

# inside acat

■ Newspaper for customers, friends and employees



## TAILOR-MADE ACAT PRODUCTS

FlocStar® • FerriStar® • AluStar®

## ECOSORB®

Eliminates odors in Malta

## PERFECT PLANT TECHNOLOGY FOR

Jungbunzlauer Austria AG  
AWV Wiener Neustadt Süd  
WV Region Gratkorn



*Applied Chemicals International Group*  
*Technical Service is our Success*

## CONTENTS



*ACAT produces self-developed products: FlocStar®, FerriStar® and AluStar® are tailor-made products, which make individual customer wishes come true.*



*Fresh air again in Malta:  
Due to the ECOSORB® DOSING SYSTEM  
HPS there is no more disturbing odor at  
Malta Waste Water Plant.*



*New sludge dewatering units for the  
second largest wastewater treatment  
plant and the largest industrial waste-  
water treatment plant in Austria.*

## NEWS UND EVENTS

- 2** 50 years IFAT – a success story
- 4** ACAT in Amsterdam: ISSA InterClean, from 10 to 13 May
- 4** „Paper & Biorefinery“ – new name, proven event
- 5** Welcome to the 20th edition of Ecomondo from 8 to 11 November

## COVERSTORY

- 8** Tailor-made ACAT products: FlocStar®, FerriStar®, AluStar®  
Polymers carefully produced for customers

## TECHNICS

- 10** Purified by iron salts: Removal of phosphates with iron salts
- 12** Looking beyond borders
- 14** Freshness to feel good
- 16** Ecosorb® eliminates odours in Malta
- 19** WV Region Gratkorn - Gratwein 40,000 inhabitants
- 21** Jungbunzlauer Austria AG, 1,5 Mio inhabitants
- 23** AWW Wiener Neustadt Süd, 260,000 inhabitants
- 25** Environmentally friendly optimized logistics
- 26** Fire bowls made of geopolymer at the NDU St. Pölten
- 30** Perfect solutions: Optimally dissolved polymers

## COMPANY NEWS

- 32** Handball as a compensatory time off to professional activities
- 33** Anniversaries, newcomers and special occasions
- 37** Our product range

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Photo: Nestler-Kenzian

*Manfred Zabl*

Dear readers,

The 22nd issue of our company magazine primarily deals with environmental technology and with the largest event of this industry, IFAT 2016 which is taking place at the end of May in Munich. A few years ago it was decided to hold the fair every two years instead of every three years. The general opinion was that there would not be enough innovations within only 24 months and therefore visitors would fail to appear. But this was a fallacy! On the contrary, the number of visitors increased. Therefore, at the event a great number of suppliers and institutions are represented as exhibitors make use of the unique opportunity to come into contact with so many prospective clients.

Environmental technology is a central topic of our time and without a doubt, this is a key contributing factor to the success of this event. In the 1970s the first sewage treatment plants were built and today, forty years later, the installation and further development of treatment plants is more topical and important than ever before. There are technologies that are innovatively engineered, but in the area of environmental technology the treatment conditions change constantly. The influent conditions of a sewage treatment plant always change as effluents are quite different, emissions can vary significantly, applicable environmental laws change frequently – usually they become increasingly stricter. All relevant suppliers know these problems and they are constantly developing solutions. It often happens that there is a solution, but the problem has changed and the whole effort has been in vain, therefore, it is important not only to recognize and solve a problem, but also to estimate whether it is an enduring problem.

Decisions on this matter must be well-considered and the exchange of experience can certainly be very helpful. Besides the visit and the information on new technologies, IFAT is the ideal platform for the exchange of experiences with colleagues and suppliers. Where else can one establish such a broad basis for decision-making?

After IFAT the exchange of experience needs to be cultivated, because it is an essential key to success and to make the right decisions.

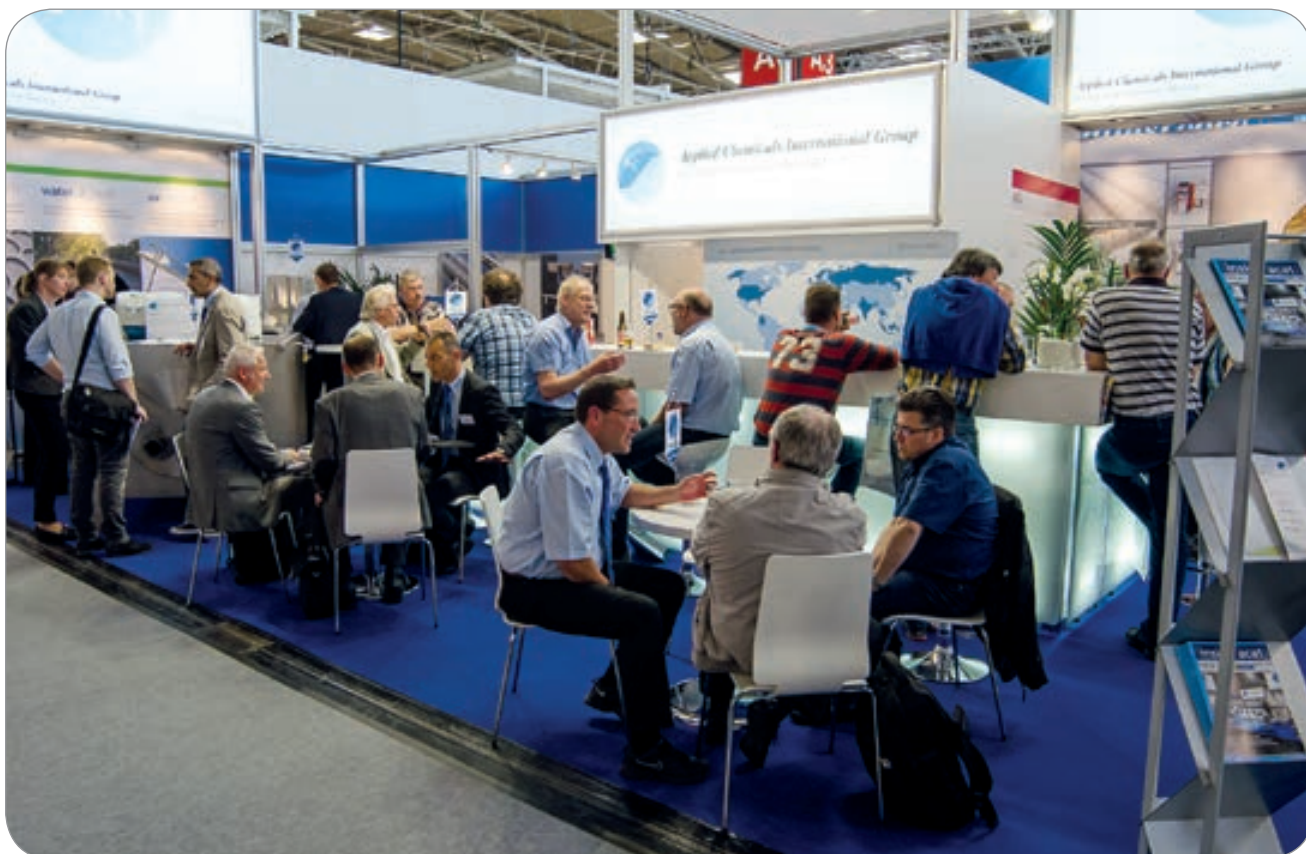
The ACAT Environmental Team and I are very much looking forward to seeing many of our readers at this year's IFAT. I wish all those, who do not come to the beautiful Bavarian Capital in late May, a great summer with many hours of sunshine!

Manfred Zabl  
CEO Applied Chemicals International Group



# 50 YEARS IFAT - A Success Story

The IFAT story is one of staggering success. It began in Munich and now encompasses the entire world. Within 50 years visitor numbers have increased from a starting figure of 7,000 to over 135,000 today. More than 3,000 exhibitors from across the globe cover the full range of professions in the water, sewage, waste and raw materials industry under the heading: resources, innovations, solutions.



May 30 – June 3, 2016 | MESSE MÜNCHEN

**Visit us in  
Hall A3, Booth 542**



Today, IFAT in Munich is the world's leading innovation platform for environmental technologies including events in China, India, Turkey, and South Africa. In 2016, IFAT will be celebrating 50 years of success.

## Exhibitor and visitor numbers on the rise

IFAT is becoming an increasingly popular platform for

presentations and innovation. International exhibitors in particular value the ideal market environment IFAT offers. Businesses from the water and waste water as well as from the recycling and municipal technologies sectors present their own pioneering and valuable solutions that enable the available resources to be used responsibly. Continuously rising visitor numbers and increasing international interest underline the enormous importance of IFAT as the World's Leading Trade Fair for Water, Sewage, Waste and Raw Materials Management.

## ACAT as exhibitor at IFAT

Also this year we are exhibiting at the fair and this time



*Our traditional table football tournament will take place on Tuesday, 31 May, starting from 6 pm*

we would like to spoil you with Carinthian specialties. As usual our traditional table football tournament will take place on Tuesday, 31 May, from 6pm at our booth No 542. According to the forthcoming UEFA European Championship in France the players will be cheered with dynamic music. Great prizes of various football teams and delicious finger food are waiting for you!! We look forward to an active participation!

The ACAT screw presses are the technical highlight at our booth!

We look forward to your visit at our booth No542, hall A3!

*Text: Susanne Durst*

*Also this time we would like to spoil you with culinary delights at our booth No 542....*





# ACAT in Amsterdam: ISSA INTERCLEAN, 10 - 13 MAY

„We bring hygiene professionals together to build sustainable relationships!“, is the slogan of ISSA InterClean – also this year ACAT will be represented at the event with FreshWave®IAQ.



