



wateralliance

Water for tomorrow

D.I.Y. WASTEWATER
TREATMENT

PATHEMA LIKES
FRENCH FRIES

PLASTIC
FANTASTIC!

GEARING UP
FOR THE NAVY

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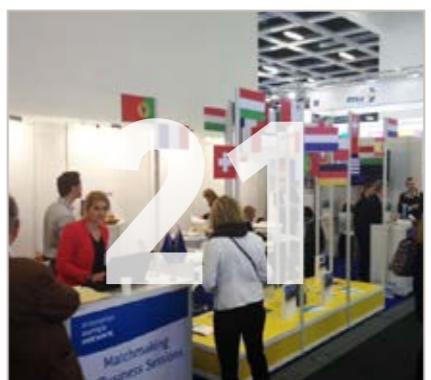
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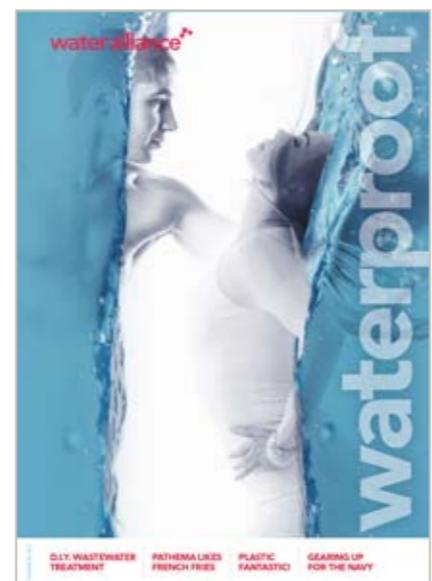
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a precious enterprise

COLOFON

WaterProof is the magazine of the Water Alliance, a partnership between government, research institutions and industry in the field of innovative and sustainable water technology. From its base, the WaterCampus in Leeuwarden, the Water Alliance builds on the 'water technology innovation chain'; a process whereby new ideas from universities, laboratories and test sites are converted into worldwide marketable products. WaterProof provides regional, national and global information on developments, results and background in the field of water technology.



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INTRO by Hein Molenkamp

LIMITLESS

You are reading the summer issue of WaterProof; an issue filled with activity. It is satisfying because, as usual, this magazine is all about entrepreneurship. The world of water technology is full of ideas; scintillating innovations, extraordinary inventions, and unbelievably impressive products. But getting them to market is a discipline in its own right. Fortunately, there are entrepreneurs around who are very good at that too. We are happy to help the less adept.

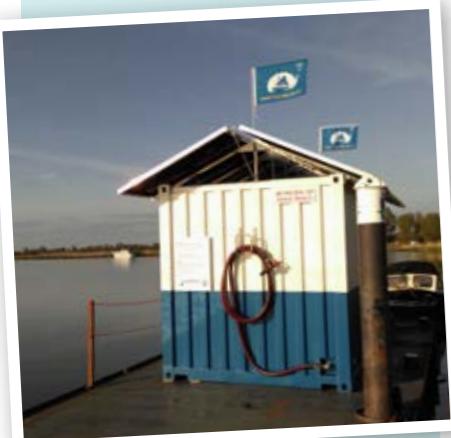
This issue contains wonderful examples of what can happen when smart innovations manage to find their way to the market. You get action, acceleration, dynamics. End users are often suddenly able to produce more efficiently, saving them money and contributing to a more sustainable world. For entrepreneurs in water technology, a market breakthrough often means a chance to reap some financial gains after a long period of sowing, or at least earn back their investments. This issue will take you around the world to a variety of places where that has either happened or is imminent. It is filled with inspiring stories, from Berlin to Las Vegas, and from France to Lithuania. That variety is a good thing, as the importance of smarter use of our resources - including water - is not limited by borders.

I wish you a great summer, with not too much water from above.

'This issue is filled with inspiring stories, from Berlin to Las Vegas'



BAAS: floating purification system



This is the BAAS, a floating waste water purification system of Afmitech Friesland. "Boats with waste water tanks can come alongside on the Frisian Lakes where there are no other facilities", CEO Jan Boele de Jong explains. "When they press a button, the waste water is extracted and purified thoroughly, after which we discharge it."

'Thousands have lived without love, not one without water.'

W.H. Auden



USED TOILET PAPER FINDS ITS WAY TO THE MARKET

CirTec from Purmerend has achieved a world first with the official commissioning of the first cellulose production facility on a representative demo scale at the sewage treatment plant in Geestmerambacht (just above the city of Alkmaar) on 29 June this year. It is a true breakthrough in recycling cellulose from sewage.

The so-called Cellvation plant produces around 400 kg of clean cellulose every day. Cellvation® was developed by CirTec BV and KNN Cellulose BV. Both companies are active in the water sector and the circular raw materials market.

Some of the cellulose will be exported to England and used as a raw material for biocomposite. The remaining cellulose will be made available for the development of other products and to further develop running initiatives. What makes the project extraordinary is that all the cellulose reclaimed in Geestmerambacht is given a second life in a high-quality product.

As an addition to the celebrations, the new name, CirTec BV was also presented during the opening. CirTec was formerly known as BWA BV. The opening of the new plant was an excellent opportunity to launch the company name 'CIRculaire TEChnologie' (circular technology).



The completion of the Cellvation plant at Geestmerambacht is part of the Horizon 2020 innovation project 'SMART-Plant'. A collaboration between CirTec and 24 partners, the SMART-Plant is aimed at optimizing the recovery of raw materials from wastewater, increasing energy efficiency, and reducing CO2 emissions in existing treatment plants.

