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OZONE RESEARCH GROUP
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Efficacy of ozone as a biocide for biofilms and industrial modelling

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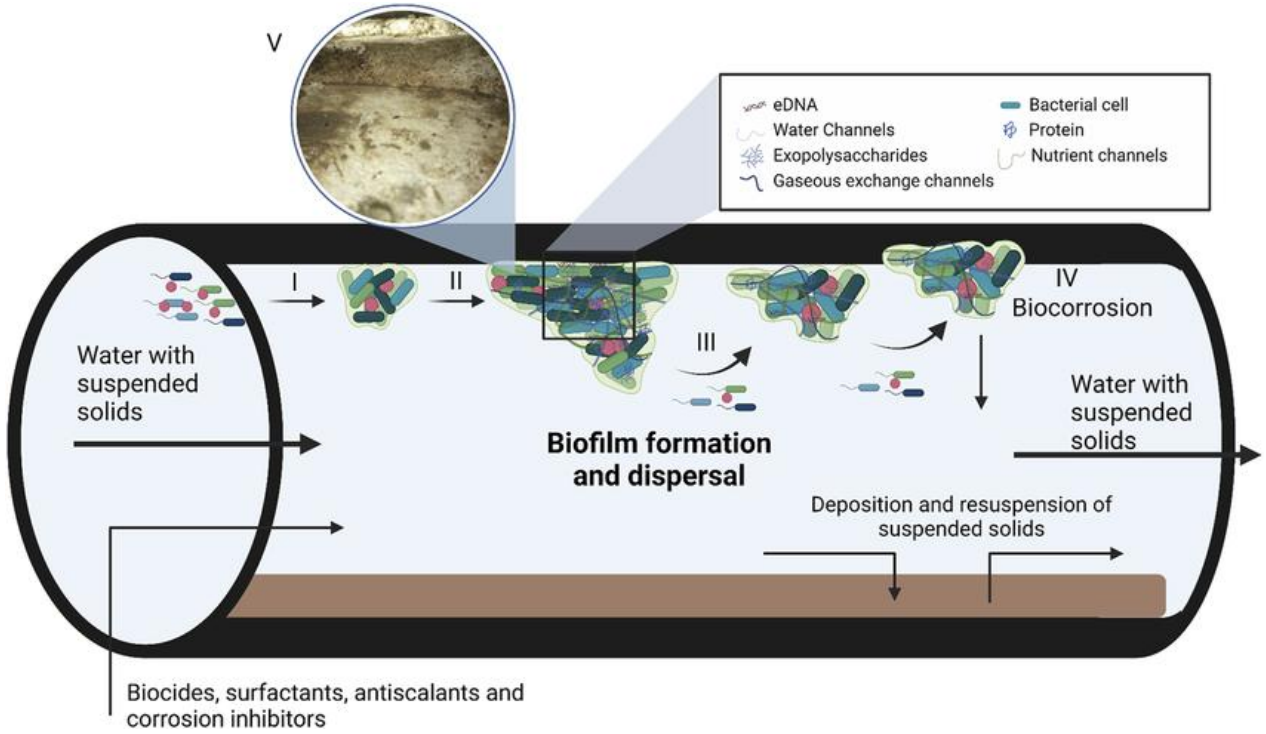
OZONE INDUSTRIES