The world's largest international trade show for the cleaning industry with more than 650 exhibitors from 130 countries links high-level representatives and decision makers from major international trade and cleaning companies. This year about 30,000 visitors are expected.

The products of the natural odour remover FreshWave®IAQ offer innovative solutions for the professional odour control in commercial and industrial areas and thus contributes to a comprehensive hygiene solution.

This year's exhibition focus is on "laundry". Our product "multi-use", is a laundry additive for the odour neutralisation in textiles and it is the perfect addition to cleaning processes. The „VPS mini system" is used for targeted and efficient indoor odor elimination. Since its introduction in 2015 it has become very popular in hotel and catering industry. It will be presented for the first time at ISSA 2016 in Amsterdam.

*Text: Lorenz Dycke*

## PAPER & BIOREFINERY-2016 New Name – proven event

A new name for a proven fair: Now APV is called „Paper & Biorefinery". It takes place from 11 to 12 May at Graz Messeplatz. The ACAT paper technology team will participate in the fair.

Also this year the Austrian ACAT paper team will be represented at the conference „Paper & Biorefinery" (formerly APV) in mid-May right in the heart of Graz. As usual, we will welcome our customers at our booth where we will be at their disposal for questions and discussions.

*Text: Roman Eichbauer*



# ECOMONDO EXIBITION 20<sup>th</sup> EDITION

## from 8<sup>th</sup> to 11<sup>th</sup> of November in Rimini

Photo: Ecomondo



From 8<sup>th</sup> to 11<sup>th</sup> November, the Rimini Fiera expo platform will increase the ability of its brands to cover all the lines indicated by the European regulations on environmental issues (water, energy, waste, etc.) from a business point of view. Following two drivers: circular economy and climate change. The new Monitoring & Control and Material Handling, Lifting Solutions & Logistics sections are arriving.

A great platform with two main lines and a single objective: guiding Italian enterprises towards the "green revolution". ECOMONDO and KEY ENERGY will raise the curtain on its twentieth edition, expanding the expo showcase under the banner of two key points: climate change and circular economy. To further strengthen a common identity with an increasingly high profile, this year the two expos will also have a single coordinated image, created by HOOP Communication. It is in fact based on the "green circular economy" ECOMONDO's new pay off, which highlights the mission

of the expos and the companies taking part in them: a setup that promotes the economic paradigm connected with regeneration, instead of the end-of-life concept, by means of the use of renewable energies. The aim is thus to eliminate the use of harmful toxic substances, therefore waste, which is in turn a possible resource. The organization mechanism of the huge Rimini event therefore takes off again from the great success achieved in 2015, when no less than 103,514 trade visitors attended (1.68% more than 2014). This figure also contains the planned rise of the foreign component, with almost 11,000 industry/trade mem-



Photo: Ecomondo

bers and 500 buyers from all over the world. Also worthy of mention were the numerous representatives from Iran and China, whose visits were organized along with the Ministry for the Environment. A machine that continues to produce new ideas: this edition will feature the outstanding new sections Material Handling, Lifting Solutions & Logistics and Monitoring & Control and a series of widespread experiences on the circular economy; plus, a focus on energy efficiency in industrial terms with White Evolution and applicative urban solutions in the Sustainable City area, which will be a sort of hub featuring tangible policies launched in the various contexts of efficiency, from energy to the building trade. The former will be dedicated to machinery and equipment for the handling and lifting of materials, organic and inorganic waste, goods and people (it is worth remembering that from the 2015 edition the sector dedicated to waste handling and lifting was unified with the sector dedicated to recycling in the construction world, resulting in Inertech, a unique vertical project

including the entire industrial chain: from the equipment for waste handling to components and recycling of C&D and roadworks material and their use). The second expo area on the other hand will address the monitoring of pollutants in the "Air and Watermatrices". This project was born from the need to exploit an indispensable component for all the activities that orbit round ECOMONDO, with the objective of becoming the key appointment for the Mediterranean Basin in this sector. The international component will also be greatly exploited. Thanks to a further expanded network of agents, Rimini will host highly selected qualified delegations of foreign buyers. Action is already under way in key countries, such as those in Africa, Middle East and the Balkans. Plus Iran, China, Russia, USA and Brazil. To spread Italy's evolved know-how, a world leader in this sector, road shows will be organized in Turkey, Bulgaria, Croatia, Macedonia, Slovenia, Russia, the Arab Emirates, Mexico and Romania, and are currently being scheduled.



We don't mask odors; we eliminate odors!

ECOSORB® is not like the commonly used fragrances others use to hide industrial odors. Much of the time, these masking fragrances don't work to control odors. And if they do, it's a short-term solution at best. Once the fragrance wears away, the malodor returns. What's worse, despite the pleasant names, most masking fragrances are anything but natural. ECOSORB® products are just the opposite. They don't mask industrial odors. They react on a molecular level to neutralize them. ECOSORB® is fast and effective; the fundamental mechanisms involved are adsorption, absorption, gas solubility and reaction. When diluted with water and broadcast via atomization, the tiny water droplets created contain a thin oil skin that creates an electrostatic charge. This charge facilitates adsorption of the malodor molecules onto the droplet surface. The gas is absorbed by the droplet (solubility) and held.

ACAT offers an industrial odor management solution that's safe



**Italy - Rimini Fiera, Expo Centre**

for you, your process and the environment. ECOSORB® odor eliminator is biodegradable and can be applied through a number of delivery systems, including atomization, vaporization, encapsulation or infusion into end products to solve the odor issues of every industrial and municipal site.

*Text: Claudio Boscolo*

**SEEPEX.**  
ALL THINGS FLOW

Besuchen Sie uns in München  
vom 30.05. – 03.06.16

**IFAT 2016**  
Halle A6, Stand 315/414

## DIE NEUE SMART CONVEYING TECHNOLOGY



SEEPEX ist ein weltweit führender Spezialist im Bereich innovativer Pumpentechnologie mit Exzenterschneckenpumpen, Maceratoren und Steuerungssystemen. Unsere Smart Conveying Technology (SCT) steht für die intelligente Spitzentechnologie unserer Exzenterschneckenpumpen.

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- Produktivität und Effizienz: deutlich erhöht
- Energiebedarf: deutlich reduziert
- Lebenszykluskosten: erheblich gesenkt

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# TAILOR-MADE ACAT PRODUCTS

• FlocStar® • FerriStar® • AluStar®

## Polymers carefully produced for customers

For almost 30 years our products for water / wastewater treatment were third-party productions. We have now decided to promote the development of products ourselves and produce them in-house. Therefore we took over Ferrecirk, a Hungarian production plant for iron and aluminum products. It can produce up to 15.000 tons a year of iron and aluminum-containing flocculants and precipitants. But our main interest is on the development and production of innovative iron salts for the coagulation and precipitation of phosphate.



**AUTHOR:**

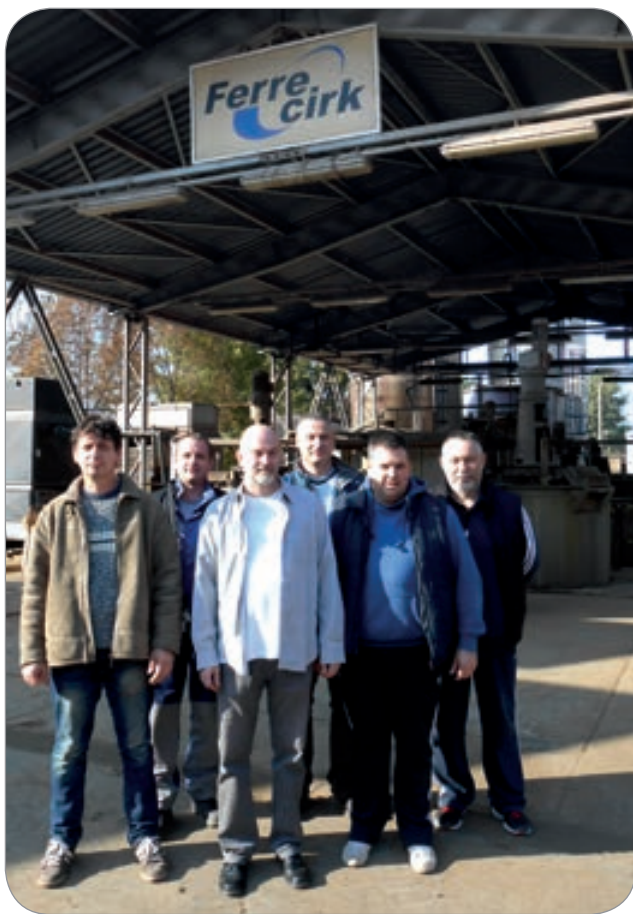
**ERICH SAILER**

For almost 30 years our products for water / wastewater treatment were third-party productions. During this time, we could contribute a lot of experience to the research and development of products. Producers applied our experiences in the further development of new products or in the improvement of existing prod-

ucts. Therefore, the ACAT team has always been a leader concerning the quality of recommended products and the introduction of new products.

In recent years, the ownership structure of many producers has changed several times. Savings and the profits of the shareholders were more important than the development of products, therefore, it was unavoidable for ACAT to push forward developments itself and to produce the newly developed products in our own production plants or using contract production. For this purpose we decided to take over a production plant for iron and aluminum products in Hungary, called Fer-





recirk. It is located in Dunaujvaros, about one hour's drive south of Budapest, and it is able to produce up to 15.000 tons a year of iron and aluminum-containing flocculants and precipitants.

Due to our dominating market presence in municipal wastewater treatment, of course, our main interest is on the development and production of innovative iron salts for the coagulation and precipitation of phosphate.

