 passivation systems worldwide.

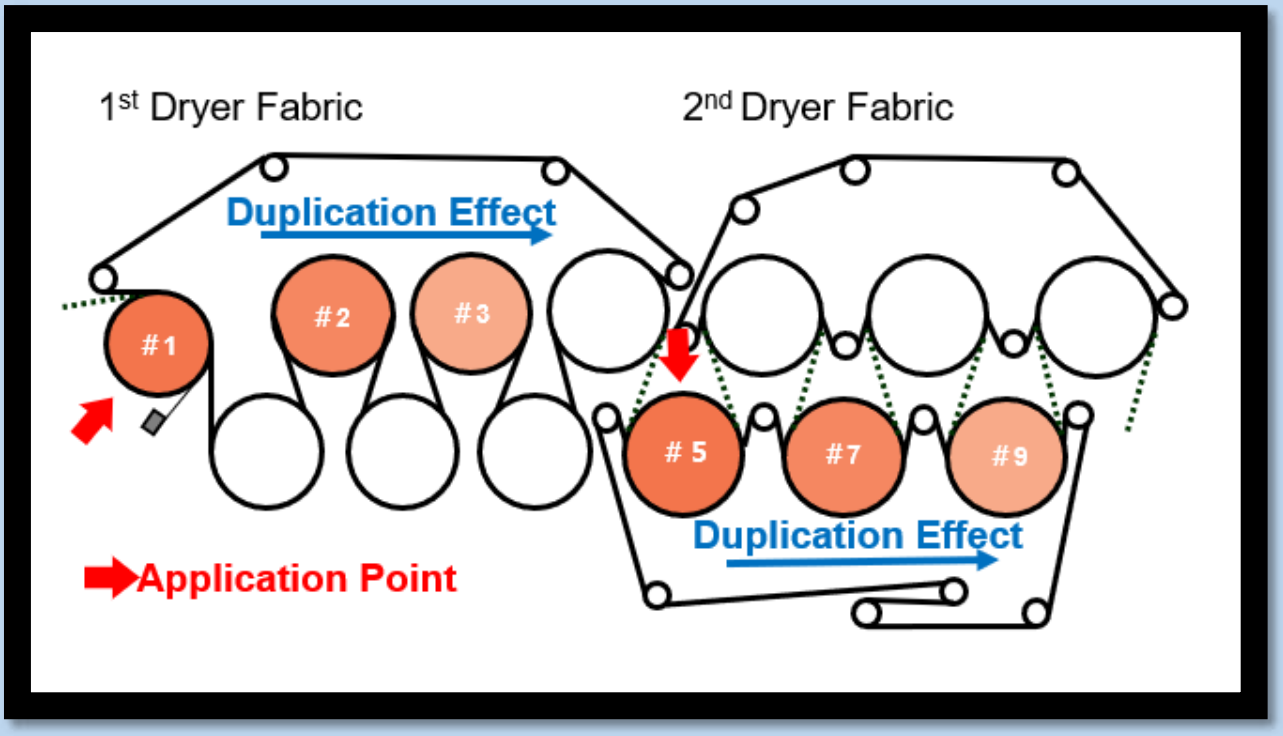


Patented Spray Nozzle

With the patented contactless spray nozzle in traversing motion, the chemical is applied to the surface of the dryer cylinders or dryer fabrics to passivate it and prevent deposits. Feel free to ask us about:

"Maintech's patented Air Curtain technology."

Duplication Effect



Have you ever wondered if you are using too much chemicals for sticky control unnecessarily? Conventional methods passivate three drying cylinders (#1D, #2D, #3D) in a row. With our duplication effect, not all three need to be passivated—the first cylinder does all the work!

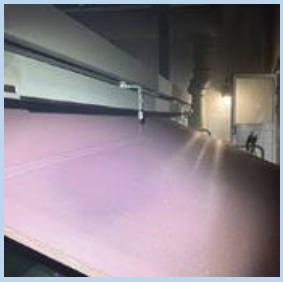
Maintech Europe GmbH
Theodorstr. 297 TH5 40472, Düsseldorf
Tel: +49-211-98927721 email: maintech@maintech-de.com

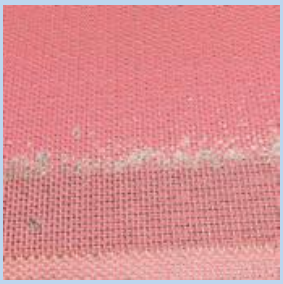
Dryer Cylinder

Dryer Fabric

European Presence

Maintech Europe GmbH is represented with an office and warehouse in Düsseldorf. In recent years, Maintech has successfully completed over 63 installations in the EU, helping customers make their production processes more efficient.