Biofilms – Industry Implications

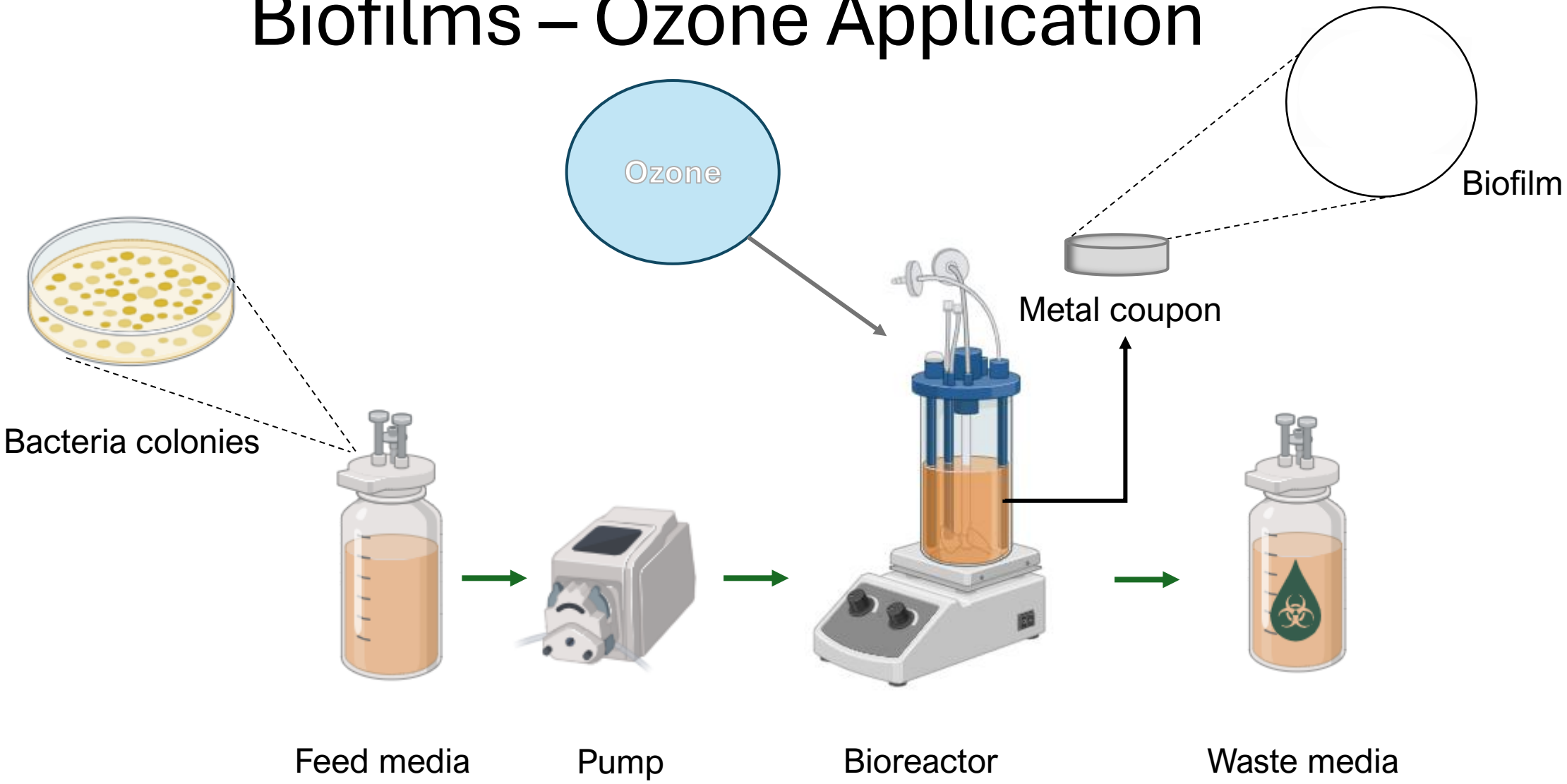


Examples: Processing pipes, Brewery lines, Storage, Wastewater, pre-treatment, Control of contaminants

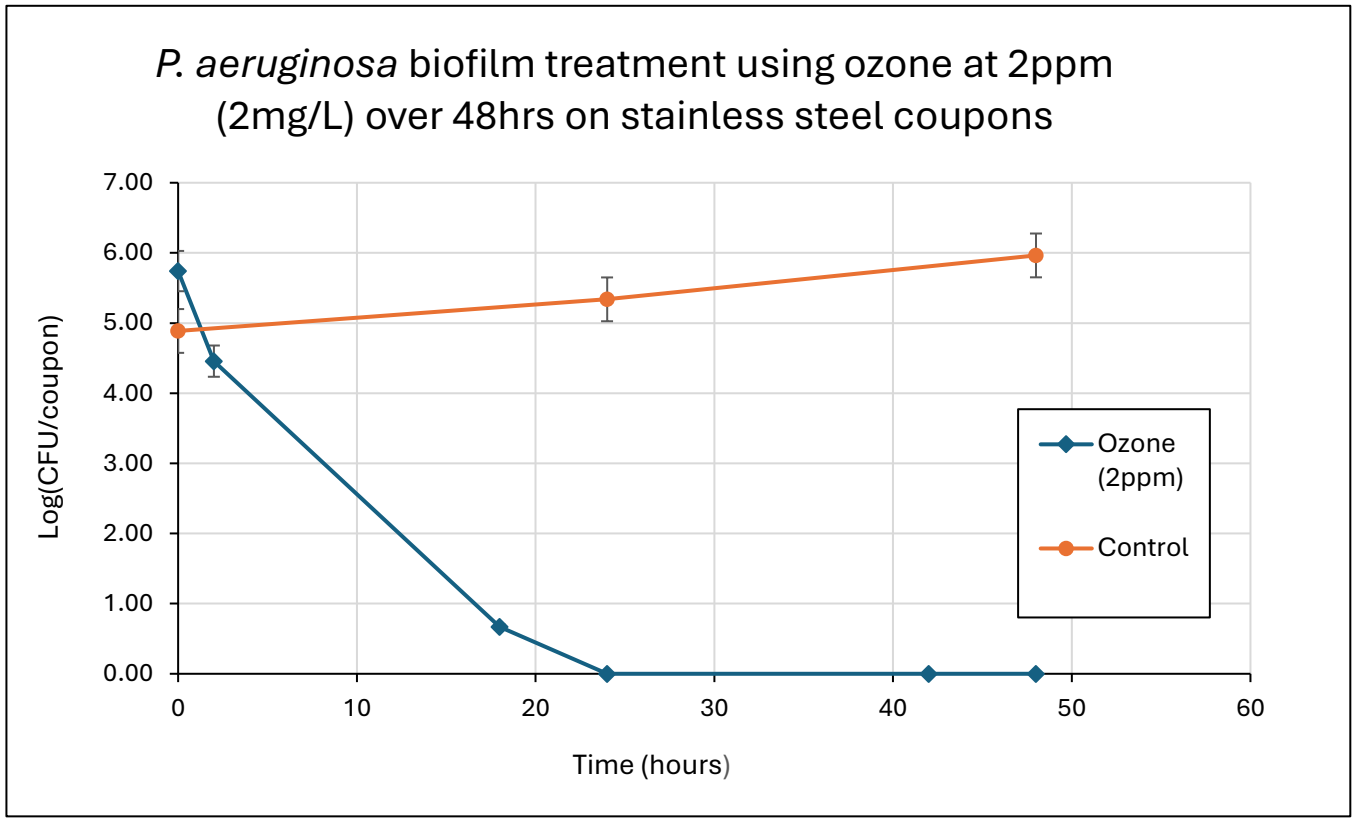
- Complex poly-microbial biofilms in the environment.
- Persistent and recurring biofilms are common across industries.
- Difficult to treat logistically with conventional treatments (CIP, enzymes).
- Results in product spoilage, damage to equipment and health risks.