One of our most important raw materials is ferrous sulfate. As this raw material does not come from the metal processing industry, a very low heavy metal content is guaranteed. We only use the purest oxidation products, so we can produce ferric sulfate in the highest quality. The concentration of heavy metals is significantly lower than in all other commercially available iron-precipitating agents.

#### **Our ferric sulphate complies with the ÖNORM EN 890.**

From the 4th quarter of 2016, additional up to 20.000t ferrous chloride a year will be available as a raw material and as a precipitant. This opens up the possibility to produce iron III chloride also. A corresponding project is in the planning stage.

In addition, we will also produce a highly developed PAC. As it is not an ADR product, no hazardous materials transportation is needed. Unlike many competing products, the supplied product has a PH value of 4, which competitors achieve only with high dilution.

Our production process allows significantly higher degrees of purity and concentrations without durability loss. Each PAC user knows the problem: some PAC products precipitate within six months forming a yellowish white, difficult to remove precipitation in the storage containers.

Certainly, this will not happen with our PAC and because we will use especially pure raw materials our top products can be used also for the purification of drinking and bath water. We are able to develop in cooperation with our customers high quality tailor-made products, if required.

Our motivated ACAT team produces customized, best quality products used together with our high standard application technology! ●



# PURIFIED BY IRON SALTS:

## Removal of phosphates with iron salts

Phosphorus is found in almost all food and consumer goods. Everyone excretes per day about 15 grams of phosphorus and industrial wastewater often contain phosphates. Thankfully, nowadays many detergents are free of phosphate. Nevertheless the raw water of municipal wastewater treatment plants still contains 5-20 mg phosphate/l.

Photo: Hasan Anac/pixelio.de



### AUTHOR

### ERICH SAILER

In recent years, in Central Europe processes have been improved, new waste water treatment plants have been constructed or expanded to reduce the discharge of phosphates into waters. As inorganic nutrients increase the algae growth rate various phosphorus and nitrogen compounds were reduced.

The eutrophication (nutrient enrichment) in lakes and rivers and the resulting self-production of organic substances (Autrophie) is still a major international chal-



lenge. The phosphorus reduction achieved in conventional biological treatment systems, is far from being enough to prevent the growth of organic substances.

In the mechanical purification stage, up to 30 percent of the discharged phosphorus can be separated. These are essentially compounds bound to suspended particles. After sludge treatment a large part of the phosphorus is returned to the purification process with the turbid water.

During biological treatment phosphorus is needed for the new formation of microorganisms. The formed biologically sludge contains approximately two percent phosphorus (per 100 g BOD5 1 g of phosphorus is needed). In sludge stabilization part of the phosphorus amount is returned. In a conventional biological treatment plant a maximum of 20-30 percent of the total amount of phosphorus can be separated.

The largest elimination of phosphorus can be achieved by both chemical and biological processes. In Scandinavia, Central Europe and around the Great Lakes in North America phosphorus is reduced mainly by adding chemicals (= precipitation). In recent years, the biological phosphorus elimination is increasingly also used in Europe.

#### Chemical removal of phosphorus

In the chemical elimination (= precipitation) of phosphorus the dissolved organic phosphorus compounds are converted with metal salt solutions into soluble metal phosphate. As a considerable part of the suspended solids is flocculated by the metal salts also the organically bound phosphorus is removed by chemical precipitation.

#### Precipitants / flocculants

- *Iron salts are still the most cost-effective precipitants and flocculants*

The dissolved inorganic phosphates form with precipitants and flocculants, soluble compounds, which can be easily separated. Simultaneously metal hydroxides are formed in the form of gelatinous flakes binding the precipitated metal phosphates and nearly all the other suspended substances (co-precipitation). The treated water becomes visibly clearer – visibility depth improves. These reactions depend on the pH value. They run optimally in the neutral range (pH = 7).

Only orthophosphate can be precipitated. But waste water contains ortho-, meta- and polyphosphates as well as organically bound phosphates. In the municipal sewage treatment plant processes a large part of this "total phosphate" is transformed into the precipitable orthophosphate.

The following chemical formula describes in a simplified form the chemical reaction with the conventional pH values in municipal sewage treatment plants:



If ferrous salts are used, the following formula is applicable:



The bivalent iron is oxidized before the reaction takes place. ●

#### Specific Precipitant Demand FM B (β = 1) ACAT Ferrous Precipitants

Produktname	Formel	Lieferform		Wirksubstanz		FMB [kg/kg PF]	Dichte [kg/l]	FMB [l/kg PF]
		Lösung [%]	fest	Fe [g/kg]	Al [g/kg]			
Eisen II Chlorid	FeCl <sub>2</sub>	20	-	89	-	20,2	1,30	15,6
Eisen-(II)- sulfat	FeSO <sub>4</sub> ·7H <sub>2</sub> O	-	+	190	-	9,5		
Eisen-(III)- sulfat	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	41	-	120	-	15	1,56	9,6
Alustar Cl	Al+Fe(III)Cl	+	-	11	19	36,0	1,14	31,6

# LOOKING BEYOND BORDERS: The ACAT paper team is everywhere

For years our Austrian paper technology team, with headquarters in Vienna, has been very active in Austria, and well represented in all paper and pulp mills. The staff members are well distributed over the country, so they can carry out the service for our customers quickly and effectively.



**AUTHOR:** **ROMAN EICHBAUER**

Due to organizational changes in the past year, our team now also operates in Central and Eastern Europe, mainly in our neighboring countries: Switzerland, Germany (Bavaria), Slovenia, Hungary, Slovakia and the Czech Republic.

We have taken over a colleague from Germany to

the Austria team. He lives in the Tyrol and he will be responsible for Switzerland and Bavaria.

In May we will strengthen our team with another master of papermaking. His experience and motivation will help us to expand our activities and to focus our activities on neighboring markets.

In particular we want to convince our Bavarian neighbor of our products and our know-how in order to grow further in this currently difficult market. Therefore it is necessary to continue to strengthening our human resources to achieve further growth.

We are very well aware that nowadays classic standard products are exchangeable at any time, therefore,





Robert Meissl



Reinhold Frech



Sepp Fallnhauser



Jasmin Thalmann



Roman Eichbauer



Susanne Durst



Ronny Schulz



Franz Bucher



Michael Fuchs

The colleagues of our paper teams are spread across the country. Therefore they can carry out the important and valued service for our customers quickly and effectively.

we focus on optimal customer support, on specially designed and customized products and on optimal service - available around the clock. Our team is well distributed over the county, so each customer can be reached within two to three hours by one of our colleagues.

ACAT is family structured, which is very important to

our owner Dr. Staffan O. Björn. We maintain mutual appreciation and recognition with our customers as well as between our colleagues.

With our extensive product portfolio for the paper and pulp industry and our strong, steadily growing team we feel ready and we are highly motivated to take steps beyond our borders and to expand our scope. We look forward to the new challenges!

# FRESHNESS TO FEEL GOOD!

## FreshWave®IAQ for hotels and catering

FreshWave®IAQ eliminates odours quickly and effectively forever. It is pH neutral, acts on a molecular level and leaves a pleasant and subtle odour. Your guest will feel at home and they will be happy to return.



**AUTHOR:**

**ALDO RANDISI**

A bad-smelling hotel room, a stuffy lounge or restaurant ensure dissatisfaction! This in turn leads to negative valuations on various Internet platforms and the guests fail to appear. The room was thoroughly cleaned - but after a short time the bad smell is back. But it need not be like this! FreshWave®IAQ eliminates odours quickly and effectively forever. It is pH neutral, acts on a molecular level and leaves a pleasant and subtle odour. Your guest will feel at home and they will be happy to return.

### Odour problems?

Although in most hotel rooms smoking is prohibited, very often odour nuisance arise caused by smoke or

by food leftovers. Consequently, the hotel rooms need to be cleaned with great effort. Usually they are not immediately available resulting in loss of revenue.

### We have the solution!

The cleaning staff do not have much time for room cleaning between checking in and out of guests. Nevertheless cleanliness is expected at a high level. FreshWave®IAQ is very useful, because it eliminates bad odours immediately and effectively. The VPS mini (Vapour Phase System) machine is particularly effective. The system was developed for the application of the natural odour remover FreshWave®IAQ. It is a dry dispersion system spraying tiny dry vapour particles. The dry vapour penetrates deeply into materials and removes all kinds of bad odours - on all surfaces, in the air and in textiles. The application is safe and harmless and can even be carried out in the presence of humans and animals. Conventional ozone generators used in many hotels, are not able to keep up neither with regard to time nor to human health. In principle malodours should not be eliminated by ozone-generating air purifiers (Ozone generator). New scientific findings indi-

cate that, for example, ozone forms with nicotine and other components of the cigarette smoke respirable dust aerosols, which may penetrate into the respiratory tract.

Finally, it should be considered that the half-life of ozone is between 20 and 100 hours. Therefore complaints regarding the perception of unpleasant metallic odour are almost inevitable. Ozone is an irritant gas and should not be used for odour removal.

The VPS mini system is the best alternative to conventional ozone devices. It is time-saving and cost-effective, because your guests can move to their room immediately after cleaning and they are welcomed by the scent of a pleasant and discreet smell.

### Your benefit:

Rooms are only completely clean when also bad odours are eliminated. FreshWave®IAQ contributes significantly to the perfect cleaning by removing any kind of bad odors effectively ensuring that your guests feel at home, that they stay longer and that they become repeat customers. ●



Technical Details:  
230V/50Hz, Max.150m³/h blower capacity  
Tank = 22,70 liter



# NO MORE ODOR AT Malta Waste Water Plant

WATER SERVICE CORPORATION inaugurated Ta' Barkat sewage treatment plant in June 2011 to eliminate marine pollution in Malta. This plant can treat about 60.000 cubic meters of domestic sewage per day, which is around 80% of all wastewater in Malta.



