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xylem Let's Solve Water

IWA the international water association

Photolytic ozonation as promising alternative AOP using UV-LEDs

P. Sperle, B. Broelhorst, J. Mielcke, A. Ried

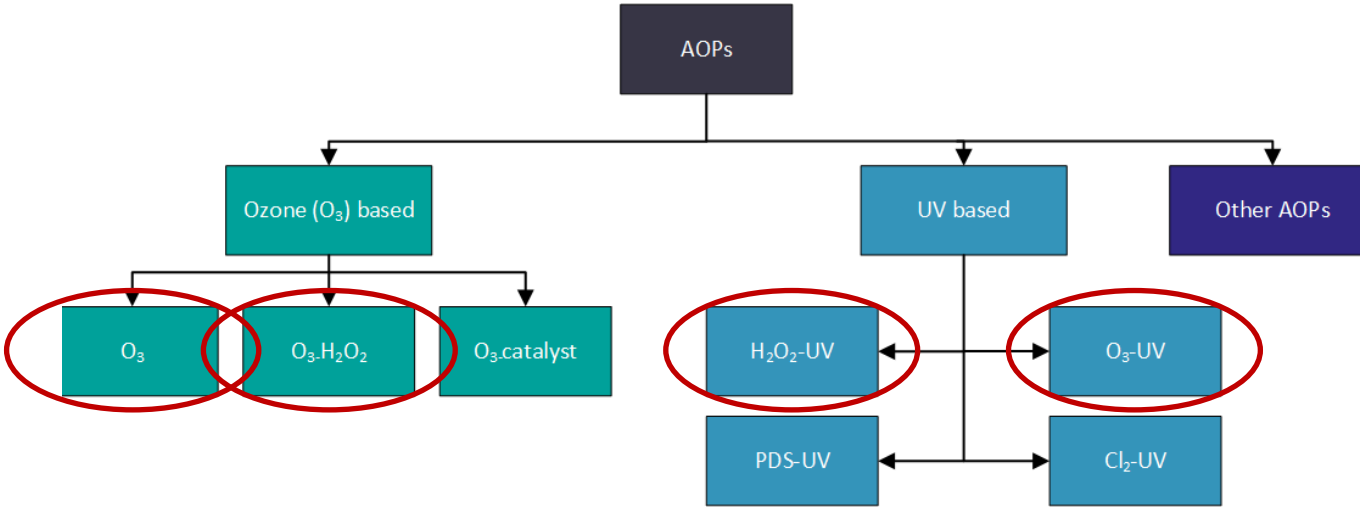
PRiSTiNE

inspiring change

PHOTOLYTIC OZONATION

OH radical generation for advanced oxidation processes (AOPs) through:

