

# EcoCnews

Autumn 2021

**Turnkey solutions for MedTech manufacturers: everything from a single source.**



In the past year, Ecoclean expanded its activities in fast-growing future markets such as e-mobility and MedTech. For example, the SBS Ecoclean Group has combined various technologies of the UCM and Ecoclean brands – and is since mid-2021 able to offer the MedTech industry complete turnkey solutions in the precision cleaning business that go far beyond individual production steps.

Fabio Cordaro, Global Business Development Manager explains. "By intelligently combining the offerings of two Group brands, we can cover the entire cleaning process needs of the MedTech industry – from deburring and pre-cleaning after CNC production, intermediate cleaning after grinding and polishing, final cleaning and passivation after final inspection, spray cleaning for transfer to the cleanroom, to cleanroom and packaging solutions. Everything from a single source! In this way, we provide noticeable relief for our customers."

## Solutions for highly regulated markets

In addition to cleaning, the SBS Ecoclean Group offers accompanying services. Manufacturers of medical technology, for example, are confronted with a multitude of new regulations and standards every day. Depending on the market, country-specific legislation in different languages or regulations that affect several business areas or product lines have to be taken into account. This is how we support the MedTech industry in adapting the cleaning process to new regulations: Fabio Cordaro, Global Business Development Manager explains: "As a global provider of turnkey solutions, SBS Ecoclean Group also offers qualified compliance support and a recalibration service to adapt production to the latest requirements. And always in compliance with the latest MDR and FDA regulations. Because our customers worldwide rely on the comprehensive know-how and reliability of our company's services."

## Traceability workflow

For orthopaedic parts, prostheses, medical instruments and dental components, for example, it is important that the cleaned products can be continuously traced. With the help of SBS Ecoclean Group, manufacturers can easily identify

their medical devices through process data collection and audit trails, continuously track them and document this process.

Rainer Straub, Vice President Sales & Customer Service comments: "We are using the combined strengths of the SBS Ecoclean Group to further expand our portfolio – not only in the MedTech sector. By consistently focusing our activities on the needs of our customers, we can open up new markets as a Group."

To learn more about the broad and innovative portfolio for MedTech visit our [website](#) or contact our specialist: [Fabio Cordaro](#).

## Innovative cleaning processes from the knowledge network of the SBS Ecoclean Group



"Today, absolute cleanliness is required for many innovative processes and industries. This cannot be achieved with wet cleaning alone," explains Norbert Rischer, Director Application. "Thanks to the great creativity, specific skills and broad knowledge of our employees in the Group, we have developed innovative cleaning processes for the highest requirements."

### EcoCore and EcoCwave: 2 cleaning processes - 1 system

One example is our combined cleaning process, which effectively remove filmic residues - residues of processing and preservation media, release agents, silicones and other production aids or even fingerprints: While with EcoCore a solvent-based wet cleaning is carried out first, with EcoCwave an aqueous cleaning solution is used in the beginning. In both processes, this first stage is followed by plasma cleaning for ultra-fine degreasing:

- In the first step, a wet cleaning is carried out, during which the parts are dried under vacuum.
- In the second step, plasma cleaning takes place: Here, the pressure in the working chamber is lowered to below one millibar, the process gas (e.g., filtered room air or oxygen) is introduced and the plasma is ignited. In the vacuum, the excitation of the process gas creates energy-rich ions and free electrons as well as other reactive particles that form the plasma. Contaminants such as residues of grease and oil on the component surface are chemically attacked and converted into volatile compounds.
- At the same time, the UV radiation of the plasma unfolds a cleaning effect. For example, long-chain hydrocarbon compounds are broken. The gaseous degradation products of the plasma cleaning process are extracted from the working chamber.

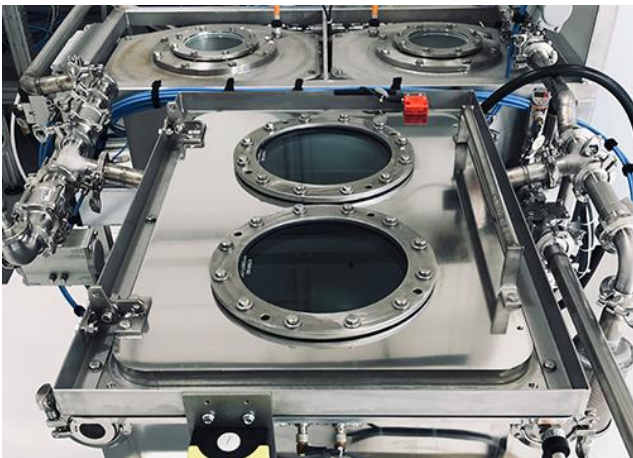
### EcoCore and EcoCwave: The fast, effective and economical way to filmic cleanliness

Norbert Rischer, Director Application explains: "By combining classic wet cleaning with modern plasma treatment, we made completely new material combinations and processes possible with EcoCore and EcoCwave. And our system

offers manufacturers many more advantages: high flexibility of the system in use, reduced process times, low investment and operating costs and a small ecological footprint."