**AUTHOR:**

**CLAUDIO BOSCOLO**

Due to the high temperature in the long and warm summer season, from the first period of running of the sewage plant, sometimes an unpleasant odor problem appeared.

Chemic Ltd., a company actively involved in Malta in the startup of new companies, new technologies and

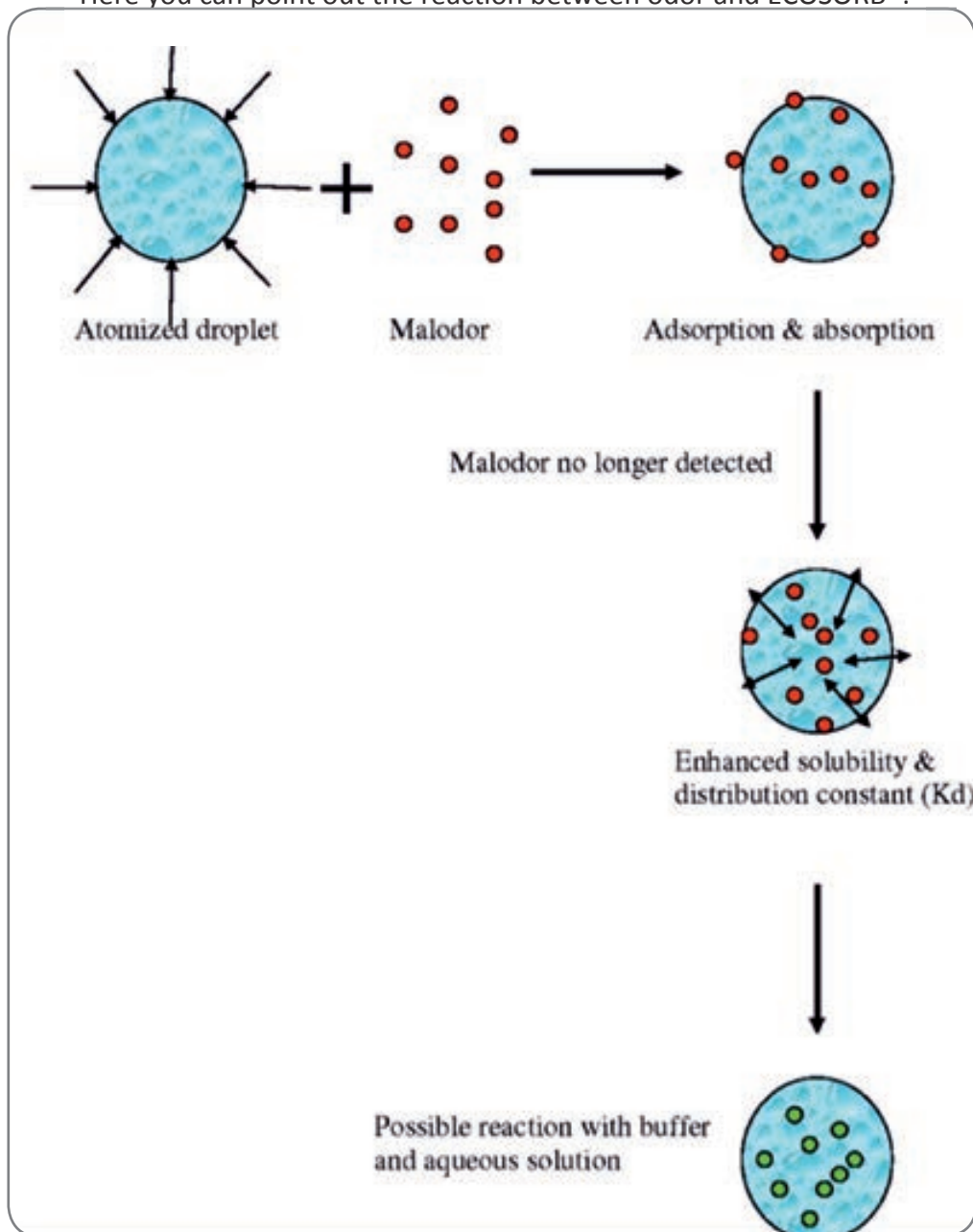
supply of water treatment chemicals, contacted ACAT to find a solution to control the odor problem.

ACAT personnel through a survey of the plant handled the problem and offered a full service with dosing equipment system and ECOSORB®, the product to neutralize the odor.

Primarily, ACAT offered a long test in a part of the plant (primary settlement and flocculation area). Thanks to the good result of this test, WSC issued a tender to treat all areas of the plant in order to avoid any single odor problem for the future. Chemic in cooperation with ACAT won the tender and installed the full equipment.

The ECOSORB® DOSING SYSTEMS named HPS were installed in the following different areas of the sewage treatment plant observed like odor sources:

Here you can point out the reaction between odor and ECOSORB®:



1. Pumping station
2. Primary settlement and flocculant plant
3. B.A.F. Biological aerated filter
4. Sludge thickening and dewatering building
5. Waste wash water tanks
6. Digested sludge storage tank

In Ta' Barkat the full equipment installed is composed of:

- 6 HPS Box
- around 300 nozzles, 4 micron orifice diameter
- 800 meters of pipeline

#### HPS BOXES

(high-pressure systems) are the systems of choice for most outdoor installations and even some indoor installations.

These systems run on 70 bar of pressure, providing a good atomization (misting) through patented nozzle design, easily installed. A digital dosing pump is included into the HPS box along with the electrical box control and hydraulic one. The atomization nozzles are commonly installed in a flexible polyamide hose, with a large selection of nozzle spacing's. Standard brass or stainless steel fittings can be used throughout the system. To correctly size and specify a Hydraulic High Pres-



sure system, one must first define the area to be covered and the location of the atomizing nozzles in order to cause Ecosorb® to come into contact with the malodor. If the installation is open air, the engineer must consider nozzle location in relation to the odor source, areas to be protected from the odors (neighbors), prevailing and secondary wind conditions. Often, we place a nozzle line with controls around the entire perimeter of an odor source, such as a wastewater pond. For example, this installation might be along a fence or roofline. Overall, the most effective wastewater plant surrounded by nozzle system misting equipment placement is to place the atomization nozzles as close to the odor source as possible. Nozzle spacing is not critical, as long as we consider that Ecosorb® must simply come into contact with the malodor. A conservative suggestion is to space the nozzles 2 to 3 meter apart.

**ECOSORB®:**

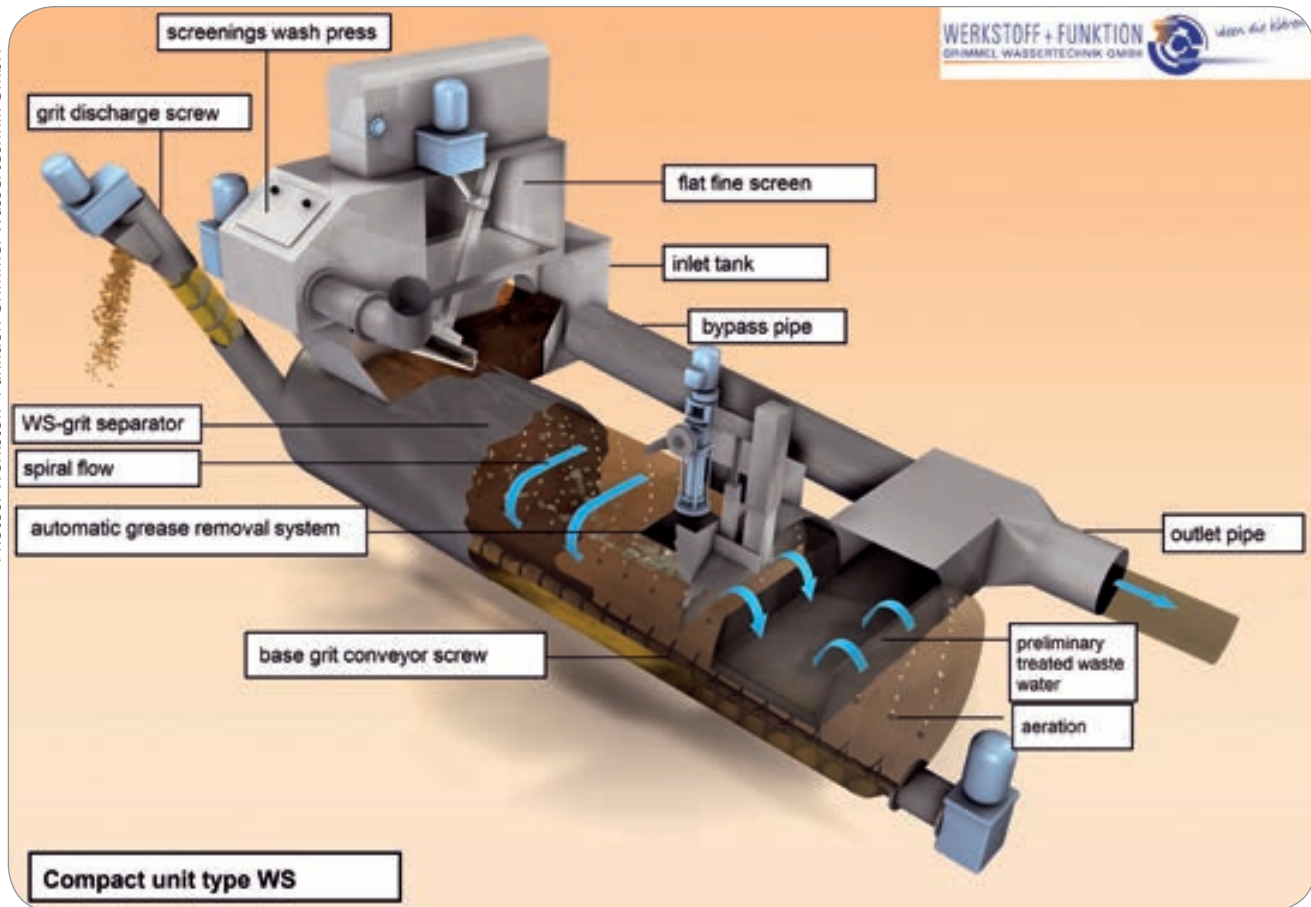
ECOSORB® has proven to chemically convert foul and

potentially harmful gases into non-odorous, non-toxic by products. Some tests has verified that Ecosorb is effective in the breakdown and reduction of hydrogen sulfide, ammonia, sulphur dioxide, ethyl and methyl mercaptans - potentially toxic gases which comprise the most common sources of odour. ●



# WV REGION GRATKORN - GRATWEIN, 40.000 INHABITANTS

The largest Austrian compact system equipped with a cylindrical grit separator and a grease trap for a  $Q_{max} = 300 \text{ l/s}$  is gaining more and more widespread acceptance.



