

AQUATECH
**INNOVATION
AWARD**
2017

**AQUATECH
AMSTERDAM**



**JURY
REPORT**

AQUATECH INNOVATION AWARD 2017

A SHOWCASE FOR THE WATER SOLUTIONS OF THE FUTURE

The Aquatech Innovation Award exists to give the latest and most promising water technologies the exposure and acknowledgement they deserve. Communities and businesses all around the world face pressing challenges as far as water is concerned. It is through innovation that new, workable solutions to these challenges can be found.

'The water scarcity crisis is an urgent issue and is already having an impact,' comments Award jury chairman Prof. Cees Buisman, Scientific Director of Wetsus, European centre of excellence for sustainable water technology. 'It is clear that with existing technology, it is almost impossible to solve this. We need new technologies, and therefore we need innovation,' he says.

The Aquatech Innovation Award aims to support this process by offering a high-profile showcase for promising options at the time of the Amsterdam International Water Week and Aquatech Amsterdam exhibition. 'I am an innovation person myself,' continues Buisman. 'The time between Awards goes quickly, yet every two years we get to see that the work to find new answers goes on and on,' he says.

The 2017 edition of the Award marks the latest successful contribution in this respect. It has set a new record in terms of the number of entries received. There was a total of 78 entries, from which 14 were selected

by the independent jury as nominees for the the sought-after first place. These were high quality entries too. 'The jury needed a lot of discussion this year to make the selection as the top 20% of entries were really strong,' says Buisman.

AND THE OVERALL WINNER IS...

The overall winner to emerge from this strong group of entrants is Cellvation, a highly innovative Dutch technology that can recover toilet paper cellulose fibres at sewage treatment plants and produce a marketable cellulose product suitable for use in applications such as road construction.

'This is a very good example of resource recovery and is a perfect example of the circular economy in action,' comments Buisman.

The winning entry from company CirTec B.V. was developed in partnership with KNN Cellulose and was also placed first in the category 'Waste water treatment'. The benefits

cited include a reduction in energy and chemical costs for sewage treatment, along with a reduction in the amount of sludge that is produced. Cellulose is used as a technical product in applications such as road construction, offering an outlet for the marketable product derived from the Cellvation process. 'It also means you have to cut down fewer trees, and the enormous amount of energy and chemicals that are used to convert a tree into cellulose can also all be saved,' says Buisman.

Entries to Award are assessed against three criteria: innovation, feasibility, and sustainability. Cellvation scored highly against all three. In terms of feasibility, Buisman notes that two full-scale plants are in operation, and that use of the final product in road building has been demonstrated. 'The whole chain has been shown, so we believe it is completely feasible,' he says. 'The innovation is that they have connected all these steps together, and not only taken the cellulose out of water, but processed it so it can be reused.'

Aquatech Innovation Award 2017 overall winner

Cellvation cellulose recovery, from CirTec B.V., the Netherlands

The overall winner of the Aquatech Innovation Award 2017 is the Cellvation cellulose recovery technology from Dutch company CirTec B.V., developed in cooperation with KNN Cellulose. This highly innovative Dutch technology is designed for installation at sewage treatment plants, where it can recover toilet paper cellulose fibres and produce a marketable cellulose product. By offering benefits for the sewage plant operator



and helping reduce the demand for new cellulose, it responds to the need for a move to a circular economy.

AQUATECH INNOVATION AWARD 2017 – THE RESULTS

Nominees in the category: Not yet to market

- **Category winner: Continuous Counterflow Adsorber water treatment, Blücher GmbH**
- Bi-directional tidal turbine, Pentair Fairbanks Nijhuis
- Hydraloop residential water system, Hydraloop International B.V.

Nominees in the category: Process control technology & process automation

- **Category winner: Satellite remote sensing leak detection, Utilis**
- Easychem TOX Early Warning water analyser, Systea S.p.A.
- Sand-Cycle sand filter monitor, Brightwork B.V.

Nominees in the category: Transport & storage

- **Category winner: Picoturbine water network energy recovery, Technoturbines S.L.**
- Flygt Concertor intelligent wastewater pumping, Xylem Water Solutions Nederland B.V.