Installation and Results at DS Smith Zarnesti

In 2022, Maintech installed three spray units on the paper machine. This led to a significant reduction in contamination on cylinders and fabrics. As a result, the previously recurring costs decreased considerably.

Specifically, the installation of the MistRunner systems improved the surface condition of the cylinders and fabrics, optimizing machine runnability and enabling a trouble-free production process. Additional benefits included fewer web breaks, reduced adhesive marks, and noticeable steam savings

An additional advantage was the drastic reduction in cleaning effort for wires and doctor blades during machine operation—almost to zero. The customer remains satisfied to this day with the reliable customer service that keeps the system in perfect condition.

Maintech Europe GmbH
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Tel: +49-211-98927721 email: maintech@maintech-de.com

NCR BIOCHEMICAL

Chemistry
Enriching
Lives

Where innovation meets service for a sustainable future

We are specialized in **Pulp & Paper process additives, Water treatment, Biotechnology and the Sugar industry**.
For over 25 years, we have been providing innovative chemical solutions to improve efficiency and production quality.

- **Reducing environmental impact** while maintaining high standards of quality and performance.
- Rely on our **customized solutions** to optimize productivity, reduce costs and ensure safety in industrial processes.

Discover VersiCrepe®
A revolution in tissue paper creping

The VersiCrepe® program **enhances the creping process, increasing operational versatility and optimizing paper softness without sacrificing strength**.
This advanced technology, tested through rigorous laboratory analysis and numerous global references, delivers excellent performance under various operational conditions, ensuring optimal and consistent results.

Treatments for the Pulp and Paper Industry

Yankee Coating
Biocides
Defoamers
Wire & Felt Conditioning
Enzymatic Solutions
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Water

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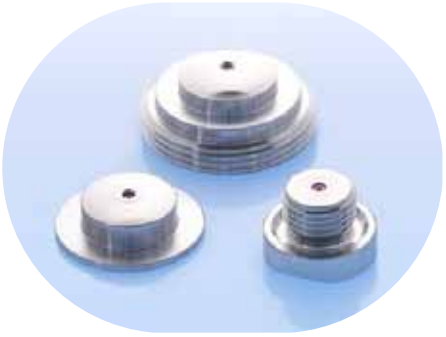
TECHNISCHE EDELSTEINE

PRECISION IN PERFECTION

WATER JET TECHNOLOGY REDEFINED



Our philosophy

INNOVATION IN EVERY BEAM

Innovation in the heart of the countryside. OSKAR MOSER has a long tradition of maximum precision. A fully coherent water jet - that is the trademark of the top quality nozzles from OSKAR MOSER. They ensure a smooth production on paper, cardboard, tissue and paperboard machines and reliably clean wet sieves as well as press felts.
Our nozzles guarantee process reliability.

Our three pillars of success are long service lives, high production speeds and low operating costs thanks to sustainable nozzle technology.

+49 7682 92 570 0
info@oskar-moser.de
www.oskar-moser.de
Oskar Moser Technische Edelsteine GmbH
Freiburgerstraße 64
79215 Elzach

visit us at

www.oskar-moser.de

Service

- Modular development
- Process development
- OEM production
- Cleaning service
- Maintenance and repair
- Technical documentation

Sustainability

An important topic for us is the further development of more environmentally friendly solutions.

- Long lifetimes guaranteed by premium quality
- Protection cover for perfect protection
- Sustainable, modular design
- Constant coherent water jet
- Many services available
- For optimal process reliability

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info@oskar-moser.de

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Oskar Moser Technische Edelsteine GmbH
Freiburgerstraße 64
79215 Elzach

PTS – Institut für
Fasern & Papier gGmbH

FIBRE based solutions

Fibre-based solutions for tomorrow's products.