BOOST FOR BEENEN

A great boost for industrial automator Beenen. Together with IAS Industrial Automation (both are part of Batenburg Techniek), Beenen received an order involving the replacement of the process automation in three sewage treatment plants run by the Noorderzijlwest water board in the North of the Netherlands.

The order includes the delivery and implementation of new process automation systems for the sewage treatment plants in Eelde, Uithuizermeeden, and Delfzijl. "We are extremely proud to have received this order", says Alex van Dalen, General Director at Beenen. "Beenen and IAS are well known as specialists in delivering control systems for water technology. The project manager and lead engineer achieved the highest possible score during the interviews. Receiving this order confirms our specialism and our focus on quality."



HOW IS MAURICE DOING?

In the previous issue of WaterProof we called Maurice Tax from Bright Spark in Sneek, the Netherlands, "a real Gyro Gearloose".



He is a very active entrepreneur who conducts business all over the world, including the United Arab Emirates, where he will be using one of his inventions, the latest version of the 2B sure, to purify drinking water on nearly three hundred luxury ships for the Sheikh. It is a collaboration which indirectly stemmed from the Enterprise Europe Network (EEN), of which Water Alliance is a partner [EEN works on a global level to support SMEs looking for international collaboration or companies who wish to enter new markets, Ed.]. The WaterProof team was curious: how far along is that project now?

"We are working hard to install the 2B Sure on the

Sheikh's ships", says Tax. "We have also acquired a new project in Dubai through the Sheikh: installing the 2B Sure in water tanks on houses. The plan is to install 500 of them. We are also working on getting the 2B Sure included in the building regulations act for new buildings there. Aside from that, we currently have projects running in South Korea and Hungary, and the Swiss company Lonza, a global leader in pharmaceutical excipients, has also contacted us. Lonza will be selling Bright Spark products in their large network. Things are going well, and that is partly due to good contacts and networks such as the Water Alliance and EEN."

CEO of Haya Water in Oman visits the WaterCampus

On Wednesday, 26 April the Water Alliance received visitors from Oman. The CEO of Haya Water, Eng. Hussain Hassan Ali Abdul Hussain, was in the Netherlands to take a look at Dutch innovations in the area of water technology and to explore what water technology suppliers in the Netherlands could have to offer Haya Water. Haya Water is active in making water technology in the Muscat region of Oman greener and healthier. One of the most important topics and challenges the company faces is the recycling of water in the desert-like region. Haya has the largest water recycling project in the Gulf region. The visit to the WaterCampus was part of a more extensive visit to the Netherlands. In addition to a presentation about the WaterCampus given by Hein Molenkamp, Managing Director of the Water Alliance, at the Business Centre Johannes de Doper, there was a visit to the Water Application Centre. Afterwards, there was a working lunch with presentations by Berghof Membranes, Brightwork, the Centre of Expertise Water Technology (CEW) and Wetsus. Then in the afternoon the group also paid a visit to Paques in Balk.



From left to right: Jouke Smid - Water Alliance, Marijke van Oversteeg - Business Developer Assistant at Nederlandse Ambassade in Muscat, Oman Hein Molenkamp and Eng. Hussain Hassan Ali Abdul Hussain

Haya Water is active in making water technology greener and healthier

Collaboration between Eijkenkamp Soil & Water and Van Essen Instruments

Eijkenkamp Soil & Water (Water Alliance member) and Van Essen Instruments signed a new long-term collaboration agreement in April. Eijkenkamp Soil & Water will remain the exclusive distributor of Van Essen's Diver® water level logger, as well as the corresponding software and accessories. Eijkenkamp Soil & Water and Van Essen Instruments will also continue to work closely together to develop new smart water monitoring solutions.

Long relationship

"We are pleased to have extended our long relationship with Eijkenkamp Soil & Water once again", says Johan van Bruggen, General Manager at Van Essen. "Eijkenkamp Soil & Water gives us the option to properly provide users with our specialism in water levels and data logging. By working together, we can also further develop ourselves in a market which requires new solutions."



Pictured from left to right: Johan van Bruggen (General Manager, Van Essen Instruments B.V.), Louis Cornelissen (Manager Marketing & Sales, Eijkenkamp Soil & Water), Natasa Ibrisimovic-Iveljic (International Distribution Manager, Eijkenkamp Soil & Water), Frank Tillmann (CEO, Eijkenkamp Soil & Water), and Sander Baseliers (Marketing & Sales Manager, Van Essen Instruments B.V.)

www.eijkenkamp.com
www.vanessen.com

WATER ALLIANCE WALL OF SUPPORT LAUNCHED SUCCESSFULLY

Verborgen Schatten in de Afvalwaterwereld (Hidden Treasures in the World of Wastewater), a symposium on successful and less successful research/innovations in wastewater treatment technology, was held in early March.



During the symposium, Water Alliance launched a new initiative: the Water Alliance Wall of Support. Symposium participants were given the opportunity to share their own innovations, questions, and ideas by posting brief outlines on a wall, in order to get in touch with interested parties. After a somewhat hesitant start, the wall was filled with ideas throughout the day, leading to verbal discussions during breaks and over drinks, as well as written responses in the shape of business cards. The responses were collected at the end of the day for future contact. Given its success, the initiative will definitely be repeated.

EUROPEAN WATER TECH WEEK 2018

The global water technology sector is increasingly organized in hubs. The European Water Tech Week Leeuwarden 2018 (EWTW 2018) will connect these hubs in Leeuwarden, the United Nations Innovating City for water technology. At this special event, the sector will meet and inspire each other in the innovative climate of WaterCampus Leeuwarden..

Inspiring

Innovation, technology and policy leaders from companies, universities and governments get together during several inspiring events taking place from September 24 to 27, 2018. EWTW 2018 will among others feature the Wetsus Annual Congress 2018, Water Alliance WaterLink2018 and a dedicated trade show. All of this will be accompanied by a unique cultural program linked to water, to celebrate Leeuwarden's official status of European Capital of Culture in 2018.