Nominees in the category: Waste water treatment

- **Category winner: Cellvation cellulose recovery, CirTec B.V.**
- Genius total manure solution, Nijhuis Industries
- Curly membrane Membrane Aerated Biofilm Reactor, OxyMem

Nominees in the category: Water treatment (drinking water, clean water, including point of use)

- **Category winner: Closed Circuit Reverse Osmosis treatment technology, Desalitech via Lenntech B.V.**
- IroxFlotation dissolved iron removal, SansOx Ltd
- Sheaf Filter chemical-free thread filtration, Maagan Filtration

Special mention:

- **DaaS (Data as a Service) for Water Quality Monitoring, s::can Messtechnik GmbH**

HOW THE ENTRIES WERE JUDGED

Entries to the Aquatech Innovation Award 2017 were judged in five categories: Innovation – not yet to market; Process control & process automation; Transport & storage; Waste water treatment; Water treatment (drinking water, clean water, including point of use). An independent jury

evaluated the entries based on: originality (50%); practicality (technical, economic, feasibility – 25%); and sustainability (environment, security, energy and efficiency – 25%). The jury selected one winner from each category and then chose the overall winner from these category winners.



THE 2017 JURY

- Prof.dr.ir. C.J.N. Buisman (*Wetsus – Chairman of the Jury*)
- Ir. C. Uijterlinde (*Stowa*)
- Ir. P. Kamp (*former CTO at PWN Technologies*)
- W.F. Volmer BSc (*Nmi Certin BV*)
- Prof. M. Kennedy, PhD (*UNESCO-IHE Institute for Water Technology*)
- M. Kruisweg (*Akzo Nobel*)
- Prof. dr. ir. A.J.H. Janssen (*Shell*)
- H. Gastkemper (*Stichting RIONED*)

Supporting AMREF Flying Doctors
Aquatech Amsterdam donates the registration fees received from entrants to the Aquatech Innovation Award to AMREF Flying Doctors. This will support a project AMREF Flying Doctors started in January 2016 in Kilindi, a remote area in Tanzania. The project aims to: reduce Female Genital Cutting (FGM) among girls in the Kilindi district; reduce water, hygiene and sanitation-related diseases

in communities by increasing access to clean and safe water and reliable sanitation facilities in households and schools; and improve knowledge, attitudes and practices of communities to prevent water and sanitation related diseases.



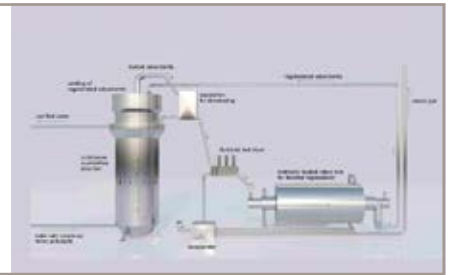
THE JURY'S VERDICTS ON THE CATEGORY WINNERS

CATEGORY WINNER

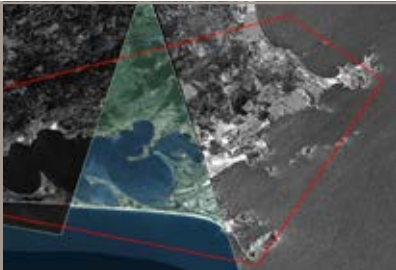
NOT-YET-TO-MARKET

Continuous Counterflow Adsorber water treatment, Blücher GmbH

This technology has already been used in the oil industry and is now going to be applied to deal with pressing issues such as pesticides and pharmaceutical residues. The jury felt this has the potential to be a very effective technology for the future.



CATEGORY WINNER



PROCESS CONTROL TECHNOLOGY & PROCESS AUTOMATION

Satellite remote sensing leak detection, Utilis

Growing pressure on water resources is adding to pressure to tackle leakage from water networks. The jury was impressed that space technology is now going to be used to help solve the challenge of water scarcity.

CATEGORY WINNER

TRANSPORT & STORAGE

Picoturbine water network energy recovery, Technoturbines S.L.

The jury was impressed by the way that such a simple technology can make use of energy in pipelines that normally goes to waste and power sensors, opening up enormous possibilities to monitor water quality across a distribution network.



CATEGORY WINNER



WASTE WATER TREATMENT

Cellvation cellulose recovery, CirTec B.V.

This technology gives cellulose that no longer has a function in the paper industry a new function in the road industry, for example. This is a very good example of resource recovery and is a perfect example of the circular economy in action.

CATEGORY WINNER

WATER TREATMENT (DRINKING WATER, CLEAN WATER, INCLUDING POINT OF USE)

Closed Circuit Reverse Osmosis treatment technology, Desalitech via Lenntech B.V.

This technology offers the opportunity to overcome issues around the need to use chemicals to prevent scaling in reverse osmosis. The jury sees the potential for this sustainable technology to be used in larger applications.



THE AQUATECH INNOVATION AWARD
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