Fibres & Composites

- Pulp analysis and raw material selection
- Bio-based paper additives
- High-performance materials produced by paper technology
- Chemical modification of fibre materials

Smart & Circular Solutions

- Cirularity of fibre based products
- Recoverd Paper Management
- Optimizing stock preparation processes
- Quality management of fibre stock and end product
- Innovative measurement: PaperBaleSensor (PBS), DOMAS, RCP Monitor

Material Testing & Analytics

- Accredited laboratory according to DIN EN ISO/IEC 17025:2005
- Testing of physical and chemical properties
- Packaging coding, printability & processing
- Evaluation of food conformity
- Assessment of the recyclability of fibre based materials
- Methods for simulation and modelling
- Document Security, CEPI Round robin tests, Test equipment service

Pilot plants

Paper, wet laid fibre, coating

- Pilot paper machine with stock preparation
- Wetlaid technology with spunlace bonding
- Trial coater and curtain coater
- Reactive extrusion of fibre materials

Functional Surfaces

- Surface analytics
- Development, optimisation and application of functional coatings (development of barriers)
- Functional application of bio-based materials
- Classification of coating colours

Events & Further Education

- Events on current topics from the research areas
- Combining know-how from companies, science and associations
- Formats: Symposia and conferences, workshops & seminars, online and Onsite

PTS – Institut für
Fasern & Papier gGmbH
Pirnaer Straße 37
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FIBRE based solutions

The device for upcoming ISO 15360 – 3

Macrosticky determination according to DIN-Spec 6745

Determination of sticky and non-sticky macroscopic particles in paper with NIR camera technology

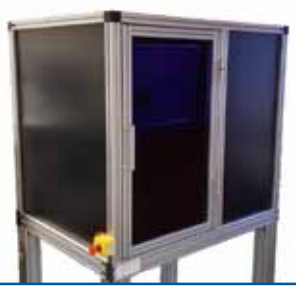
The new NIR imaging measurement method enables the determination of macrostickies, but also of nonadhesive polymers without a separation step directly in laboratory sheets of fabric samples or in finished paper. The objects are determined by number, size and area. In addition, it is possible to classify the detected impurities according to their chemical composition.

Advantages over previous determination methods:

- Direct measurement in the dry paper sheet without sample preparation
- No fiber sorting and staining required
- Significant savings in time and personnel and therefore thus cost reduction. The only effort required sampling and, if necessary, making laboratory sheets for stock suspensions
- NIR classification module enables differentiation between adhesive and non-adhesive as well as the identification of all other substance classes of polymeric impurity particles

Technical details:

The measuring system DOMAS Macrosticky is a complete system, consisting of a NIR measuring station, a PC and a measuring and operating software. The components are compactly enclosed in a 1 x 1 x 0.8 m structure. The core component, an NIR line scan camera, has a resolution of 120 x 120 µm per pixel, which is equivalent to over 200 dpi.

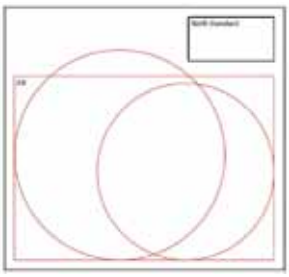


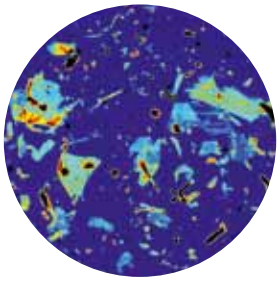
Measurement procedure:

The sample table contains a complete DIN A4 sheet of paper, but also a typical RK sheet and larger groove sheets. After closing the cover, the fully automatic measurement begins. No pre-setting has to be made. The measurement itself takes up to 5 minutes, depending on the size of sample and ends with a visualization, quantification and classification of the polymeric objects.

Evaluation:

The NIR raw data are assigned to the individual chemical components within a decision tree, combined into objects and statistically processed.