- O_3-UV
- Sole O_3
- O_3-H_2O_2
- H_2O_2-UV

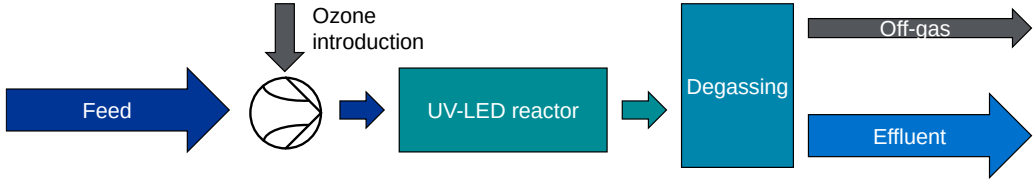


PILOT SKID

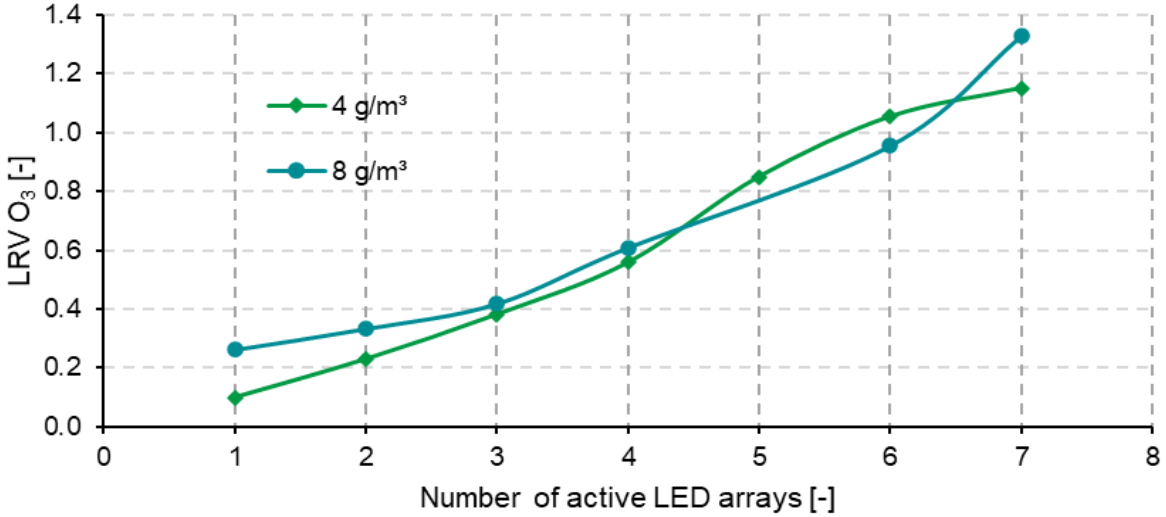
- 1 m^3/h tap or artificial water
- GSO30 / Modular 8 HC

WEDECO
a xylem brand

- UV-LED reactor consisting of 16 LED arrays
- 275 and 268 nm
- O_3 measured by indigo

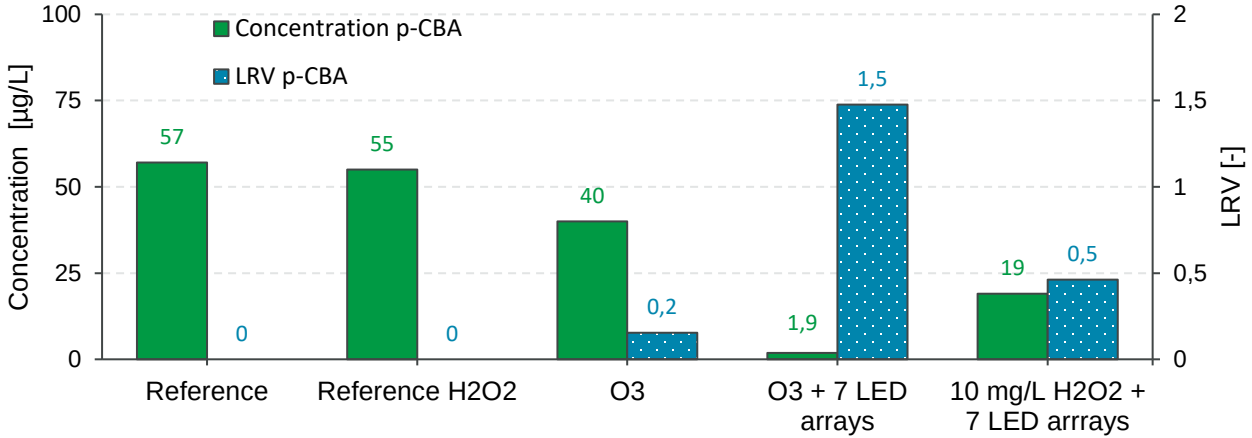


O_3 DEGRADATION BY UV



- 4 and 8 g/m³ O_3 introduced in tap water (pH = 7.4 - 7.7)
- High logarithmic reduction value (LRV) of O_3 achieved

MICROPOLLUTANT REMOVAL



- **Artificial water matrix** (0.15 mM tert-Butyl alcohol, 0.7 mg/L Br^-, buffered at pH = 7.8, para-chlorobenzoic acid (p-CBA) as probe compound, UVT = 96 %), **~ 8 g/m³** applied **O_3** or **10 mg/L H_2O_2**
- Approximately **3 times higher** logarithmic reduction value (**LRV**) of p-CBA **for O_3-UV than for H_2O_2** with the **same number of LEDs**

→ **Reasons** for the **enhanced LRV**, the role of **LEDs** and **possible applications**, we would love to discuss with you **at our poster**

ACKNOWLEDGMENTS

Project PRISTINE: Innovative and versatile integrated solution to remove contaminants of emerging concern in water treatment systems
https://eurecat.org/en/portfolio-items/life-pristine/

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