

demEAUmed Technologies

Electrochemical Ozonation Technology

Eight categories of innovative technologies together with a monitoring control tool and decision support system are integrated and demonstrated in the demonstration site of the European project demEAUmed 'demonstrating integrated innovative technologies for an optimal and safe closed water cycle in Mediterranean tourist facilities.' This factsheet presents one of these eight technologies; the **Electrochemical Ozonation** Technology.

Description

The Electrochemical Ozonation technology uses electrodes coated with boron doped diamond which produce an oxygen-ozone mixture with higher ozone concentration than can be achieved with conventional gas discharge ozone generators. The ozone is produced in the wastewater and therefore directly and perfectly dissolved in it. Less apparatus is involved when compared with conventional ozone generators and there is no need to provide an oxygen feed line. Different concentrations of pollutants pose no problem as integrated measuring/control system makes the system energy-efficient and ensures continuous operation.

Applicability

The technology holds potential as polishing treatment for small to medium scale installations in view of achieving drinking water quality of the treated water. It removes emergent and priority

pollutants even at trace levels and disinfects the water. The technology is used today to remove organic substances from ultra-pure water and to directly treat recalcitrant or toxic industrial effluents.

Advantages

- No oxygen feed needed
- Automatic operation
- Chemical free process – no need to add hydrogen peroxide, ozone or catalysts
- Adjustable treatment capacity
- Adjustable treatment intensity (saving energy)
- Disinfection of the treated water as a side-effect
- Independent of UV-absorbance of the feed water



Costs issues (or additional value)

- Low running costs.
- In pre-treated domestic wastewater the system oxidizes > 90% of trace organic pollutants with an electrical energy input of less than 1 kWh/m³.

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Please, find further information and updates on demEAUmed project, its technologies, monitoring tool and DSS at: www.demeaumed.eu



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