www.ptspaper.com

Contact person

Jörg Hempel
P +49 3529 551 659
E joerg.hempel@ptspaper.de

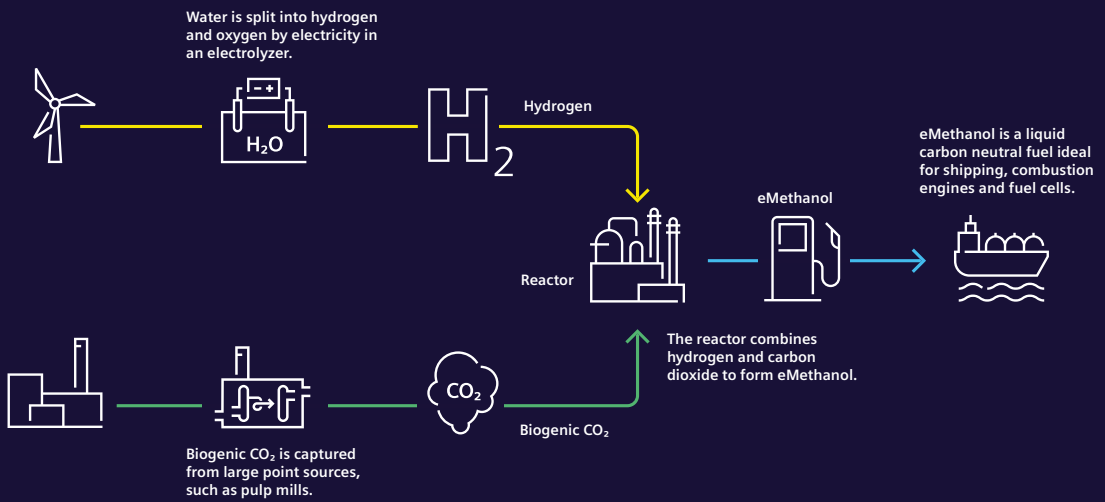
SIEMENS energy

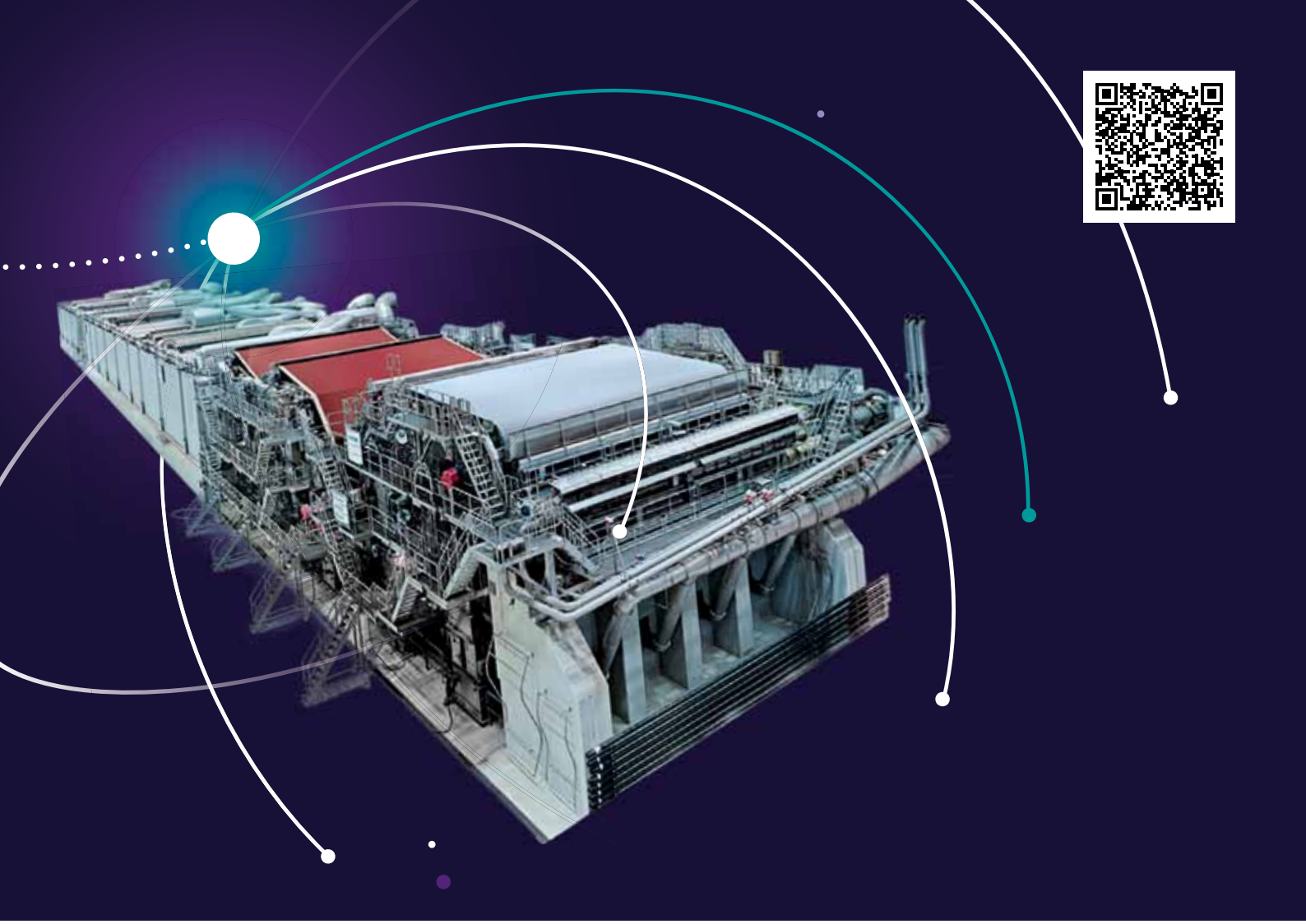
The Pulp and Paper industry of tomorrow

With the industry trends towards new bio based products and fuels within the pulp and paper sector, the process to produce pulp and paper is gaining a lift to higher yield and value. Besides new fiber production for other industries, e-fuel is coming more into focus.