Don't miss this unique event and stay up to date on the program at www.watercampus.nl

GREENFLUSH: SAVING WATER THROUGH REUSE

Approximately 175,000,000,000 litres of water are used worldwide to flush toilets every day. Bathrooms use even more water (around 50% more); clean tap water which is only used once and sent straight to the sewers.

Adqua, a company from Huizen, the Netherlands, is working to change that. They have developed a system which can reduce an average household's water consumption by up to 30%. GreenFlush.

Hooked up

GreenFlush reuses shower and bath water to flush the toilet after running it through a cleaning system. GreenFlush can reduce water consumption by up to 30% by reusing 62% of the water (the amount used in the bathroom compared to the total). Washing machines can also be hooked up to the system. Because the system reduces the total water consumption by up to 30%, it also reduces the costs for tap water by up to 30%. The system consists of a 135-litre container which fits above the toilet or washing machine. The system also requires the installation of new water pipes.

BLUE ENERGY GAINING GROUND

Blue Energy [reverse electrodialysis energy generation technology, Ed.] is slowly gaining ground in the Netherlands. In April, REDstack BV, a Water Alliance member and the driving force behind the technology, announced the launch of a second location in addition to the test plant on the Afsluitdijk: a demonstration plant at the drainage canal in Katwijk.



The project is a collaboration with the Hoogheemraadschap van Rijnland, the province of South-Holland, and the municipalities of Katwijk and Noordwijk. "The initial agreement is to examine the options and financial feasibility, but the end-goal is to put the Blue Energy plant at the pumping station in Katwijk into operation by 2020", says director Rik Siebers. "We needed to scale up. We are continuing our investments in research & development in Friesland, and we want to establish a showcase project in Katwijk with

which we can show the world what our technology is capable of. Katwijk's location along the Old Rhine drainage canal is an excellent place to build a demo-pilot with twenty times the power of the Afsluitdijk test plant: 1 megawatt." The technology, which uses reverse electrodialysis to generate energy from the differences between fresh and salt water, was proclaimed a National Icon last year, and fits in with the transition to sustainable, zero emissions electricity production, according to the cabinet.

Waflin Systems grows wings

There is a lot of news about Waflin Systems this year. Founded by Harry van Dalfsen, the company has grown wings and now operates as far as Las Vegas (more on this elsewhere in this magazine). Latest development: a merger with Hydrasyst UK Ltd and a new CEO. Regarding the merger: the company name will remain Waflin Systems Systems. Harry van Dalfsen and Kyle Wolff (Hydrasyst) are the two shareholders. The merger is intended to expand market opportunities through the sum of the two companies' experience and expertise. Henk Schonewille has been appointed CEO as of 1 April 2017. Schonewille has over 30 years of international experience in the water industry in the field of membrane technology, and has worked for companies such as Stork, Norit, and Pentair.



From left to right: Harry van Dalfsen, Henk Schonewille and Kyle Wolff

Presenting a united front at Aquatech Amsterdam

Companies thinking of exhibiting at the Aquatech Amsterdam (31 Oct - 3 Nov) should take note. Just like in previous years, Water Alliance will be hosting a collective exhibit together with the NWP and ENVAQUA. This guarantees clear profiling, worry-free preparation, and a very attractive price. To sign up and profit from this deal, please visit: www.nwp.nl/content/aanmelden-netherlands-water-pavilion-aquatech-2017



Mark Boeren, director of Pathema, stands in a room filled with industrial cooling equipment. He is wearing a dark polo shirt with the Pathema logo on the chest. He has his arms crossed and is looking directly at the camera.

Many cooling systems, used in practically every industry, use cooling water. The cooling water is often mixed with chemicals to manage scaling, corrosion, and microbiological problems. Pathema, from Goirle in the province of Brabant in the Southern Netherlands, is doing things differently. The company, which recently won the Water Innovator of the Year Award in the Netherlands, is using vortex technology instead of chemicals. We interviewed director Mark Boeren while he was on his way to visit a client in Belgium.

So you're on your way to Belgium; important meeting?

"Yes. I'm heading down to start up a cooling system for the Colruyt Groep; it's a large supermarket chain, known for the Spar, among others. They use cooling water in their distribution centre. Our system has been running entirely on rainwater without chemicals for two years now. The food sector is one of our biggest markets."

Why do they use Pathema?

"A lot of water evaporates in cooling water systems. This causes scaling, corrosion, and legionella problems. Mains water has traditionally always been used for this, with the addition of chemicals to keep the problems under control. We have developed a new method for treating cooling water. Our system is called IVG-C CoolWater, which stands for Industrial Vortex Generator-Circulation. It uses a vacuum, alleviating the need for chemicals to prevent the aforementioned problems. The system can even use spring water, wastewater, or rainwater instead of mains water!"

That sounds like a true innovation

"It is. We are the only company supplying this kind of system right now. We currently supply a lot to the Benelux, Northern France, and Germany. We also work with

partners who install and maintain the systems in other European countries. We began exporting to the United States a year and a half ago. We send the client a shipping container containing a plug & play system which they can install at their site. All they need to do is connect the water and electricity."

So you have no competition?

"I am currently not aware of anyone else doing this. Our main competition is still the chemical suppliers. End users are familiar with them, and they are often cheaper in the short term. In my opinion, that will be the death of the process and manufacturing industries in the long run, as the end user will eventually choose the sustainable version."

Sustainability is really important to you, isn't it?

