

AQUATECH INNOVATION AWARD 2021

AQUA
TECH
 AMSTERDAM



JURY REPORT

CELEBRATING INNOVATORS & INNOVATION IN WATER

Innovations continue to be launched and thrive in the water sector, despite a challenging two years from the pandemic. Smart technologies were a big focus in the 2021 Aquatech Innovation Award, which showcase notable technology developments to create a real impact across the water cycle.

“One of the most important trends we witnessed in this year’s Innovation Award entries was the availability and adoption of smart technologies,” commented jury chairman Professor Cees Buisman, Scientific Director of Wetsus, the European centre of excellence for sustainable water technology.

“I think in almost all categories, there were innovations using sensors. From robots to data loggers, there were demonstrations of sensor innovations and integrations across the spectrum of water technologies. These developments have great potential to help water be part of a circular economy and help to solve the mega-challenges of water scarcity and the slow toxification of the environment.”

The Aquatech Innovation Award recognises world-class innovation and technologies that have the potential to move the global water market forward. A total of 12 innovative technologies were selected from over 50 entries by an expert jury. Category winners and the overall winner of the Aquatech Innovation Award 2021 were revealed at the opening ceremony of Aquatech Amsterdam. Buisman said the high level and the number of innovations provided real hope for the water sector.

“We’ve had almost two years of the coronavirus crisis, yet we still received more than 50 new entries,” added Buisman. “We were impressed. We understood that many companies faced challenges and had to stop innovation. Despite these troubles, we still received so many innovations. This is a positive sign of how innovative the water sector continues to be. It’s remarkable how engaged so many people are to keep innovating to solve water challenges.”

AND THE OVERALL WINNER IS...

Autonomic Inspection Robot – Submerge

The overall winner of the Aquatech Innovation Award was the Autonomic Inspection Robot – Submerge. The autonomous robot can help utilities map the infrastructure and detect faults in drinking water pipes.

“In previous editions, many award entries are improvements of long-term technologies that we have seen before,” said Buisman enthusiastically. “However, this year, there were many remarkably new innovations. One notable innovation was the Submerge robot that can enter pipes. The unique element about this innovation is that the robot can manoeuvre around corners, which is special because normally robots travel forwards in straight lines.”

The development is a result of multiple stakeholders, including Vitens, Brabant Water and Evides.

“This project was also developed together with end-users, linking the public and private sectors by bringing together technology companies and water utilities,” added Buisman. “As a result, the robot has been carefully thought through with multiple functionalities.

“For example, it can help detect leaks, corruptions and even be used to map pipe networks to create a digital twin. It’s very important for piping companies to know exactly where the pipes are located, which isn’t always the case at the moment.”



AQUATECH INNOVATION AWARD 2021 – THE RESULTS

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

- BIO-310 UV LED Reactor - Typhon Treatment Systems Ltd.
- DuPont™ B-Free™ - DuPont Water Solutions
- Droople iLink – Droople



Nominees in the category: Green Chemicals for Water

- OARP Omya Advanced Remineralization Process - Omya International AG
- Wasser 3.0 detect | remove | reuse - Wasser 3.0 gGmbH



Nominees in the category: Transport and Process & Control

- GoAigua SARS Analytics - Idrica
- Hawle.Live KEY - Hawle Service GmbH

Nominees in the category: Wastewater Treatment

- CLC for decentralised water provision - Nijhuis Saur Industries & Semilla Sanitation
- Floating Layer Remover - Rolapac BV
- SONIXED - Hydro Volta



Nominees in the category: Innovation - not yet to market

- Autonomic Inspection Robot - Submerge
- Water LOC Series - Clearwater Sensors Ltd.

HOW THE ENTRIES WERE JUDGED

Entries to the Aquatech Innovation Award 2021 were judged in five categories: Innovation – not yet to market; Transport and Process & Control; Wastewater treatment; Water supply (drinking water, clean water, including point of use/entry); Green Chemicals for Water. An independent jury evaluated the

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



THE 2021 JURY

- Dr. Ir. C.J.N. Buisman (Wetsus – Chairman of the Jury)
- H.J. Gastkemper (Stichting RIONED)
- Ir. A.J.H. Janssen (Shell Global Solutions)
- P. Kamp (Retired – formerly PWN Technologies)
- M. Kennedy, PhD (UNESCO-IHE Institute for Water Technology)
- C.A. Uijterlinde (Stowa)
- Dr. Ir. W. van der Ven EMBA (Grundfos Holding A/S)
- Dr. Ir. W.M. de Vos (University of Twente)
- Drs. J.S. Vrouwenvelder, PhD (KAUST - King Abdullah University of Science and Technology).