The pulp mill production process represents a perfect application to combine renewable energy and a bio based carbon dioxide source to produce e-fuel for shipping and transportation.

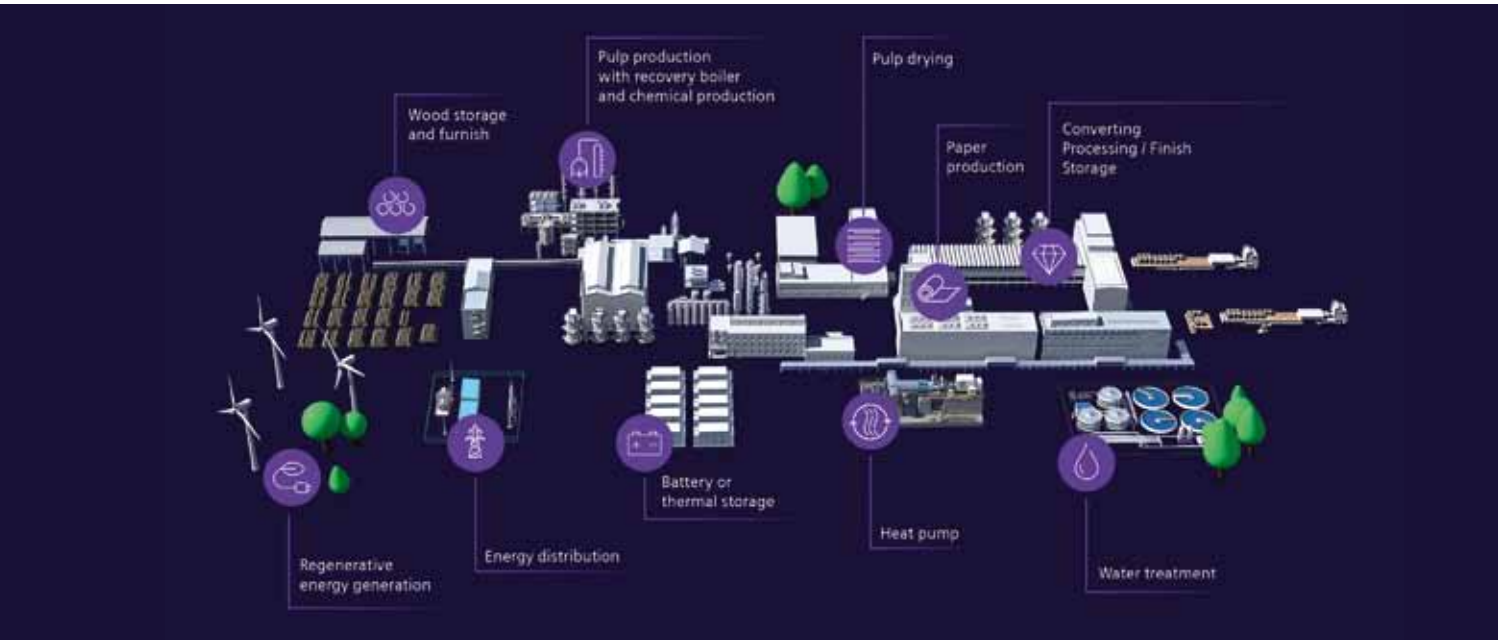
Producing carbon neutral fuel Upcycling bio based CO_2 into carbon neutral eMethanol





Decarbonization is the force to push the shift to more sustainable energy efficiency.

