Regenerating water and soils from forever chemicals: technologies for PFAS decontamination

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Welcome!

Welcome & Introduction

Let’s play by the rules: smooth sailing for our session!

- **Mute Policy:** Please remain muted unless speaking to avoid background noise.
- **Q&A Time:** Please use the chat to ask questions. If time allows we will select one after each pitch. Others will be answered by the speakers in the chat or you can book a meeting.
- **Session Recording:** This session will not be recorded.
- **Time management**: Pitchers, please keep track of your time. We will inform you if 5 minutes have passed.
- **Technical Issues:** If you encounter issues, use the chat to notify the host.

Welcome & Introduction

Who's moderating?

Silke Schleiff

TUTECH INNOVATION

Sustainability Advisor

project manager EEN & Up2Circ

Who's organizing?

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Session Agenda

- Welcome & Introduction to the topic: The problem of PFAS
- Pitch Presentations:
  - Pitch 1: iFLUX (Belgium)
  - Pitch 2: CellX Biosolutions (Switzerland)
  - Pitch 3: FUSTLAB (Korea)
  - Pitch 4: Tectero (Belgium)
  - Pitch 5: Sensatec (Germany)
  - Pitch 6: YPHEN (France)
  - Pitch 7: C-Biotech (Belgium)
- Closing Remarks

What is PFAS?

Per- and polyfluoroalkyl substances (PFAS)

- PFAS are frequently used in surface finishing, paper coating and specialty chemicals, they serve as emulsifiers, wetting and impregnating agents.
- Forever chemicals: highly toxic persistent pollutants that accumulate in the environment (soil, water) and in living beings
- They can lead to health problems such as liver damage, thyroid disease, obesity, fertility issues and cancer.

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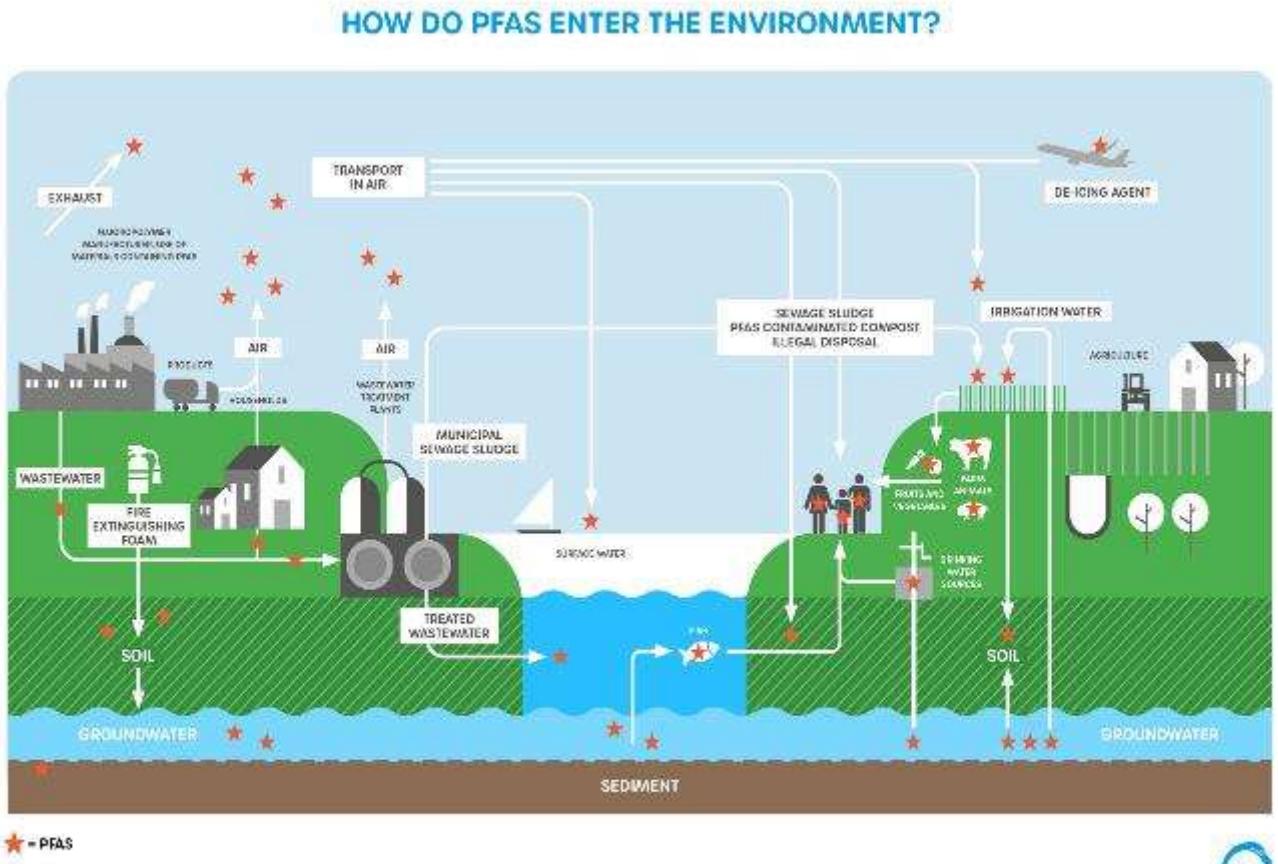
How do PFAS enter the environment?