Photos: Werkstoff+Funktion Grimmel Wassertechnik GmbH

**AUTHOR: CHRISTIAN KOZANDA**

In the last decade we have equipped many sewage plants with Grimmel Water Technology (Germany) components for mechanical cleaning (flat fine rakes, round fine screens, compact systems, sand washer, etc.) in Austria. Now we received a further major order in the immediate vicinity of the treatment plant Zeltweg already operating, for many years, the largest compact system to the owner's complete satisfaction. After several years of planning the

WV Region Gratkorn - Gratwein decided to renew the complete mechanical cleaning stage for municipal wastewater of the central sewage treatment plant (Sappi paper mill - 533.000 inhabitants). The treatment plant is located in an exposed position so all the buildings must be enclosed which means there is very little space available. The space requirement was a key criterion. The company opted for a compact system with cylindrical grit separator, because of the minimum





space requirement, the highest separation performance and the positive operating experience in Zeltweg.

We are really proud to announce the receipt of the total order for the "expansion and adaptation of the mechanical purification stage". The order includes the dismantling of the entire old system, the construction of a temporary arrangement ensuring the uninterrupted ongoing operation, the delivery and installation of the gravel trap, cylindrical grit separator with flat fine rakes and wash-pressing of screenings, automatic grease scraper, all measuring devices, stainless steel pipes DN600 / 400 and fittings, the electrical switch and control system as well as the exhaust air extraction and the transfer station for feces and sewer grit.

We are pleased to again have a Styrian project in collaboration with the engineering office Bilek & Krischner ZT GmbH in Graz in 2016. Once more it will be a major chal-

lenge because of the need for continuous production on the sewage treatment plant during the renovation phase.

### Sizes of a cylindrical grit separator- compact system

Baugröße/ Typ	Durchsatz- leistung (l/s) (m³/h)		Maschinen- länge (mm)	Maschinen- breite (mm)	Maschinen- höhe (mm)	Rohrsohle- zulauf (mm)	Rohrsohle- ablauf (mm)	Anschlüsse DN
	l/s	m³/h	L	B	H	H1	H2	
WS 20	20	72	3400	2180	2900	1150	1020	250
WS 40	40	144	4400	2230	2900	1150	990	300
WS 60	60	216	6150	2280	2900	1150	950	350
WS 80	80	288	7400	2280	2900	1150	950	350
WS 100	100	360	7900	2330	3050	1290	1050	400
WS 120	120	432	8900	2330	3050	1290	1050	400
WS 140	140	504	9450	2450	3200	1450	1150	500
WS 160	160	576	10150	2450	3200	1450	1150	500
WS 180	180	648	11050	2900	3650	1650	1350	500
WS 200	200	720	12050	3000	3650	1650	1350	600
WS 220	220	792	13050	3000	3650	1650	1350	600
WS 240	240	864	13150	3200	3850	1770	1450	600
WS 260	260	936	13750	3200	3850	1770	1450	600

Sondergrößen nach Bedarf

Jungbunzlauer Austria AG,  
1,5 Mio. Inhabitants -

## THE SUITABLE DEWATERING UNIT FOR EACH SLUDGE

New sludge dewatering units for the second largest wastewater treatment plant and the largest industrial wastewater treatment plant in Austria.



AUTHOR:

DIETMAR STRECKER

In Pernhofen near Laa/Thaya in the Waldviertel, Lower Austria, Jungbunzlauer Austria AG operates the largest citric acid plant in the world with associated treatment plant. The internationally operating Jungbunzlauer group has its roots at the production site Pernhofen. Currently, Jungbunzlauer operates plants in Austria, Germany, France and Canada.



Based on natural raw materials, various additives are produced mainly used in the food, cosmetic, pharmaceutical, detergent and construction industry. At the plant in Pernhofen it's all about citric acid. The substance is used in form of sodium citrate as an acidifying agent in the food and beverage industry, and it is used also in detergent industry.

Citric acid is commercially produced by fermentation. It is the most widely used as an organic acidifier and pH control agent for food, beverage, pharmaceutical products and technical applications. In Pernhofen also Xanthan is produced, used as a thickener and stabilizer for food, salad dressings and sauces.

The company's history dates back to the 19th century. It started in 1867 with a spirit distillery in the village of Jungbunzlau in former Bohemia. In 1962 the industrial production of citric acid started in Pernhofen and since that time, the company has consistently grown.

In 2012, on-site tests were carried out with various sludge dewatering systems. It has been shown that the most economical system for the industrial sludge is a belt filter press with upstream thickening (combined machine). In 2014, two new drainage systems with belt

filter presses were tendered. The reasons were: the low polymer consumption (for procedural reasons only powder polymers are permitted), low maintenance requirements despite the highly abrasive sludge and the highest availability (24 hours a day, 365 days a year, necessary, because of the downstream thermal drying without buffer tank) and the good past experience with the three existing drainage lines with belt presses.

After detailed examination of tenders and negotiation for the new contract, in 2015, we were commissioned to supply two W + AT belt filter presses type BFP200 (with new pressing rollers) and two belt thickeners type FD170 with a throughput capacity of up to 15 m<sup>3</sup> / h and up to 600 kg DS / h. Due to the special sludge composition only coated material 1,4571 was permitted. Also all valves, cylinders, the complete automatic lubrication unit, pipes and so on had to be made of material 1,4571. In addition, both machines were equipped with an extraction system and strip curtains, to affect the ambient air in the hall as little as possible. Since autumn 2015 the two systems have been in full operation.

We would like to thank the WWTP management Dr. Klaus Götzendorfer and his team for the confidence they have invested in us and for the excellent cooperation. ●



# AWV WIENER NEUSTADT SÜD, 260 000 INH.

After the good cooperation in 2013, the AWV Wiener Neustadt Süd opted again for the ACAT plant and engineering technology.



**AUTHOR:**

**DIETMAR STRECKER**

Already in 2013, after a competition (best bidder principle) ACAT was commissioned with the conversion and the delivery of the complete excess sludge thickening system (two belt thickeners type FD120 with all pipes, pumps and control unit). I was allowed to handle the project as project manager. Now we are pleased to announce a further order for ACAT by the AWV Wiener Neustadt Süd.

The territory of the AWV Wiener Neustadt Süd includes the Lower Austrian town of Bad Erlach, Hochwolkersdorf, Katzelsdorf, Lanzenkirchen, Lichtenwörth, Natschbach-Loipersbach, Neudörfel, Neunkirchen, Breitenau, Pitten, Schwarza am Steinfeld, Seebenstein, Walpersbach, Wartmannstetten, Wiener Neustadt and the company W. Hamburger GmbH.

In July 2015, at the tender opening session (tender with best bidder principle) for the renewal of the complete sludge dewatering (mechanical equipment including electrical supply) we were ranked third (variants or alternatives not considered).

After a thorough evaluation of bids by the engineering office Dr. Lang ZT GmbH in Wiener Neustadt and after the presentation of the results of sample pressures required in the tender to confirm the defined guaranteed values of the bidders, our offer for the decanter emerged as the best bidder.

The AWV Wiener Neustadt Süd concluded a contract with us for the dismantling of the existing sludge dewatering system (a chamber filter press and two decanters

including conveyor technology) as well as with the delivery of two decanters manufactured by Andritz, type D4L, including the complete conveyor technology and container loading. The loading is carried out on ten containers. Before each container an additional emergency discharge is installed. The contract also includes the polymer treatment plant with equipment, all pipes, pumps, crane systems and electrical engineering. The reconstruction will take place in 2016, while maintaining sludge dewatering operation.

Throughput in normal operation per machine of up to 10 m<sup>3</sup> / h and up to 270 kg DS / h.

Throughput in maximum mode per machine of up to 15 m<sup>3</sup> / h and up to 405 kg DS / h.

The ACAT plant and engineering technology GmbH guarantees the following values, taking into account the above mentioned throughput rates. The TRA value is 26 percent for a specific amount of polymer of 13.8 kg / t DR.