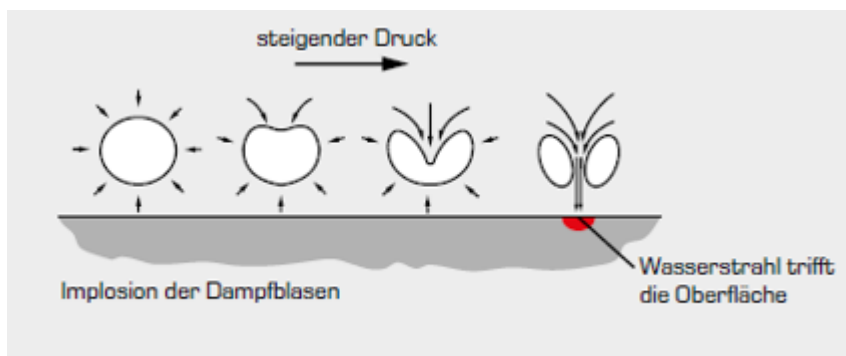
## PPC - Pulsated Pressure Cleaning: new cleanliness requirements demand integrated solutions

Another development of the SBS Ecoclean Group is PPC - Pulsated Pressure Cleaning: When cleaning complex component geometries, for example 3D-printed bodies, with capillary structures, hollow bodies or different materials, ultrasonic cleaning reaches its limits. In order to meet the ever-increasing cleaning requirements in medical technology, the high-purity industry and optics, the PPC was developed in teamwork between our competence centres in Filderstadt and Monschau: Filderstadt focused on aqueous and solvent chamber systems to optimise the process and Monschau on CLP immersion systems.



## PPC - Pulsated Pressure Cleaning: Two modes of action for significantly improved component cleaning

In both types of system, a component to be cleaned is placed in a process chamber filled with a liquid medium and tightly sealed. The PPC process now generates two different modes of action to clean the components significantly better:



- The air remaining in the chamber is evacuated, creating a negative pressure. This causes the air in the component to expand. If the chamber is now ventilated, the air in the component contracts again and sucks

medium into the component (e.g. capillary structures). This process is repeated cyclically so that these critical areas are cleaned and rinsed where otherwise no liquid medium can reach.

- Another cleaning effect is created by lowering the pressure in the working chamber until steam bubbles form. This boiling process is abruptly stopped by a rapid increase in pressure - up to above the steam pressure. The steam bubbles collapse. When the bubbles form on the surface of the component, the medium is displaced; when the bubble collapses, medium flows to these points and detaches contaminants. This bubble formation also takes place in concealed and shadowed areas, e.g. cavities, boreholes.

With the help of the innovative PPC process, the cycle times for a pressure change can be reduced by 50 %. This enables our customers to meet previously unattainable purity requirements.

Marko Flatten, Product Development Manager comments: "Together in our knowledge network, the SBS Ecoclean Group can develop integrated solutions that meet the new standards of cleanliness. To achieve this, we bring together the creativity, knowledge and unique expertise of our specialists every day."

To learn **more about the EcoCcore**, visit the [product website](#) and read our [flyer](#).

To learn **more about the EcoCwave**, visit the [product website](#) and read our [flyer](#).

To learn **more about PPC**, contact our product expert [Marko Flatten](#).

## A clean solution for every need



One innovation highlight that has gained further momentum in 2021 is the UCMSmartLine. Roger Kohnen, Business Development Manager Precision Cleaning comments: "The manufacturing, joining and coating technologies have changed. At the same time, increasingly strict regulatory requirements must be met in many markets." Medical technology, optics and precision and micro-technology, but also the automotive and supplier industries, increasingly demand reliable methods to meet the high demands for particle and film cleanliness – at competitive prices.

With our modular ultrasonic immersion system UCMSmartLine, we can meet these high standards: With up to nine cleaning and rinsing stages, it offers numerous options for solving individual cleaning tasks with the highest demands on component quality.



## Modular system for many applications



Another plus: the modern modular concept allows highly compact ultrasonic multi-chamber immersion cleaning systems to be realised with three to nine cleaning and rinsing stages for preliminary, intermediate and final cleaning. This means that the system can be individually configured for a wide range of applications and adapted to changing market conditions at any time. Two- and three-stage modules are available for the process steps "cleaning & rinsing" or "cleaning, cleaning & rinsing", which can be combined as desired. With a further module, two-stage fine and precision rinsing processes with cascaded osmosis or demineralised water can be integrated. The ultrasonic cleaning modules, which are heated and equipped with a filter circuit as standard, can also be adapted to a wide variety of applications. The parts are dried by infrared radiant heat, hot air or under vacuum. Depending on the application, these drying technologies can also be used in combination.