Supporting AMREF Flying Doctors

WaterStarters: Creating sustainable water solutions in Kenya

Aquatech Amsterdam donates the registration fees received from entrants to the Aquatech Innovation Award to health organization AMREF Flying Doctors. This program creates sustainable water solutions for rural and peri-urban communities in Kenya. In Kenya, 1 out of 3 people drink water from unprotected sources leading to waterborne diseases such as diarrhea.

In rural households, girls and women are 6 times more likely to fetch water than men, walking up to 12 km per day. Amref believes that every human being should have access to safe and affordable drinking and household water and that no one should suffer from waterborne diseases.



THE JURY'S VERDICTS ON THE CATEGORY WINNERS

CATEGORY WINNER

NOT-YET-TO-MARKET

Autonomic Inspection Robot - Submerge

SubMerge autonomous inspection robot changes drinking water pipe asset management radically. The robot crawls flexibly through water pipes. It takes pictures, measures wall thickness, determines leakages and calculates coordinates. Reaching a base station, the robot is recharged, exchanges its data and proceeds with a new mission. The development is a result of multiple stakeholders, including Vitens, Brabantwater and Evides. Also the overall winner, the jury noted the robot's ability to wirelessly navigate corners as particularly "innovative".



CATEGORY WINNER



TRANSPORT AND PROCESS & CONTROL

Hawle.Live KEY - Hawle Service GmbH

This development from Hawle Service GmbH can automatically measure the torsion of valves to inform operators whether they are open or closed. The jury noted the ability of this development to "take away a lot of hassle from valve operators", saying it was very simple yet "offers so much" to help free up time from utility operators.

CATEGORY WINNER

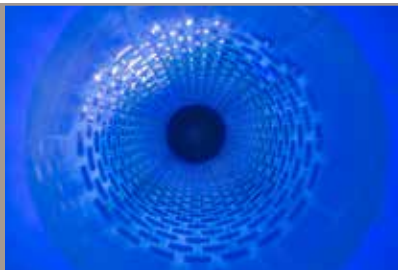
WASTEWATER TREATMENT

CLC for decentralised water provision - Nijhuis Saur Industries & Semilla Sanitation

The Closed Loop Concept (CLC) aims to close local water loops and provide decentralised solutions without any central (waste)water treatment plant for residential areas. The CLC consists of four treatment parts: rainwater, grey water, yellow water, and black water. It is a 'match-making' concept, buffering water during rainfall which will be used during periods of drought. The jury was impressed by the "courage" of the Nijhuis Saur team to go through the trouble of setting up a decentralised sanitation project. The jury said the integrated, decentralised sanitation project is "very impressive". Sustainable with 90 per cent claimed less energy use.



CATEGORY WINNER



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

BIO-310 UV LED Reactor - Typhon Treatment Systems Ltd

Typhon's USEPA UVDGM validated BIO-310 reactor is a municipal scale Ultraviolet (UV) LED system. Typhon has collaborated with United Utilities in the UK to deliver the world's largest UV LED for drinking water disinfection installation, with the capacity to treat nearly 30,000m³/day. The jury praised the "innovative reactor design" that has "enormous promise" to help with the scaling of UV LED systems.

CATEGORY WINNER

GREEN CHEMICALS FOR WATER

Wasser 3.0 detect | remove | reuse - Wasser 3.0 gGmbH

This is a new category in the awards, which the jury felt was necessary to include. Wasser 3.0 enables new standards in (waste)water treatment by combining high-tech materials & low-tech processes. The focus is on flexible, cost- and energy-efficient solutions for the removal of microplastics. This also includes continuous detection and reuse, leading to ECO³: saving water, energy and costs, reducing waste and improving water quality. The jury said: "From a chemistry point of view, this is so fascinating for our professors that they thought this should be the winner. You can remove very small particles in a very efficient way."



THE AQUATECH INNOVATION AWARD IS ORGANISED BY

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