We would like to thank the AWV Wiener Neustadt Süd, Mr. GF. BR H. C. DI Dr. Scherz, and his entire team for many years of good cooperation and for the confidence that you have placed in our company once again. ●





# **Mohler Metallbau Spiralförderanlagen**

Hauptstrasse 99  
CH-4444 Rümlingen  
Telefon +41 62 299 10 82  
Telefax +41 62 299 15 51  
E-Mail: [mohlermetallbau@bluewin.ch](mailto:mohlermetallbau@bluewin.ch)  
Web: [www.mohler-metallbau.com](http://www.mohler-metallbau.com)



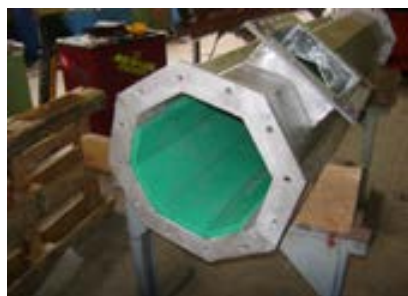
## **Schlamm entwässerung:**

Realisierung nach Kundenwunsch  
Projektierung, Herstellung, Montage  
Unterhalt und Reparaturen vor Ort  
von Schneckenpressen und Zentrifugen,  
Flockmittelstationen und Antriebe



## **Spiralförderanlagen:**

Herstellung von Förderspiralen in Stahl,  
CNS oder Hardox. Durchm. 20mm-650mm  
sowie Verschleisseinlagen (Liner) in  
Kunststoff, Stahl, Hardox, Borax  
U-Kanal in Stahl oder CNS Horizontal-,  
Steig-, Senkrecht- oder Verteilförderer  
Projektierung, Herstellung, Montage  
Unterhalt und Reparaturen vor Ort.



## **Unterhalt, Reparaturen und Revisionen:**

Von Pumpe, Exzenterpumpen, Antriebe  
Schieber, Zylinder (Hydraulisch-Pneumatic)  
Hydraulikaggregate etc. vor Ort-Werkstatt  
inkl. Demontage und Montage

**Alles aus einer Hand**



# Our aim: ENVIRONMENTALLY FRIENDLY OPTIMIZED LOGISTICS

„Technical Service is our success“ – the guiding principle for our company does not only include quality, support and delivery, but also logistics being as environmentally compatible as possible. Therefore, for example, wherever possible, we transfer shipments from road to environmentally friendly rail and waterways!

**AUTHOR: ALEXANDER FRANK**

It is important to us, to ensure optimised logistics in addition to excellent products and high product quality. We see the best service for the customer as a holistic approach in order to offer the best product quality, support and delivery. In addition to all technical matters, we want to meet our responsibility towards the environment and the society. For this reason, in all our activities we take into account not

only cost and quality but also the environmental impact. If possible, we have converted our transports to combined transport to improve the CO<sub>2</sub> balance of our logistics. Combined transport is the movement of goods by truck on ship or on train. The semi-trailer moves on some line sections by train or by ship. In the European inland

transport this is already possible and it makes sense, because a lot of CO<sub>2</sub> emissions can be saved. Moreover higher load weights can be transported. In 2015, we were able to save about 41,478 kg CO<sub>2</sub> compared to truck transport by road only, and we hope to further increase the number of eco-friendly shipments. ●



# FIRE BOWLS MADE OF GEOPOLYMERE at the NDU St. Pölten

In the winter semester 2015 of the New Design University in St. Pölten students became acquainted with the new material class of geopolymers within the lecture "New Materials" and the practical exercise "Craft Centre".



**AUTHOR**  
**AND PHOTOS:**     **ARCH. DI THOMAS SCHEIBLAUER**

Geopolymers are inorganic ceramic materials consisting of long chain aluminosilicates with incorporated balancing alkali metal cations. They can be easily produced at room temperature and they have a number of amazing features. Geopolymers are fire and acid resistant, they have very good mechanical properties and a shiny surface with an outstanding replication accuracy. For example, a basic recipe consists of special metakaolin (thermally treated china clay) and an alkali metal sili-

cate solution (sodium or potassium water glass). Within 24 hours the mixture hardens to a rock-hard ceramic widely used as a binder, adhesive or coating.

According to the motto of the DU "Normal is dangerous," these materials, which are still unusual in Austria, were not only tested regarding their design capability, but they also had to undergo a trial by fire. Without the generous donation of metakaolin (M 1000) and cordierite fireclay (Artal 23) of ACAT / Imerys the tests could not be performed. We would like to take the opportunity to thank Mr. Gerhard Zima, who made this possible.

First, in an introductory lecture, the historical background, application examples and the chemical nomenclature, introduced in 1979 by the founder of the



research of geopolymers, Prof. Joseph Davidovits, were explained. (Davidovits 2011), (<http://www.geopolymer.org/>). Then the students made 42 small test specimens. The basic recipe of metakaolin and special potassium water glass could be freely varied, and in the selection of aggregates creativity was given free reign. For example, pine needles, earth with grass, metal chips, vitamin C effervescent and salt were used. The results were really surprising (not expected hardening, millimeter thick efflorescence). After one week the test specimens were removed from the molds, stored at room temperature for 34 days and then soaked for four days. 26 samples passed the water test, eight samples were damaged and eight were destroyed. According to Davidovits the water test proves, whether it is indeed a geopolymer bond or it is only a water glass bond.

In October everyone was very busy at the Craft Studio – functional fire bowls would be designed and manufactured, which would be fired with firewood during an evening party in November. The team of students chose their starting materials from a range of six materials: High performance concrete (HPC), refractory concrete, ultra-high performance concrete (UHPC), roman cement, geopolymer based on meta-kaolin and geopolymer based on fly ash / slag sand. For the fiber reinforcement coated basalt short fibers (alkali-resistant) and glass fiber were used, for the surcharges predominantly cordierite fireclay (Artal 23) in two different particle sizes and ordinary quartz sand were used. 14 bowls were made, three were made of metakaolin-based geopolymer, three of geopolymer based on fly ash / slag sand, three of HPC with sand, three of HPC with Artal 23, a UHPC and one was made of refractory concrete.



*14 bowls were made, three were made of metakaolin-based geopolymer, three of geopolymer based on fly ash / slag sand, three of HPC with sand, three of HPC with Artal 23, a UHPC and one was made of refractory concrete.*

lin-based geopolymer, three of geopolymer based on fly ash / slag sand, three of HPC with sand, three of HPC with Artal 23, one of UHPC and one was made of refractory concrete.

The specification for the moulding was: With expandable membranes and intermediate thin layer of material,



*The bowl before (left) and after firing (right) slightly damaged but structurally intact*



various molding strategies should be tried. Some mixtures were difficult to process (UHPC, refractory concrete) and some were completely unsuitable for this particular method (roman cement).

But HPC and geopolymer could be easily adjusted to meet the rheological requirements of the foil method. The tests with geopolymer proved to be very useful for the addition of the liquid amount. After one week the bowls were removed from the mold and stored at room temperature until the fire bowl party on 27 November, 2015.

The culture center "Lames" in St. Pölten with its gallery spaces and expansive outdoor areas was the perfect setting for the presentation of the project and the baptism of fire. Two cubic meters of firewood ensured sufficient fuel. The aim was to heat the fire bowls to the breaking point. The survival time of the bowls was between half an hour to several hours. Eight shells were completely destroyed, four were slightly damaged (hairline cracks, flaking); one really beautiful bowl, which was not fully fired, and one bowl "survived" despite several hours of firing without any damage.

This cup with a wall thickness of about 15mm was made of geopolymer based on metakaolin and green pigment suitable for concrete. The reinforcement were basalt fibers and the sur-



*Geopolymer plate broken at the hole edge (left) when removed; no damage: "hot dog stand" (right)*

charge was cordierite fireclay (Artal 23). Throughout the evening the bowl was used as a "hot dog stand" and it had only discolorations inside. There were no hair cracks and when knocking the sound was just like before firing. It is possible to fire it once again. The bowl made of geopolymer based on fly ash / slag sand survived the baptism of fire almost undamaged, just with one hairline crack. Two HPC bowls had small damages. Some bowls withstood the firing for a long time, but they broke into several parts when demounted.

The determination of the heat flux density the bowls were exposed can be obtained from literature. The specified combustion temperatures for the three main components of wood, cellulose, hemi-cellulose and lignin are 240-350 ° C, 200-260 ° C or 280-500 ° C (Spear Point 1999). The heat flux density of burning branches determined by Sullivan and others see diagram 1.

The steps in the curve resulting from the gradual combustion of twigs with different thickness, the thinnest ones burn first.

The amount of energy (kW / m<sup>2</sup>) consumed by the workpiece can be determined graphically (area under the curve).

Alternatively, the heat current density can also be determined by the modified Stefan-Boltzmann law for non-black bodies (Lambertian reflectance)

$$P = \epsilon(T) \sigma A T^4,$$

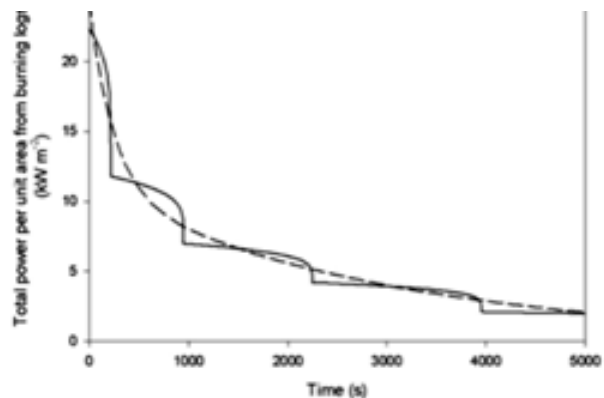
By substituting the following values an average heat flux of  $P = 19,84 \text{ kW/m}^2$  is obtained: the Stefan-Boltzmann constant  $\sigma = 5.670 \times 10^{-8}$ , T constant 500 ° C (773 K) and a common emissivity for wood of  $\epsilon=0,98$ . Then the area-based energy is

$$E_f = 19,84 * t [\text{kWh/m}^2].$$

For 5 hours  $E_f = 19.84 * 5 = 99.20 \text{ kWh / m}^2$ , which is significantly (estimated 2x) more than obtained by the more-realistic curve by Sullivan. But you can gain a qualitative estimation of the magnitude of the not inconsiderable energy exposed to a fire bowl.