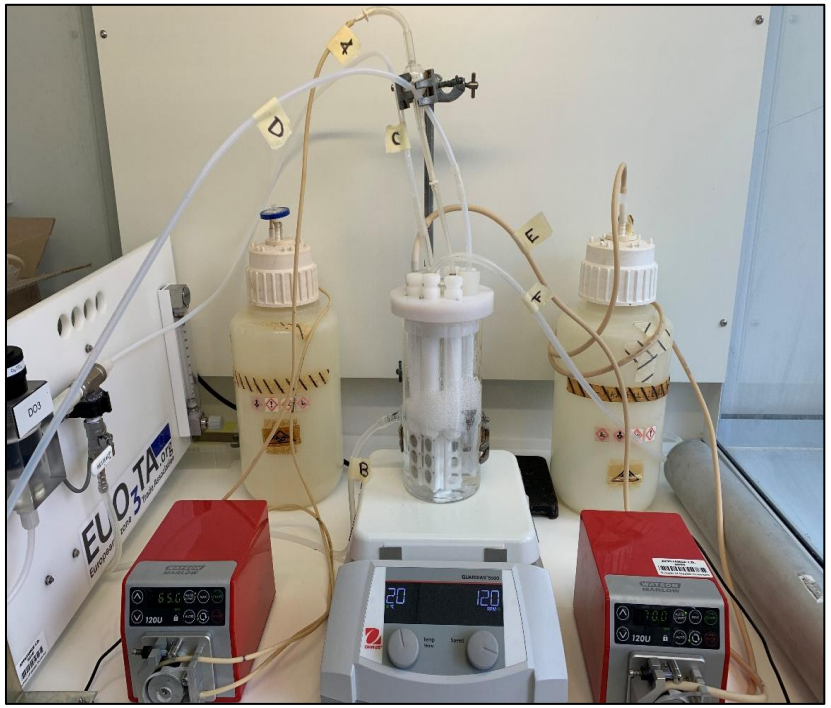
^ Jimoh, Abdullahi & Booysen, Elzaan & Zyl, Leonardo & Trindade, Marla. (2023). Do biosurfactants as anti-biofilm agents have a future in industrial water systems?. Frontiers in Bioengineering and Biotechnology. 11. 10.3389/fbioe.2023.1244595.

Biofilms – Ozone Application



Biofilms – Testing





^ Adapted CDC Biofilm reactor set up for ozone testing with *Pseudomonas aeruginosa.*

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Future objectives

1 Understand main issues

- Further understand specific biofilm related implications within food industry (i.e. types of biofilm, environment).

2 Extend collaboration

- Seek opportunities to extend collaboration for research projects, both ozone and other biocide related. New reactors to replicate other industrial implications.

3 Field trials

- Industry collaborations for research projects and potential set up of field trials that replicate real-industrial environments