The pulp and paper industry is undergoing transformative changes, driven by the growing emphasis on sustainable practices and the development of new bio-based products and fuels. As the sector moves towards higher yield and value, innovative processes and technologies such as e-fuels, and particularly e-methanol, are gaining traction as a viable alternative to conventional fuels. The pulp mill production process, with its combination of renewable energy and bio-based carbon dioxide sources, is ideally suited for the production of e-methanol. E-methanol serves as a sustainable fuel for shipping and transportation, offering advantages in terms of easier storage and transport, compared to other renewable energy sources.



siemens-energy.com

techpap
innovation for pulp & paper

SIMPASCAN
Dirt analyser for large size samples

DIRT LABORATORY ANALYSER FOR LARGE SIZED PAPER SAMPLES AND PULP SHEETS

> Quick analysis of dirt in pulp and paper large sheets.

> Accurate dirt counting on :
- paper sheet by reflected light
- pulp sheet by transmitted & reflected light

> Powerful led illumination system

> Performs digital scan of individual pulp or paper sheets either by reflected light or by transmission according to ISO standards

> Detects any contrasting impurities such as shives, metal, plastic, grease, sand, etc

> Sorts detected impurities as black dots, gray dots and shives according to its color and shape

> Calibration of the measuring system according to the EFPG standard (CEN/TC 172)

USER FRIENDLY SOFTWARE

> Runs on standard controlling PC with Windows OS

> Measurement window
- Individual investigation of each detected dot
- Configurable results table displays results for last test and average of tests done

> Configuration window
- 11 configurable classes for size and contrast
- Different configuration settings may be saved (e.g. ISO 5350, TAPPI T213, T437, T563 for simple change of measuring reference standard)

RELIABLE AND POWERFUL

> High resolution linear camera with 12.288 pixels

> Adjustable according to sheet dimensions, up to 83cm width and no limit for sheet length

> Resolution, pixel size 67µm for max. width (83 cm)

> Analysis time < 1 minute for a 80 x 80 cm sheet

> Repeatable and reproducible

Fully automated sheet scanning

MORFI NEO HR
High resolution module

HARDWARE EXTENSION TO MORFI NEO

> Mounted on backside as a separate module

> Fully controlled by MorFi Software

> High resolution camera:
- Resolution down to 0,5 µm
- Adjustable cell gap

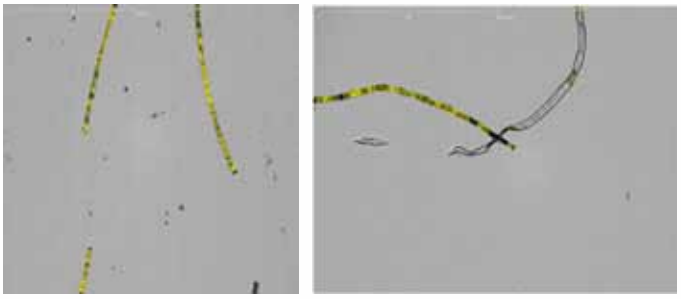
> MorFi HR Software can be used separately or incorporated into MorFi Neo interface

APPLICATIONS

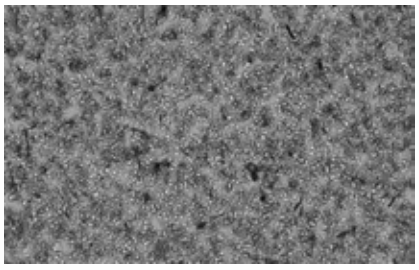
> Fiber wall thickness true optical measurement:
- Typically ranging from 3 to 9µm according to the several different wood types used wolrdwide for pulp production
- Wall thickness values are integrated among the standard fiber morpholgy results to MorFi Neo

> Hydroseg Index : exclusive CTP* index to determine the fractionality of fiber by Hydrocyclone.

> MFC behaviour:
- Determination of floculation index for example



Wall Thickness images by MorFi HR



MFC image by MorFi HR

ANALYSIS DURATION

> MorFi fiber cycle

MEASUREMENT PROPERTIES

> Wall Thickness distribution (10 classes)
> Wall Thickness Average and Standard deviation
> Width Average and Standard deviation
> Hydroseg Index

*CTP : Centre Technique du Papier

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CS 90251 - 38044 Grenoble cedex 9
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Wedge

Trimble

Optimize industrial operations

Wedge digests all the process data including QCS profiles, from multiple sources, for analysis and diagnosis. It uncovers and suggests possible root causes and consequences of process events before they escalate into big problems.

Wedge is the perfect tool for the pulp and paper industry with 30 years of high user satisfaction.

in use in over
20
countries, worldwide

used in more than
200
production lines

thousands
of users

Visualize process & quality data

Refine the data and compensate for process delays

Analyze your data

Diagnose dependencies and root causes

Learn more or contact us:

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Wedge

Trimble

The **benefits** of the Wedge process diagnostics system:

Increase process transparency.