"End users are begging for it, while suppliers are struggling to adapt their business model. The climate agreement is here to stay, and we won't make it if we don't speed up. It is startling to see suppliers hit the brakes when innovation doesn't match their business model. With that attitude, you won't be able to service customers with conventional means in the long run, and you will lose them."

How did you end up in this business?

"It was entirely coincidental. I discovered that treating cooling water with our vortex technology can be more sustainable and more efficient. I notice that many end users are looking for a more sustainable product, but that suppliers are often intentionally not supplying it."

In the company's early days, my father and I - we came up with it together - hit the market in the Benelux to show our product to the large cooling water treatment companies. We discovered that sustainability was not all that high on their list of priorities. If something requires them to modify their business model, they quickly lose interest. They weren't interested, even though our product will pay for itself within two to three years compared to chemicals."

How did you get your first customer then?

"With 'no cure, no pay'. We took on the full risk during that time; it worked out well for us. I can proudly say that, in our seven years of business, we have not lost a single customer."

Which customer are you most proud of?

"One of my favourite examples has to be Lamb Weston Meijer, a potato processor. They supply the french fries for McDonald's Nederland. This allows us to directly contribute to the increased sustainability of a huge number of end products."

You were recently named Water Innovator of the Year; what does that mean for your company?

"We are suddenly the subject of a lot of attention. It has been a great boost to our marketing strategy. We are suddenly connecting with end users who would otherwise be difficult to reach. I see it as a crowbar with which we can break into the market even faster."

What is currently your biggest challenge?

"Not growing too fast by saying 'yes' to everything. It's pointless to visit a potential customer if you can only deliver a system in two months. In that case, you're better off explaining to them that you will only have time to visit them in two months. Otherwise, you just can't provide your customers the level of quality you would like to."

The cliché question: where do you see Pathema in five years?

"In five years, we want to be the new standard in cooling water treatment. Today, chemicals are still the standard. Colleagues who can help attain that goal are more than welcome, as we cannot do it alone. My ambition is to play a leading role in that."

Water Alliance forges links with water cluster in Las Vegas, Nevada (USA)

Water Alliance representatives travelled to Las Vegas, USA, in April to take part in the 2017 General Assembly of the World Trade Centers Association (WTCA). The trip was organized by WTC Leeuwarden and led by Leeuwarden municipal alderman Henk Deinum (in charge of economic affairs). The annual WTCA General Assembly is major a business event, which the City of Leeuwarden will host in 2018. The official handover of the organization for 2018 was done in Las Vegas, at a grand gala in the Paris Hotel on the Las Vegas Strip, part of a three-day conference programme.



From left to right, Jan Zeinstra (WTC), Paul Vischedijk (WTC), Henk Deinum (Alderman Leeuwarden), Evelien Walstra (Leeuwarden), Hein Molenkamp (Water Alliance), Nathan Allen (CEO WaterStart Las Vegas)



The system has now been installed at the client's premises, a textile laundry in Las Vegas.

The 2018 event will also be held in April. Hundreds of participants will come to the Friesian capital from WTC organizations around the world. Of course, water will be a major theme at the 2018 event.

During the WTCA assembly in the USA, Water Alliance Managing Director Hein Molenkamp organized a special water technology meeting with WaterStart in Las Vegas. WaterStart is a cluster organization comparable to the Water Alliance for the state of Nevada, of which Las Vegas is the capital.

Challenges

Nevada faces numerous challenges when it comes to water. Las Vegas lies in the midst of a desert-like region, where water is scarce. Via WaterStart, a new programme has been launched initiating a worldwide search for new, innovative technologies that can help the rapidly expanding city manage its water use more intelligently.

Important

The Dutch delegation had six members, all of whom were involved in the Water Alliance's Leeuwarden-based water cluster. Alderman Deinum, speaking on behalf of the Municipality of Leeuwarden, made clear just how important the Water Alliance is in strengthening the region's economy. Nathan Allen, Director of WaterStart, indicated that they had been established on similar

grounds two years ago, financed by both the City of Las Vegas and the state of Nevada. WaterStart stimulates creation of new enterprises in the area of water technology and develops, in partnership with a variety of stakeholders, solutions to the challenges they face. One of the ways they do this is by taking a good look at the technology already available around the world.

Impressive

The meeting was followed by an excursion to one of Las Vegas's two large drinking water production locations. The River Mountains Water Treatment Facility is part of the Southern Nevada Water Authority (SNWA). This impressive water treatment facility pumps its water up from the nearby Lake Mead, and supplies drinking water to the City of Las Vegas and elsewhere.

Talking business in Las Vegas

There was time to do business too. For instance, Waflin Systems, which is based at the WaterCampus Leeuwarden, in collaboration with Westra Stainless Steel from the Friesian Elahuizen, will soon build a first facility for a textile laundering firm in Las Vegas. Waflin Systems developed a membrane technology that enables the reuse of hot water streams in industrial laundering processes. The technology was developed a few years back, with the support of a Fryslân Fennit stimulus grant. At the time it was tested at 'De Blinde', a textile laundry company in Heerenveen (Netherlands). The results of that testing period confirmed that considerable energy and water could be saved by washing and recycling aided by so-called ceramic membranes.

The system has now been installed at the client's premises, a textile laundry in Las Vegas.





LG Sonic gearing up for the Navy

'A one percent reduction can lead to massive savings'

Water Alliance member LG Sonic from Zoetermeer began work on a big project for the Royal Netherlands Navy late last year. The expert in algae control solutions will be installing multiple 'ultrasonic anti-fouling systems' in a 130-metre frigate. The project will result in a huge savings in fuel consumption and CO₂ emissions.