## Understanding customer needs

"We always develop our solutions with our customers in mind. Because they always come first for us," explains Manfred Hermanns, Vice President Sales & Customer Service. "With our UCMSmartLine, we have developed a system solution that can easily be adapted to the individual needs of our customers – without going beyond the budget."

## The advantages of the UCMSmartLine at a glance:

- Modular, multi-stage ultrasonic immersion cleaning system for high to highest cleanliness requirements;
- Variable use of mono, twin or multi-frequency ultrasonics;
- Flexible transport system for optimized throughput and gentle part handling;
- Space-saving design with electrical and control technology integrated into each module;
- High-quality machine enclosure protects parts and personnel from contamination and emissions;
- High adaptability through optional subsequent module expansion;
- Process validation by cleaning tests in the SBS Ecoclean Group worldwide test centers;
- Short delivery times & flexible delivery options (in one piece or modular).

To learn **more about UCMSmartLine**, visit the [product website](#) and contact our product expert: [Roger Kohnen](#)  
Our [YouTube video](#) also gives a good overview of the advantages of the UCMSmartLine solutions.

## SBS Ecoclean Group 2021: Meeting new challenges with intelligent, digital solutions



We all need to do more with less – because our resources are limited. To meet this challenge, the SBS Ecoclean Group is focusing on digitalisation with the cloud solution Ecoclean Connect. It is important to make intelligent use of the huge amounts of data that are generated in industrial parts cleaning on the Internet of Things (IoT). The goal: to use the limited resources efficiently and to become more productive overall.

### Cloud as the solution

"Since April 2021, we have been offering with Ecoclean Connect an innovative cloud solution, which is unique in plant engineering worldwide," says Mike Fronmüller, Industry 4.0, "Ecoclean Connect optimises production planning, plant availability, documentation and the connection to higher-level control systems. By reducing manual interfaces, our software solution improves the efficiency and thus also the productivity of cleaning processes – helping our customers to stay ahead of the competition."

### All parameters at a glance

In this process, defined data generated by the machine control system is transmitted via a secure connection to an IoT platform, where it is stored, evaluated, and intelligently integrated using state-of-the-art technologies and infrastructure. Multiple cleaning machines can be integrated into a comprehensive fleet management program. The evaluated and linked information is delivered to the user via a clear dashboard directly on the desktop or tablet and thus supports, for example, production planning in decision-making and quality assurance.

### Choosing more transparency

Mike Fronmüller's, Industry 4.0, conclusion: "With Ecoclean Connect, we offer our customers a software solution that minimises interfaces and manual interventions, ensures a high degree of transparency and enables full connectivity. At the same time, we meet today's high demands for quality, traceability, delivery reliability, flexibility and cost-effectiveness."

For more information, please visit our [website](#).

Our [YouTube video](#) also gives a good overview of the advantages of Ecoclean connect.

## Parts cleaning in the e-mobility sector



The development of electromobility technology presents new challenges for parts cleaning. Today, some cleaning processes are already required to take place during the assembly. One of the reasons for this is particles introduced, for example, by joining processes or purchased parts, which can cause functional problems. In addition, the removal of particulate and non-volatile residues from the ultra-thin materials of cathodes and anodes is essential for bipolar plates. The trend toward bonding also requires greater thin-film and particulate cleanliness of bonding surfaces. Also, new lightweight construction, material and manufacturing solutions require

adapted cleaning processes. This also applies to components in safety systems, such as steering, brakes and ABS.

## Cleaning technologies for the e-mobility sector

For the efficient cleaning of parts, e.g. for gears, brakes and steering systems, our extensive portfolio includes water-based and environmentally compatible solvent-based cleaning systems. Our surface treatment solutions can be used, for example, to activate brake discs before coating to prevent corrosion and reduce particulate emissions, just as weld seams on chassis parts can be cleaned effectively and efficiently. Tailored to the specific requirements and applications of vehicle manufacturers and suppliers, various wet and dry cleaning processes are available, also for combined use in a single system.

## Comprehensive expertise in parts cleaning for the e-mobility sector

Thanks to our many years of experience, our early involvement in e-mobility, and numerous successfully completed projects for OEMs and suppliers around the globe, we have the comprehensive technological know-how to solve the wide range of tasks in the automotive and supplier industry in a demand-oriented, sustainable, and efficient manner. In conjunction with our fully equipped technology centers, we are thus able to carry out cleaning trials for the e-mobility sector on originally soiled parts under near-series conditions to solve any cleaning task. Based on the respective material, component geometry, type of soiling, cleanliness and throughput requirements, we develop and automate flexible cleaning solutions that are optimized both technically and economically.

For more information, please visit our [website](#) or follow us on LinkedIn:

[SBS Ecoclean Group LinkedIn Profile](#)