Which factors were decisive for the fire resistance? Clearly positive was the use of fireclay instead of quartz sand, although the volume-increasing conversion of  $\alpha$ -quartz into  $\beta$ -quartz only takes place at 500-575 ° C. It seems that the lower (factor 10) expansion coefficient of the fire clay is decisive.

The amount of basalt fibers used had a positive effect



also - the more, the better. In contrast, the glass fiber grid could not prevent the concrete chipping above the grid.

From about 300 ° C up, the evaporated crystal water of the CSH phase of the concrete systems caused explosive spalling. This was the case with one of the four damaged bowls. About 25 minutes after starting combustion there was a spalling with a loud bang directly under the seat of fire. A favorable shape of the bowl can compensate for this, as it turned out that despite intensive firing a round step pyramid shape was only slightly damaged (1 hairline crack).

As the chemistry of geopolymer compounds works without bonded water, this risk factor is eliminated in geopolymers. An additional positive impact on the strength of the geopolymer are longer mixing times of the metakaolin and alkali-silicate solution. The geopolymeric solidification reaction takes place in two stages: first there is a resolution of metakaolin and then a polycondensation or a geopolymerisation. The efficiency of the reaction can be increased by the supply of mixing energy during solution phase.

In summary, up to about 500 ° C simple geopolymer mixtures can also be used for fire-resistant applications, if certain conditions are observed (suitable fiber reinforcement, mixing, fireclay). High performance concrete with microsilica is equal to it, if it is sufficiently reinforced with fibers and if fireclay instead of sand is used.

The setting of the workshop was not made on the basis of academic criteria to allow an informal experimentation and to get to know the new material. Nevertheless, the experiences gained are very important for all participants, for the future handling of geopolymers and for the arising of curiosity regarding this promising material.

# PERFECT SOLUTIONS

## Optimally dissolved polymers



### AUTHOR:

**THEO WEINBRENNER**

In 1994 polymers were the first major pillar of environmental engineering of the newly established company ACAT.

But soon, the question arose whether it would not be strategically advantageous to link the years of knowledge of the employees in the environmental technology with the associated engineering technology to be able to offer total solutions in application technology. The combination of equipment, chemical products, and the expertise and experience of the staff has been very successful.

First steps in construction of smaller units were made in the backyards and garages of our employees. The pioneering work in this field is contributed to our "veteran" in plant engineering, Bernhard Anzenberger, actively supported by the Heads of Department of paper and of environment, Theo Weinbrenner and Erich Sailer.

In 2000 the technology center in Scheibbs, Lower Austria, was bought and converted. A major activity is the design and construction of polymer dissolving units for

environmental engineering. The strength of our small manufacturer plant is, above all, to meet special customer requests and to be able to fulfill almost every request with the existing base technology. This flexibility allows us to meet the needs of each municipal sewage treatment plant and to support the environmental technology in the preparation and dosing of its wide range of polymers.

In general polymer systems are distinguished depending on the dissolving technique used. There are two techniques: the Jet Wet and the dispersion technique. The procedure and construction of the systems are kept as simple as possible to avoid unnecessary sources of error. The control units used have changed over the years. Today also very simple systems are controlled exclusively by PLC systems. Of course, for the integration into a process control PCS system our systems are also available without control units. All systems are designed for continuous 24 hour operation.

### Dispersing technology

In the case of dispersing technology the powder is con-





veyed via a screw, directly into the disperser and wetted with water. Then the powder is dissolved by stirring in the container. This method is often used in municipal wastewater treatment plants.

#### Jet Wet technology

Alternative solutions are required by our customers and one of these is the Jet Wet technology. In this case the polymer powder is conveyed with a screw into a venturi tube and blown with a fan into the Jet Wet head. The fine distribution of the powder ensures a better and more effective wetting.

In both systems the necessary maturing time is achieved in a storage tank. The polyelectrolyte solution is pumped with a transfer pump from the dissolution tank into the storage tank.

We also offer systems for liquid polymers. They are based on a pot fitted with a high-speed agitator mixing the liquid polymer with water. If the pot is full, the mixture overflows into a storage tank. This system is also available in different sizes.

It has to be noted that in all systems a maximum concentration of the polymer solution of approximately 1.0% must not be exceeded. The polymer feed can be chosen in different variants, such as big bag or sack.



#### The following systems are ACAT basic versions

- PolyJet® PPU-1 disperser; double container
- PolyJet® PPU-2 Jet Wet; supply & mixing container
- PolyJet® FPU for liquid polymers

This treatment systems can be equipped with special dosing systems, enabling the dilution to the desired polymer / bentonite concentration and a continuous dosage. All types and designs of pumping stations are available. ●



# HANDBALL as a compensatory time off to professional activities



For a long time Romano Renggli was responsible for the Swiss environmental market. In the meantime a successor for this activity has been appointed. Currently, Romano supports ACAT in the product development of many different and challenging projects. This article will show his private side, and how he finds his balance to his professional challenges.

## AUTHOR:

ROMANO RENGGLI

In 1965 I joined the school team handball. Coaches from different clubs watched the matches of the school championships, because they were on the lookout for talented players. One day I was asked to play in the Junior C League. Subsequently I went through all junior levels up to the Junior A League.

For my professional training I had to move to Basel, where I joined the Junior Handball Club of "TV Breite". I stayed with this team until the end of my active time as a handball player. The crowning of my career was the rise to the 2nd league. An Achilles tendon rupture finished my career, but not my enthusiasm for this sport. I decided to pursue a career as a referee. For ten years almost every Saturday or Sunday I was on the road in my capacity as game leader. Then it was time for another change: I trained as a handball coach. My first job as a coach was to establish a junior section in my region. At first I trained 15 to 20 children, at the end this was up to 40 children. Step by step, I worked myself up within the club: from the U 13 / U 15, a very difficult

age for boys, up to the U-17 team. With this team I celebrated my greatest success: we succeeded in the ascent into the second highest junior level in Switzerland. It was really an intense time, and beside the athletic performance also the social component has always been important to me. Many of the boys asked me for advice and often I could give them valuable tips. I certainly learned a lot from this for my professional life as a team leader.

After that I worked with the juniors of a Swiss top team. Two teams had to be supported: Inter U 19 and U 21 Elite (highest junior level). My job was to organize the team: to acquire players, to plan trips and games and to take over the coaching of the team in case of the absence of the coach. During the season we played throughout Switzerland. That meant: two to three days of training and one game per week. During this time the greatest success was the ascent from Inter U 21 to the Elite U 21. Some of the players trained by us played

in the Swiss premier league. At that time, my greatest challenge was to train and coach my own son ....

But one day it belonged to the past. I took a short break and four years ago I started to train an adult team. A completely new challenge form me! At the beginning the team was more like a bunch of chickens, however in the first year we were able to secure access to the higher league where we delivered a respectable performance (2nd place). Unfortunately, for regulatory reasons we were not allowed to ascend. The problem is that my best players are always "poached", which makes me proud to a certain degree.

Finally, I would like to take up the cudgels for handball. The players are training as much as football players and they do not complain, if there are three games plus training a week. This sport fascinates due to the difficulty, speed and fairness.

## ANNIVERSARIES

### Thomas Ensbacher 25 Years ACAT



It is hard to believe! The hair growth of all long-serving colleagues, changes. Their hair is turning gray or it is falling out, bald patches on the head become visible. But with Thomas it is different! For 25 years he has been member of ACAT, working with polymers in waste water technology, sewage treatment plants and in industry. He carries out the most reliable and most detailed laboratory tests, stress and long trips by car are on the agenda. All this has not hurt his hair growth. On the contrary! His magnificent head of hair has even increased.

Perhaps this is due to the fact that his travel destinations have changed -from the distant jungle, from the wildest Andes or from the chaotic India to the endless quiet expanses of northern Europe?

Is it the quiet married life, or maybe the enjoyment of his work? We will never know it. May his hair will keep on growing for a long time!

ES



### Edith Haas - 20 Years ACAT

For 20 years Edith Haas has been working for the ACAT group! Day after day she renders a valuable service to us far beyond the original job description for controlling. Being an SME, we are constantly striving to keep our "structures" as lean and efficient as possible, in order to use

our resources for support and advice. Therefore, not all functions and processes can be defined precisely. Because we push the boundaries, we always have to enter efficiently new territories. Edith succeeds very well in closing the right gaps with her own initiative and actions, allowing us to expand our structure in the most efficient way. She has been working her way into an indispensable position and she is very appreciated by all colleagues

We would like to thank her and to express our respect. We look forward to shaping the future together in the years to come.

POB



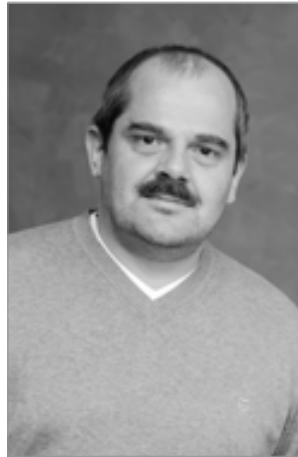
## ANNIVERSARIES

### Josef Praschl 15 Years ACAT

Josef Praschl played a decisive role in the establishment of the machinery & logistics center in Scheibbs. He is a trained electrician and over the years he has developed into a highly qualified expert in measurement and control technology. Today he is really indispensable for us. He is the one who maintains all electrical systems concepts, he develops all control systems for our plant technology, he creates circuit diagrams and he plans switchboards. Besides all this, he still takes care of the house installations in Scheibbs and Vienna and he is always willing to drive long distances abroad for commissioning. All our customers appreciate the competence and the expertise of Mr. Praschl.