Save costs by addressing issues rapidly.

Perform a week's data-analysis work in only 10 minutes.

Shift your mental resources from processing data to solving problems.

Enable data- and knowledge-sharing, and unlock collaboration with colleagues.

> Benefits of Wedge are seen in operational efficiencies, product quality and output but also in the employee experience."

Guy Lacey, Next Generation
Technology Director at DS Smith

Turn to Trimble

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matti.hakkinen@trimble.com

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supports you in producing paper, cardboard and tissue more efficiently, cost-effectively and with better quality.

Our partners and we have a high level of expertise and many years of experience – and focus on paper and pulp production and converting.

We provide solutions for

- Energy efficiency,
- Decarbonisation,
- Runnability, and
- Quality.

For challenges with

- Energy optimisation,
- Runnability and performance increase,
- Reject treatment,
- Drying and profiling,
- Deaereation, defoaming, and felt washing,
- Tinting,
- Fibre recovery,
- Process automation,
- Reject- and Sludge pelletising,
- Chatter marks and Creping, as well as
- Sticky treatment

we provide you with the optimal tools for problem solving.

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unsere partner

AQUATAN

Higher dry content after press
Reduction in steam consumption
Reduction of sheet breaks
Improved retention
Control of stickies
Circulation cleaning

automation X

Process automation
Machine automation
AI-optimized reduction of steam consumption
Integration of digital twin
Performance increase
Reduction of energy consumption

CF ProcSim GmbH

Reduce steam consumption by up to 8%
Energy efficiency through digital twins
AI to increase performance
Soft sensors
Bivalent operation of paper drying

COMPACT ENGINEERING

eNIR dryer with double evaporation rate
Deep drying from the inside out
Barrier drying
Highest energy efficiency
cool to touch in 2 s

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Waste2Heat • Waste2Steam • Waste2Cool
Decarbonisation
Energy efficiency
Cooling
Heat pumps
Steam generation

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Filtration of suspended, floating and sinking solids in a single filter up to 25 µm
Fiber recovery
Super clear filtrate
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Police filter
Spiral filter

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Felt and wire cleaner
Enzymes
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OGUMA IRON WORKS co., inc.

Reject pelletizing
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Rejects to fuel
Sludge to building material
Ogumazer turns waste into valuable energy

ProJet B.V.

Professional high pressure water jet technology

High-pressure cleaner for forming fabric, press felt and dryer fabric
Wet end tail cutter
Dry end tail cutter
Edge trimming

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Drying hoods
High performance hoods
Air Turns
Cooling hoods
Heat exchangers

STEINER

Direct dyes
Liquid dyes
Brown dyes

WIPA

FIBER SEPARATION TECHNOLOGY

Fiber recovery
Reject treatment

PROPAKMA

Projekte • Papier • Karton
Management • Labor

PROPAKMA advises our customers on reject utilization, fiber recovery, water treatment and contaminants

Your Reliable Partner for In-Line Color Measurement and Closed Loop Color Control

The X-Rite In-Line systems are used worldwide for white paper (with and without OBA), colored paper (including deep shades), laminate paper (measurement in the pulp and before drying section), packaging paper and liner board. More than 800 In-Line installations in the paper industry prove the reliability of the systems and provide a good reference.

Sales, engineering, installation and service worldwide provided from one hand. Our turn-key solutions include:

- In-Line color measurement
- Automatic Closed Loop Color Control
- Connection to any process control system and other external signals like reel change or paper break
- Dye pump interface
- Dye pump stations in various configurations (Bran+Luebbe, Watson Marlow, Grundfos, ...) including vacuum pumps for initial filling of the dosing pumps
- Separate transport water lines (anionic/cationic)

The system is working as a standalone unit but can easily communicate with any process control system.