LG Sonic has been kicking up a storm with its ultrasonic algae and biofouling prevention and control technology for over ten years now. Their technology can achieve reductions in algae amounts of up to ninety percent. Today, their environmentally-friendly solutions are used by customers in more than fifty countries, from South Africa, Canada, and the Czech Republic, to Dubai, Ecuador, Malaysia, and Australia. Their customers include renowned companies such as American Water, Bournemouth Water, and SAB Miller.

Reduced resistance for ships
LG Sonic's ultrasonic technology has many applications. Their website, www.lgsonic.com, lists various examples. For example, it can be used to stop algae growth in lakes, tanks, and treatment plants. The technology can also be used on ships, according to CEO Yousef Yousef. "Our technology reduces the growth of algae and crustaceans, which in turn reduces the resistance of the ships through the water. A 1% reduction can lead to massive savings in fuel and CO₂ emissions."

Pilot

The Navy ships are currently often coated with anti-fouling coatings. Yousef: "Those coatings are often not good for the environment, and are expensive. The ships cannot be deployed while the coatings are being applied, which also costs a lot of money." Yousef is convinced that the pilot with the Royal Netherlands Navy will demonstrate that LG Sonic's technology scores higher than the coatings on many points. "We have to work carefully. We initially had one year in mind, during which ultrasonic transmitters would be installed in the ship's hull. However, because we are dealing with a battleship, there are strict safety requirements which must be met, and everything has to be done with great care. As a result, the pilot will take a bit longer than the planned twelve months. We are currently testing the technology in the ship's bow thruster first." The decision to extend the pilot period matches LG Sonic's m.o. "We work from the customer's point of view, not the technology. We listen and adapt to the customer's needs. If you don't, you will likely end up with a product that nobody is interested in."

'Our technology reduces the growth of algae and crustaceans, which in turn reduces the resistance of the ships through the water'

Network

LG Sonic came into contact with the Royal Netherlands Navy through the InnovationQuarter, the regional development company for the province of South Holland. Yousef was one of the speakers at the 2015 InnovationQuarter Annual Event in Rotterdam; he asked the InnovationQuarter team to organize a 'pizza session' for the maritime sector afterwards. "I held a presentation about LG Sonic and our innovative technology. Representatives for the Ministry of Defence were also present, and we talked after the presentation. That conversation resulted in the pilot for the Royal Netherlands Navy." With the Water Alliance membership, Yousef hopes to tap into new markets in the same way. "Our technology has many applications which could be of interest to other Water Alliance members. The Water Alliance network will help us get in touch with them faster."

www.lgsonic.com



LG Sonic CEO Yousef Yousef

Since 1999, LG Sonic has been a leading international manufacturer of algae control systems. Our products provide an environmentally friendly solution to effectively control algae in lakes, reservoirs, treatment plants, and other applications. Over the last decade, more than 10,000 LG Sonic products have been successfully installed in 52 different countries.

The Dutch Wetlantec is active in decentralized wastewater treatment by sustainable means. These kinds of treatment facilities often seem complicated. So you might think most people would be happy to leave building them to the professionals. Nothing could be further from the truth. Wetlantec recently introduced a DIY kit to the market, in addition to the facilities it installs itself: a self-build kit, to put together your own wastewater treatment facility.

"Wetlantec has 22 years of experience in decentralized wastewater treatment", says Jonas Pelgröm, project leader at Wetlantec. "So we can certainly call ourselves specialists in this field. There are very few other companies in the Netherlands that make these, and even fewer that do it as their core business. And our systems are also sustainable, which makes us really unique."

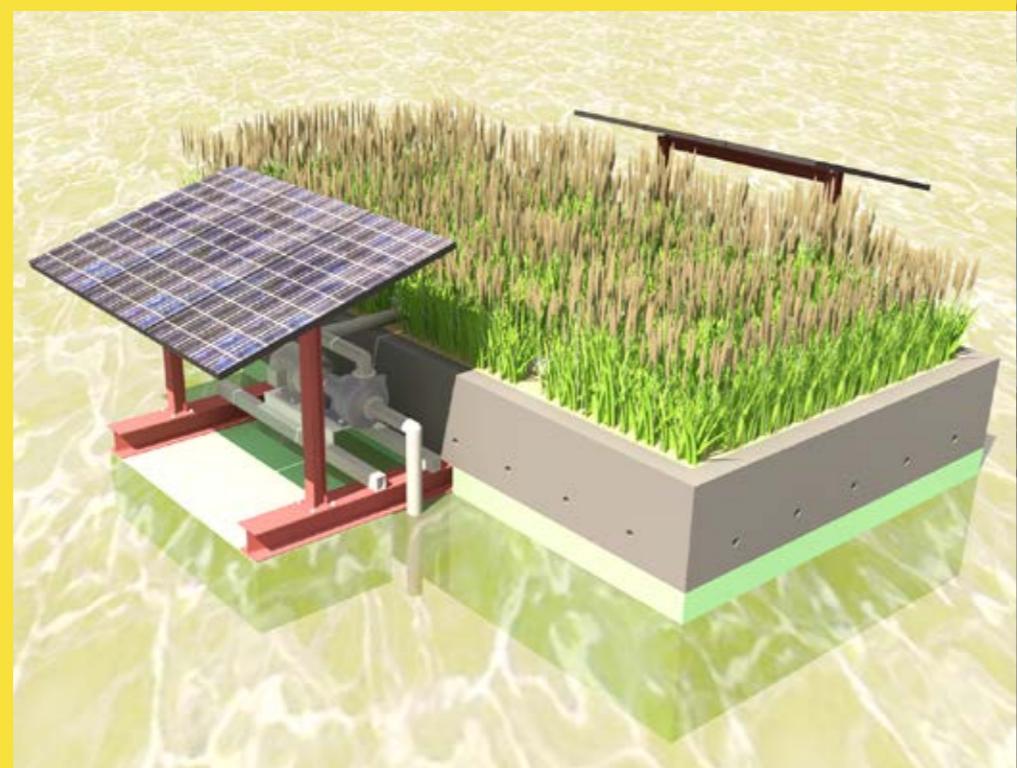
Thanks to that experience the company has been able to respond nimbly to the latest developments in the market. "Customers are becoming more and more skilful and increasingly want to build things themselves. We play into



Jonas Pelgröm

WETLANTEC KEEPS UP WITH THE TIMES WITH A D.I.Y. KIT

do it yourself wastewater treatment



that by offering a do-it-yourself water treatment facility. We recently supplied one to a neighbourhood in Almere. It's now up and running.