In his limited spare time Joseph is devoted to his farm, which is currently abandoned. We hope that he will stay with our company for a long time! Dear Josef, the entire ACAT team would like to thank you for your professional support and it wishes you many more successful years of work and especially of health!

WT



### Goran Bijelic 10 Years ACAT

At the beginning of 2015 Goran Bijelic has found a new home in the department "Technology Center Scheibbs".

Previously he was a welding and service technician in plant engineering where he has expanded his knowledge in the field of screw presses for nine years. His

current responsibilities include plant engineering, various welding works and filling of Ecosorb® products. Goran is helpful and he is always willing to learn new things- right now he is familiarising himself with the fine details of the plant engineering for paper production. His ever-changing activities require flexibility and an enormous amount of work and he masters that very well. Goran spends his free time with his family. His two children keep him on the go. Nevertheless, there is still little time left for mountain biking in the Vienna Woods. We wish Goran all the best and we hope that we will jointly expand and refine our plant engineering for many years to come. With this in mind, let's drink to another ten years.

WT



### Andreas Nikel: 15 Years ACAT IT Management for the Entire Group

IT becomes more and more important and it plays an important role in almost all business areas. If one pulls the plug of the mainframe server, many processes of our daily work cannot be done. Therefore, it is all the more important that this division is in the best expert hands and that it is competently supervised and maintained. For 15 years now, Andreas Nickel has been excellently managing this area for the entire ACAT group. He is good at all IT segments: the mainframe server, the network area running under virtualized sections, clients, offered stationary or mobile, management and integration of fixed and mobile telephony



already running via Internet. Andreas is a highly qualified IT professional with a grip on reality, who also solves our small problems and he always has an open ear. He keeps our IT running with a sure hand and he defends us against viruses and worms constantly roaming the World Wide Web. We do not suffer cybercrime attacks, because in the background solid and good work is done.

Andreas, we want to thank you for your loyalty and for your excellent work – and for your patience, for your open ear and for your helpfulness. We congratulate on your anniversary and we look forward to many more decades working together!

MZ

## ANNIVERSARIES

### Bernadett Oleár 10 Years ACAT

10 years ago I met Betty for the first time, when we were looking for an assistant for the Hungarian market. I was positively surprised by her friendly, likeable character. Betty is always happy, always smiling and she is bringing this positive attitude also into our office at ACAT Hungary.



Over the past years Betty was responsible for Sales and Marketing for all our products sold in Hungary, but by the time she became more than that. Now she organizes all processes in her new function as our Office Manager. Although she has become a mother twice, she did not drop out for a long time - even during Maternity Leave she helped the company as much as possible. We all have to be thankful for her engagement and hope, that we can have many years together at ACAT. *ES*

### Helmut Benes 10 Years ACAT



For ten years now, Helmut Benes has been contributing to us his decade-long experience in water chemistry. He supports our customers in the field of boiler

and cooling water treatment, and he never tires to pass on his extensive knowledge to his younger colleagues. No disease could stop him fulfilling his tasks on time and competently.

In his spare time Helmut Benes lives out his creativity with painting and playing keyboard. He keeps fit by consistent training on the e-bike. We thank Mr. Benes for so many years of work and for his active support!

*ES*

## NEWCOMERS

### Vincent Tshakala

Vincent Tshakala joined ACAT ZA in June 2015 to manage the dye application at Mpact Felixton mill.

Vincent matriculated in 2008, and has spent his working career at Mpact Felixton originally as a contractor.

His duties included:

- General Machine maintenance
- Chemical basement assistant
- Stock controller
- Chemical Decanting

Vincent did his forklift training at Mondi during March 2016. We wish Vincent continued success and good luck for the future. *AA*



### Franz Bucher

Franz Bucher will strengthen the paper team in Vienna having its main focus on sales and technology. Previously, the master of paper-making was employed as a machine operator, shift manager and production manager at Hallein Papier. His new task will be the management of the supplier warehouse.

Franz lives in Kuchl near Salzburg, he is married with two daughters. In his spare time he is an enthusiastic mountain biker and he likes to climb the summits left and right of the Salzach. We are very pleased that with Franz Bucher we will provide experience and competent strengthening for our team and for our customers! We wish him a good start and every success in his new job and we look forward to a long-term cooperation! *RE*



## NEWCOMERS

### Daniel Besting:

Since January Daniel Besting has been strengthening our administration team at the office Vienna. After finishing studies in „Business Administration and Economics“ at the University Passau, Daniel worked as a strategic management assistant in the insurance business for one year. About two years ago he was a trainee in our company, therefore, Daniel gladly took our offer for working as a controller. Daniel likes to spend his free time with travelling, cooking and playing football and he is a trained football referee.

His responsibilities include ISO certification and internal auditing, and therefore it is very likely that we all will have to do his biddings in future. We are pleased to welcome him to our ACAT family, and we hope that we will jointly master many exciting future tasks and challenges.

HR



### Alexander Okhrimenko:

Since May 1, Alexander Okhrimenko has been strengthening the German ACAT-team. He was born in Kazakhstan and he holds a degree in chemistry from the National University of Donetsk (Ukraine). He started his career as a chemistry teacher. Later he worked as a food engineer

at a Ukrainian brewery, where he worked his way up to the chief brewer. After a short working period in the pharmaceutical industry Alexander Okhrimenko moved to a laboratory of a German sewage treatment plant. Then he became a Technical Sales Representative for paper chemicals of a German supplier. The knowledge he gathered from his last two activities made him an ideal candidate for his job at ACAT.

Today Alexander Okhrimenko lives in Papenburg (Germany), he is married with two children, and- if time permits- he does sports. We wish him both happiness and success in his new duties and responsibilities. Welcome to the ACAT team!

GG



## ACAT-FAMILY HAS GROWN: WELCOME BABIES!

### Günter Rauch has become Daddy!



Marilena was born on 18 December 2015 in Zwettl, Lower Austria. She was 50 cm tall and weighed 3570g. The entire ACAT team is pleased with the parents Barbara Rauch- Hübner and Günter Rauch.

### Emma Eden has arrived!



Baby Emma was born on 1 Dezember 2015 in Leer (G). She weighed 3560 g and was 52 cm tall. She is the little sunshine of her mother Nadine and her father Aaron. The members of the team wish the parents all the best!



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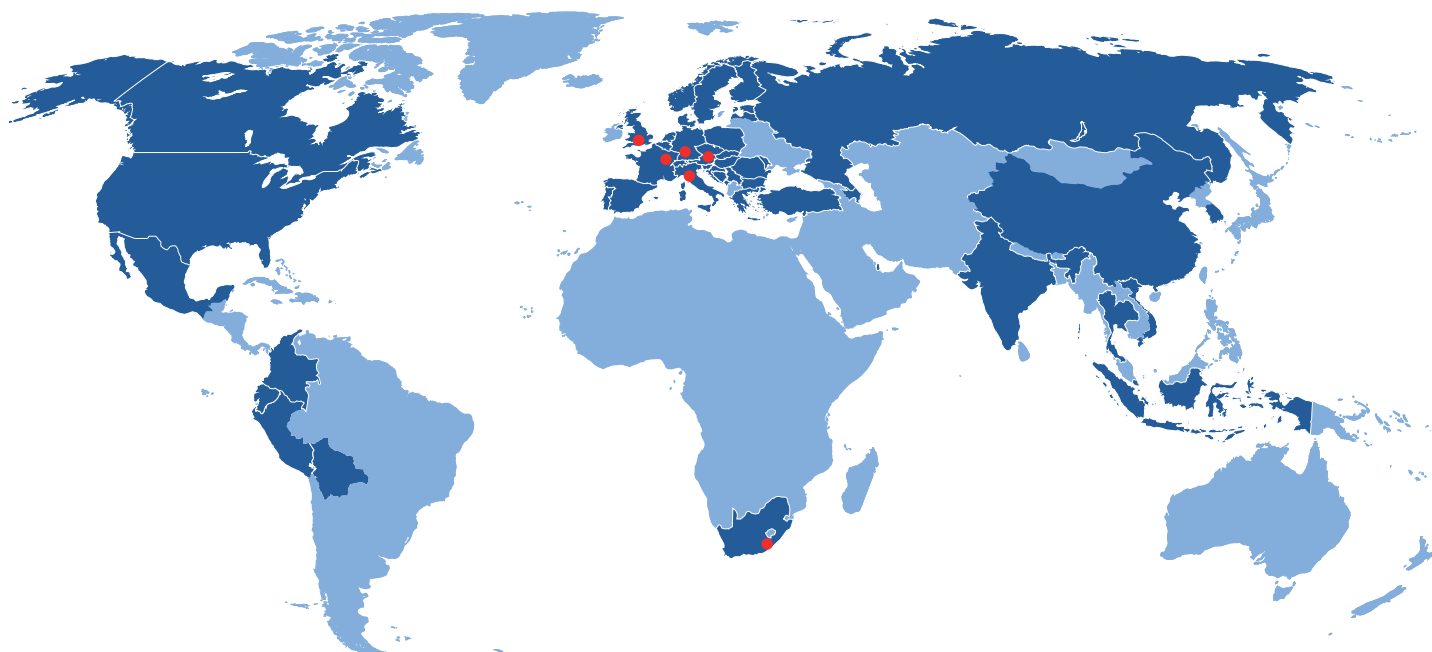
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