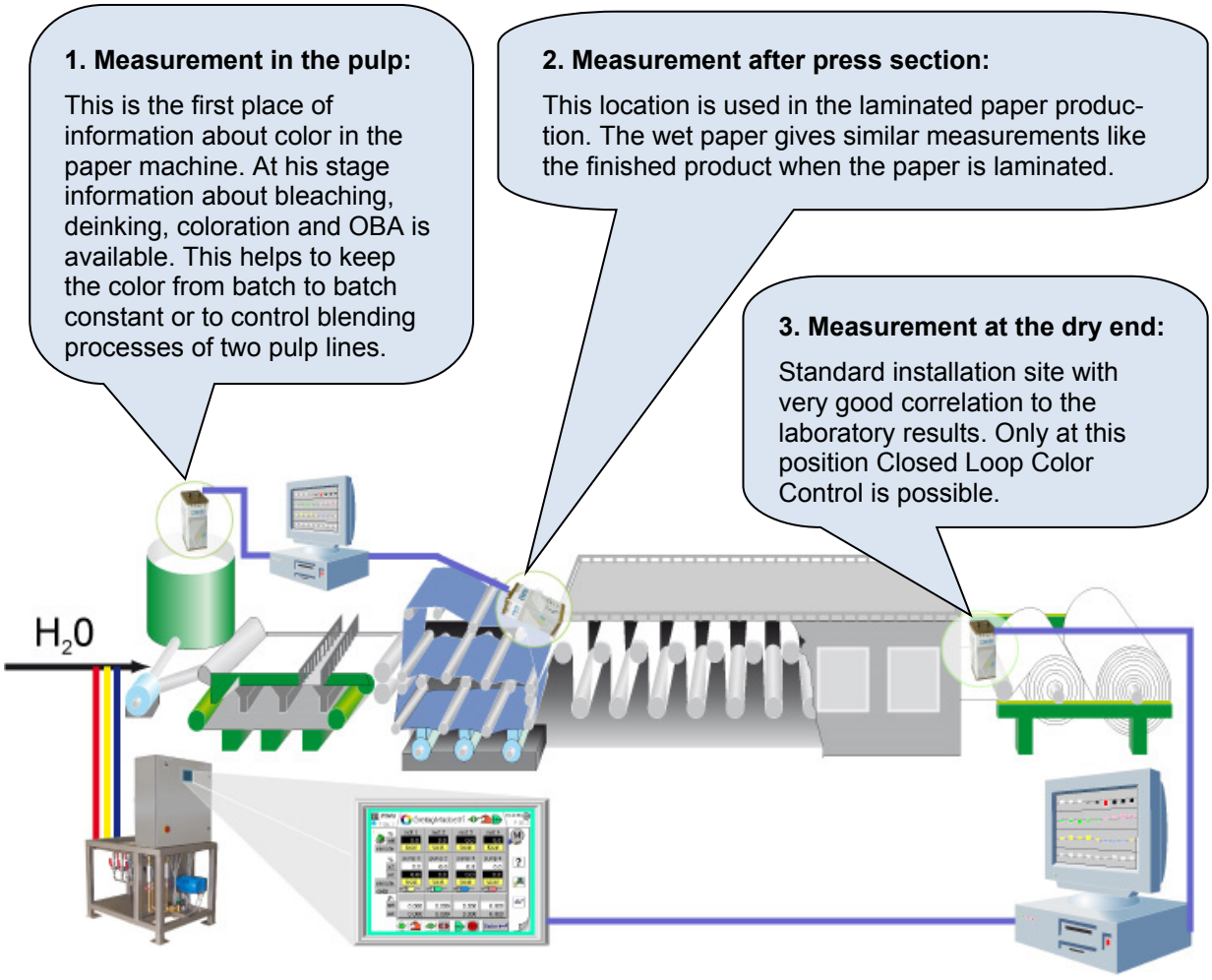
Short transition times are realised by the automatic Closed Loop Color Control. It also helps to reduce dye consumption and take the “guess work” out of the production by calculating the correct dye adjustment. The independent turnkey system is installed within 3 days, only two hours machine shut-down are necessary.
This guarantees a very fast return on investment (typically 3 to 6 months) and a very low cost of ownership.

X-Rite GmbH

Fraunhoferstr. 11b
D – 82152 Planegg

Telephone: +49/ 89 – 8 57 07 -0
Telefax: +49/ 89 – 8 57 07 -111
E-Mail: inline@xrite.com
Web: www.ERX50.com

Range of Application for In-Line Color Measurement in Paper Machines:



Closed Loop Color Control

- ✓ Control of up to 3 different colors and one optical brightener in automatic mode, more colors can be controlled manually
- ✓ Cost reduction by:
  - Shorter transition times
  - Minimum colorant loading by dying on the lighter limits
  - Less waste
- ✓ Better quality by more stable color of the paper
- ✓ Manual and automatic pump control possible
- ✓ Connection to your control system possible
- ✓ Turnkey systems

X-Rite GmbH

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