In fact, I delivered four more today (19 April)", Pelgröm says. "The kit is very complete. All the necessary materials are in it, such as pipes cut to size and even tie-wraps and tape. In addition, we supply a construction diagram with it. The only thing the purchaser still has

to do is hire an excavator. Then they're often finished in a day and a half. A big advantage of this system is that the purchase price is lower than if the customer were to purchase everything separately, because we buy in large quantities. That means we can charge a fraction of the price for services like such cutting parts to size and making up the construction diagram. So it's a win-win situation."



Natural Processes

The system works as follows: wastewater from, for instance, a house is purified in six days through all kinds of natural processes. Using, among other things, plants and an advanced sand filter (helophyte filter). In the Netherlands, reeds or willows are used for that.

"The nice thing about using willows is that you can prune them and use the

trimmings, for example, for making baskets or for the fireplace", Pelgröm explains.

With 2,200 completed projects behind them, it's hard for Pelgröm to pick a favourite. "We've completed so many great projects. We deliver about a hundred systems a year. Recently we finished a treatment system for an entire neighbourhood in Limburg. What made

that neighbourhood so unique was that it was very near the city sewerage system, but chose to work with our system for sustainability reasons. You see, the law actually requires you to be hooked up to the sewerage system if you're within 40 metres of the city sewers. How exactly they got around that I don't know. They probably did it with a tailored permit. That shows you how flexible the government can be when it comes to sustainability."

Coup

The company has completed other unusual projects too, the project leader says. "We created a water treatment system on the roof of Expo 2000 in Hannover. And last year we had the opportunity to create a purifying courtyard garden on the roof of the municipal building of Venlo. We're also active in Brazil and Bangladesh. You have to work with other plants there, because the climate is so different. In Brazil, for example, it never freezes. We've also been active in Turkey, but since the coup that is not safe anymore. I was working in Bursa when there was an attack on police officers in Istanbul. If you want to keep doing business in a country like that, a job really has to be lucrative, so you can also take the necessary safety precautions."

And the future? On that, Wetlantec has a pretty clear picture. "We're working on optimizing our systems. Normally, they take up something like three square metres per person in a household, but thanks to the latest developments that is already being reduced by half. In addition, we're going to focus on a combined set-up for recovering nutrients like phosphate. Right now we are mainly involved in the bit after the water has been contaminated, but five years from now, I see Wetlantec offering a complete sanitation cycle: from drinking water use to recovery on a large scale."

www.wetlantec.com

THE WATER TECHNOLOGY INNOVATION CHAIN

The WaterCampus brings together a complete chain of innovation for water technology, from first idea, research, specialized laboratories, various demo-sites, launching customers to commercial international applications by commercial companies. Indeed from knowledge to business. It is driven by the idea that technological development and innovation is needed to develop new markets and create new business opportunities.





Vink was established in 1954 and is currently divided into a number of market-oriented groups serving the whole world. Among these are Technical Plastics, Vink Lighting, 3D Printing and Signs & Graphics. The Piping Systems division is under the leadership of Leo Gerritsen. He's worked at the multi-faceted Vink for more than thirty years, gaining experience in a variety of divisions. Of Gerritsen it can certainly be said that he has a passion for plastic. "It's just a fantastic product. Plastic is clean, light and so much innovation in it is possible."

Attractive

Through its Water Alliance membership, Vink Piping Systems wants to demonstrate that in the world of water too, anything is possible with plastic. Whether the subject at hand is wastewater, process water or drinking water. Thanks to a number of special characteristics of plastic, such as its extremely high chemical durability, good insulation, sustainability, workability and corrosion resistance. That makes plastic an attractive alternative to traditional materials. "Even the very best kinds of stainless steel."

Sharing knowledge

Gerritsen is looking forward to encounters with other Water Alliance members, for example, at conferences. "We've gathered a lot of knowledge and experience during the past sixty years. We don't want to keep that all to ourselves. We're happy to share with others. Informing and advising is something we do a lot of and enjoy. It also lets us showcase the success of plastic, because we've had the pleasure of implementing some great projects, in the Netherlands and abroad. Of course, we can also supply different kinds

of all-in solutions and resolve issues that other members are dealing with using applications of plastic. From PVC elbows and PVDF valves to extrusion welding machines and ECTFE tubing.

Hydroclick

In the field of water treatment, Vink Piping Systems is a prominent player, thanks in part to its longstanding collaboration with partners like AGRU, +GF+, Simona and ASV Stübbe. They work continuously on innovations together. For example, for the treated water storage basins of water companies or the tanks used in, for instance, hospitals and water towers, to ensure a continuous supply of drinking water during times of peak demand. "Clean drinking water is a necessity of life", says Gerritsen. "Cement rot is a real danger in a lot of the older treated water tanks. Hydroclick, which we developed in partnership with AGRU, in Austria, is a good solution in such a case. This re-lining system uses polyethylene and is made specifically for storage of drinking water."