https://wasserdreinull.de/en/knowledge/micropollutants/pfas/#where-exactly-is-PFAS-contained

- Industrial wastewaster
- Exhaust air
- Firefighting foam
- Sewage sludge

PFAS have been frequently observed to contaminate groundwater, surface water and soil.

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What can be done?

Map of PFAS contamination in Europe

- Restriction of PFAS use (REACH regulation)
- Cleaning up polluted sites, which is technically difficult and costly.

This session will introduce you to innovative companies that developed solutions to remove PFAS from water and soils.

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Pitch Presentations

Time to meet the innovators!

Pitch 1

iFLUX

Marjan Joris

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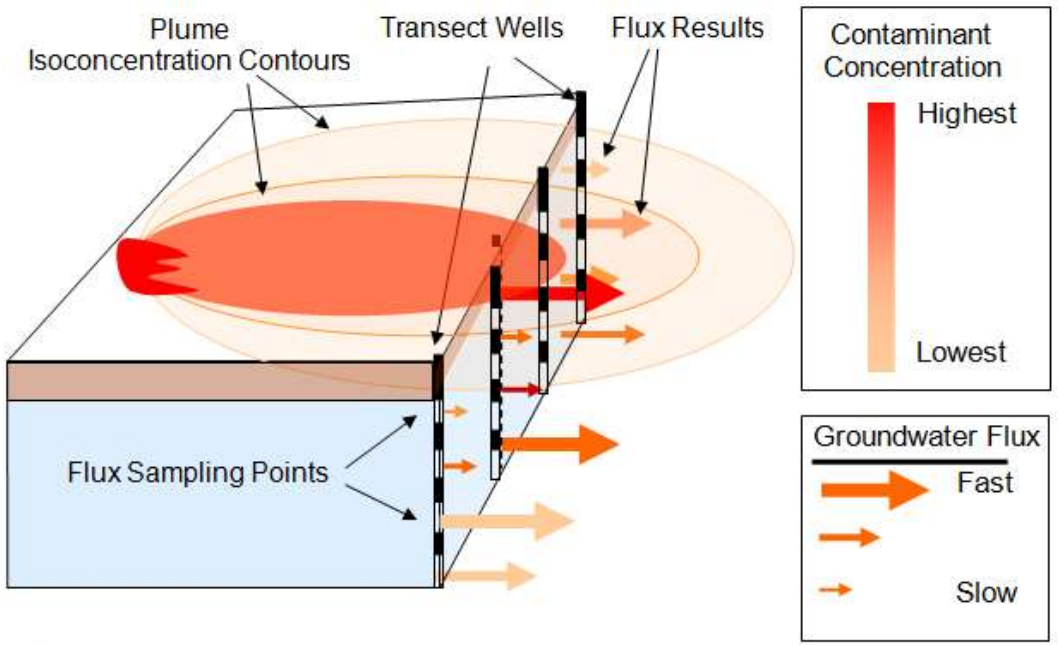
PFAS in the water cycle
How to keep an eye on the groundwater

iFLUX

Goedele Verreydt
Founder iFLUX

Marjan Joris
Contamination &
remediation expert iFLUX

Treat, capture or monitor PFAS where it is appropriate



- PFAS is widespread in the water cycle: sources & diffusion
- Low threshold values
- Persistent and mobile
- Treat source zones & manage risks
- Take into account dynamics: changes in natural conditions & human intervention

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From measuring groundwater & mass flux …

Modular, easy to use, and reliable:

- In all types of available groundwater wells
- Measuring over longer periods
- Multi-level sampling
- Combining different components

iFLUX

SGS

+130 validated components, including many types of PFAS

WATERFLUX

Traceralcohols

BTEX-N-S-MTBE

Benzene
Toluene
Ethylbenzene
O-Xylene
M-,p-Xylenes
Naphtalene
Styrene
MTBE

MINERAL OILS

Fraction C-10 – C-12
Fraction C-12 – C-20
Fraction C-20 – C-30
Fraction C-30 – C-40
Mineral oils (GC)