DWP 2

A variety of actors on the international water scene have benefited from the features of the plastic applications produced by Vink Piping Systems. Work is currently being done for Evides Industrial Water in Rotterdam on a second demi water facility to supply process water to the Botlek, Europort and Maasvlakte 1 and 2 industrial areas. This Demi Water Plant 2 (DWP) can produce 800 m³ of demi water per hour. "We offer tailored service every time, because each customer is different", says Gerritsen. "We attach a lot of value to that personal contact. The world is digitalizing at a fast pace, but the human element remains important to us."

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From left to right: Ja'Farsidik Bin Muhammad (Malaysia), Kalyanashish Das (India), Jackline Wanjuri Muturi (Kenya), Hein Molenkamp (Water Alliance) Dave Renkema (Solteq Energy), Olga Sójka (DWP), Isaac Monney (Ghana), Michel Verlaan (DWP), Hosein Tavakoli (Iran), Mohamed Omar Makram (Egypt), Jouke Smid (Water Alliance), Daniel Rodríguez (Colombia), Jason James Mingo (South Africa), Maurits Berger (RVO)

On Monday, 10 April, Water Alliance received eight 'high potentials' from various countries at the WaterCampus. These talented professionals were scouting the Dutch market for solutions to water-related challenges in their home countries.

High potentials are promising talents, including engineers, doctors and government employees. The visitors came from very different parts of the

world, each facing its own set of water-related issues: Malaysia, India, Kenya, South Africa, Colombia, Ghana, Egypt and Iran. The central theme of their mission was drinking water, wastewater and sanitation.

After a reception at the WaterCampus's Johannes de Doper Business Centre, Water Alliance Managing Director Hein Molenkamp gave a presentation on innovative and sustainable Dutch water technology. He also described the WaterCampus' structure and what it can do for the water technology sector.

Potential relationships

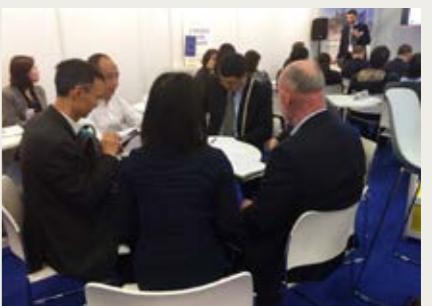
First came the general presentations. Afterwards, two Water Alliance members, Solteq Energy and Dutch Water Partners (DWP), were given the opportunity to pitch their products and technologies for solving issues faced by the high potentials' home countries. The visitors immediately expressed strong interest, and many business cards were exchanged. Following the morning programme at the WaterCampus, it was time to move on to Wetsus. The high potentials toured the facilities and spoke with

Matchmaking Wasser Berlin draws nearly 100 participants

In collaboration with the Water Alliance and the Netherlands Enterprise Agency (RVO), Enterprise Europe Network (EEN) organized targeted matchmaking sessions during the Wasser Berlin exhibition on 28 and 29 March.

"Wasser Berlin is an excellent trade fair for finding partners for the German market. The matchmaking sessions helped generate focused exchanges with potential business partners in Germany", says Ytsen van der Velde of Springwater Purification Netherlands.

Wasser Berlin is an ideal opportunity to enter the German market or explore it from close up. "Matchmaking has a good chance of resulting in concrete business deals or partnerships", says Janine Kaya of the Netherlands Enterprise Agency (RVO). "That is why many companies are extremely positive about the network's services." A total of 94 companies from twenty different countries took part in the sessions in Berlin, including six Dutch participants. EEN organizes matchmaking sessions on a regular basis. Please contact your local EEN branch if you have any questions.



MAGPIE POLYMERS: A PRECIOUS ENTERPRISE

The company behind the winner of the European WaterCampus Business Challenge

"The technology of Magpie Polymers started out in 2007 kind of like a little Friday afternoon experiment, that didn't produce quite the right results", says the of-origin Dutch Steve van Zutphen. Later, in 2011, he established Magpie Polymers, after some further research. The company is based in Saint Pierre Les Nemours, south-east of Paris. It has since become an established name in France and beyond, in association with the purification of industrial wastewater, particularly when that wastewater contains precious metals. Early this year the company won the European WaterCampus Business Challenge.

As for the unexpected results of that little experiment in 2007, Van Zutphen tells the story: "I was trying to make small, soluble phosphines, to use for building catalysts. Unfortunately, I ended up with insoluble junk in my jars, until I went to analyse them and found out they were actually interesting polymers. After that little experiment in 2007, I went to work at the US company Corning until 2010, on completely different topics. From the French university we presented Magpie's technology a number of times to companies, but quickly realized it wasn't mature enough yet. That's why in 2010 I decided to leave Corning and start out for myself, to develop the technology further. That became Magpie Polymers in 2011."



From left to right: Gerwin Steen, Therica Sinclair, Daniel Colunga, Prashant Agrawal, Brahzil Raza, Juan Alvares, Nora Mouakka, Marissa de Boer, Isabelle Palmgren, Joost Jacobi, Zouhair Chakir, Dennis van de Herberg and Yvonne de Rijck

In a call posted on YouTube in 2011 we can get a glimpse of the plans Van Zutphen had at the time: the search for investors and the goal of implementing the technology at large wastewater treatment plants. What has come of those plans now, some six years later? "A business plan that you write on day two and is still valid five years later doesn't seem realistic to me. Not in the world of start-ups. It always takes longer than expected. It is always more difficult or more expensive. Still, we have a product developed now, and multiple applications of it are up and operating on a large scale, so we have accomplished a lot of things. Our main competitors are large chemical companies with relatively old technologies that have been out on the market for a long time already. Our customers are also large companies, that operate in fairly static markets. They are not immediately open to

disruptive [read 'alternative thinking', Ed.] technology."

European WaterCampus Business Challenge
Magpie is right on the edge of the water technology industry, as we learn. "We are involved in industrial streams that contain a lot of precious metals, like gold, platinum and palladium", Van Zutphen explains. "Think, for instance, of electronics manufacturers and companies that process precious metals. They often make use of acid solutions, in which a portion of the precious metals is lost. We make that process more efficient using our filtration resin. This resin can selectively extract precious metals from those wastewater streams. The resin absorbs the precious metals, while the water continues to flow through the process. The technology is from the postdoc research I did at the French university

Ecole Polytechnique in Paris, so the patents are in their ownership. That is why Magpie Polymers is in France."

As a company, then, you have a rock solid idea and a product that works. But there's still a lot more that has to be done in branding. The 2017 European WaterCampus Business Challenge (EWCBC), in Leeuwarden in March, provided an opportunity for that. A week-long programme in which ten start-ups and people with a good idea constructed a business case. Ultimately, one participant wins the Challenge and gets extra exposure for their idea.

The four-member jury, made up of Lute Broens (BiAqua), Leon Korving (Wetsus), Arjen Schol (Flinc) and Koen Oldenburger (Rabobank) had this to say about the winner: "As jury we were impressed with the specialist knowledge of Magpie Polymers. From

the pitch, it was obvious that the team knew exactly what was going on in the sector and the obstacles still to be overcome to refine the product further and make it more profitable. Of all the entries, the product Magpie Polymers was the farthest developed and most market-ready. In this company there is already turnover, and there are customers. That convinced us." Participants came from many different countries, including France, Morocco, Sweden and the Netherlands.

The Business Challenge was actually an outgrowth of the EIT Raw Materials Resourcing Water Programme, in which Magpie Polymers participates. "EIT Raw Materials is there for enterprises working to extract raw materials from water or wastewater, to help them reduce the time to market [the time between product development and market introduction, Ed.]", says Marco de Graaff, project leader at Wetsus. "In partnership with the WaterCampus, a total budget of €300,000 is available to help these start-ups. Magpie Polymers is one of the three contenders for a boost", says De Graaff.

"The amount of the prize they get depends on the phase they are in. They can spend it on housing at the WaterCampus, research at Wetsus and business support from the Water Alliance." That Magpie won the EWCBC was no surprise to De Graaff. "They are in a really good phase, with a tremendously strong technology with a whole lot of potential. Also, the jury was made up mainly of investors. Magpie already has a product that has proven itself, so the risk is small. That's something a jury with a profile like this can especially appreciate."

Leeuwarden as hub
But what use does a French company really have for prize check that can be spent only in the Netherlands? "The WaterCampus in Leeuwarden is a key place in Europe for water research", says

Van Zutphen. "The Business Challenge is a great chance to show what you've got and get extra exposure for your product. If there are ten contenders and you win, then of course, that is huge. The most important thing is the support that follows after winning the Challenge. Hopefully we can get our new product into the market quicker this way."

Scaling up

"The great thing about this business, for me, is when you see a product scaling up", the businessman emphasizes. "When you see your idea, that you figured out in a lab, growing into a product that more and more companies use. Scaling up chemistry is really something that drives me. There are ten of us now, but we are on an aggressive growth track. We are looking hard for additional investments. With the current turn-over, we just about break even. To really grow we need extra investors."

Van Zutphen already knows what he is going to do as soon as that extra investment is found: "We want to make our product more elegant, and that's where the EIT Raw Materials programme comes in. Right now we have some five industrial applications. The resins we use are incinerated once they are saturated, to get the precious metals back. We are working to improve that process, looking for cleaner and quicker ways to get from contaminated water to pure metal. In addition, we want to widen our scope to other metals, especially the 'rare earth metals', instead of only gold, platinum and palladium."



Steve van Zutphen

'It felt like home turf'

**Matthijs Plijnaar, EEN
Advisor for the Enterprise
Europe Network North
Netherlands (in which the
Water Alliance participates)
was in Lithuania in April.
What was he doing there?**

You went to Lithuania in April this year. Why?

There was a gathering there of Enterprise Europe Network contact persons. This Network, for which the Water Alliance is one of the contact organizations, helps entrepreneurs in Europe with their internationalization. For example, a company, that is looking for a particular technology to further develop one of its innovations and can't find that technology in its own network can put the question out to the Enterprise Europe Network for free. Also, companies that are looking for a distributor, or maybe want information about laws and regulations in a certain European country, they can also come to us.

And, the reason for this particular trip? The purpose of the Lithuania meeting was to link the supply and demand of North Netherlands companies with the supply and demand of companies from Scandinavia, the Baltic region, the United Kingdom and Ireland.

Was it a good trip?

This was my fifth time now in Lithuania, so it really felt like "home turf". The gathering was very productive, and I established a fair number of contacts that could be of use to North Netherlands businesses. That link back still needs to be made. So that will happen after this WaterProof is already out.

Lithuania? What's most special about it?

Lithuania, and then particularly the capital Vilnius, has a rich history, from a few centuries back to the still tangible Soviet domination. But, like everywhere you go, it's the people who make the difference. Lithuanians are very

welcoming and helpful and, like the Dutch, they are quick to accept new technologies.

What is an interesting example of life there, or doing business, or ethics? Lithuanians are quick to adopt new technologies. To me, for example, it was nice to see how many electric and hybrid cars are on the roads there, even though it's not actively stimulated by the government. Also, Lithuanians are hospitable and proud. We in the Netherlands could learn a lesson from them in hospitality.



Interested in how the Enterprise Europe Network can support you? Get in touch with Matthijs Plijnaar at m.plijnaar@wateralliance.nl or go to een-north.nl

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