CHLORINATED SOLVENTS

Dichloromethane
1,1-Dichloroethane
1,2-Dichloroethane
Cis-1,2-dichloroethene
Trans-1,2-dichloroethene
Trichloromethane
Trichloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Tetrachloromethane
Tetrachloroethene
Vinylchloride

CHLOROTULUENES

2-Chlorotoluene
4-Chlorotoluene

TRIMETHYBENZENES

1,2,3-trimethylbenzene
1,2,4-trimethylbenzene
1,3,5-trimethylbenzene

POLYAROMATIC HYDROCARBONS

Napthalene
Acenapthylene
Acenaphtene
Fluorene
Fenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo(a)anthracene
Chrysene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Dibenzo(ah)anthracene
Benzo(ghi)perylene
Indeno(123cd)pyrene

POLYCHLORINATED BIPHENYLS

PCB 28
PCB 52
PCB 101
PCB 118
PCB 138
PCB 153
PCB 180

VOLATILE ORGANIC COMPOUNDS SPECIFIC

1,1,1,2-Tetrachloroethane
1,1,2-Trichloro-1,2,2-trifluorethane
1,1-Dichloroethene
1,1-Dichloropropane
1,1-Dichloropropene
1,2,3-Trichloropropane
1,2-Dibromoethane
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
2,3-Dichloropropene
2-Chloro-1,3-butadiene
2-Ethyltoluene
3-Chloro-1-propene (allylchloride)
3-Ethyltoluene
4-Ethyltoluene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromomethane
Chloroethane
cis-1,3-Dichloropropene
Cumene
Dibromochloromethane
Dibromomethane
Diisopropylether
ETBE (Ethyl tert-butyl ether)
Ethylether
Hexachlorobutadiene
Iodomethane
TAME (Tert-Amyl Methyl Ether)
trans-1,3-Dichloro-propene
Tribromomethane (Bromoform)
Trichloromonofluor-methane

HEAVY METALS

Cadmium
Chromium
Copper
Lead
Nickel
Zinc

METAL SPECIFIC

Calcium
Iron
Potassium
Magnesium
Manganese
Sodium

NUTRIENT CATIONIC

Ammonium - N

HEAVY METAL SPECIFIC

Mercury
Arsenic

NUTRIENT ANIONIC

Nitrate-N
Sulfate

DIOXANE

1,4-Dioxane

PFAS

Perfluorohexanoic acid (PFHxA)
Perfluoroheptanoic acid (PFHpA)
Perfluorooctanoic acid (PFOA)
Perfluorononanoic acid (PFNA)
Perfluorodecanoic acid (PFDA)
Perfluoroundecanoic acid (PFUnDA)
Perfluorododecanoic acid (PFDoDA)
Perfluorobutanesulfonic acid (PFBS)
Perfluorohexanesulfonic acid (PFHxS)
Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanesulfo - namide (PFOSA)
Perfluorobutanoic acid (PFBA)
Perfluorotridecanoic acid (PFTrDA)
Perfluorotetradecanoic acid (PFTeDA)
Perfluorohexadecanoic acid (PFHxDA)
Perfluorooctadecanoic acid (PFOcDA)
Perfluoroheptanesulfonic acid (PFHpS)
Perfluorononanesulfonic acid (PFNS)
Perfluorodecanesulfonic acid (PFDS)
Perfluoroundecanesul-fonic acid (PFUnDS)
Perfluorododecanesul-fonic acid (PFDoDS)
Perfluorotridecanesul-fonic acid (PFTrDS)
4:2 Fluorotelomer sulfonate (4:2 FTS)
6:2 Fluorotelomer sulfonate (6:2 FTS)
8:2 Fluorotelomer sulfonate (8:2 FTS)
10:2 Fluorotelomer sulfonate (10:2 FTS)
Perfluoro-3,6-dioxaheptanoic acid (PHFO-DA)
N-ethyl perfluorooctanesulfonamide (N-EtFOSA)
N-methyl perfluorooctanesulfon-amidoacetic acid (N-MeFOSAA)
N-ethyl perfluorooctane-sulfonamidoacetic acid (N-EtFOSAA)
Perfluorohexanesulfonic acid (PFHxSA)
8:2 Polyfluoroalkyl phosphate diester (8:2 DiPAP)
6:2 Polyfluoroalkyl phosphate diester (6:2 DiPAP)
Mixed 6:2/8:2 Polyfluoroal-kyl phosphate diester (6:2/8:2 DiPAP)
9-Chlorohexadecafluoro-3 -oxanonane-1-sulfonic acid (9 ClPF3ONS)
11-Chlorohexadecafluoro-3 -oxaundecane-1-sulfonic acid (11 ClPF3UdS)

For more details, please visit www.iFLUX.be

Collaborative third-party labo

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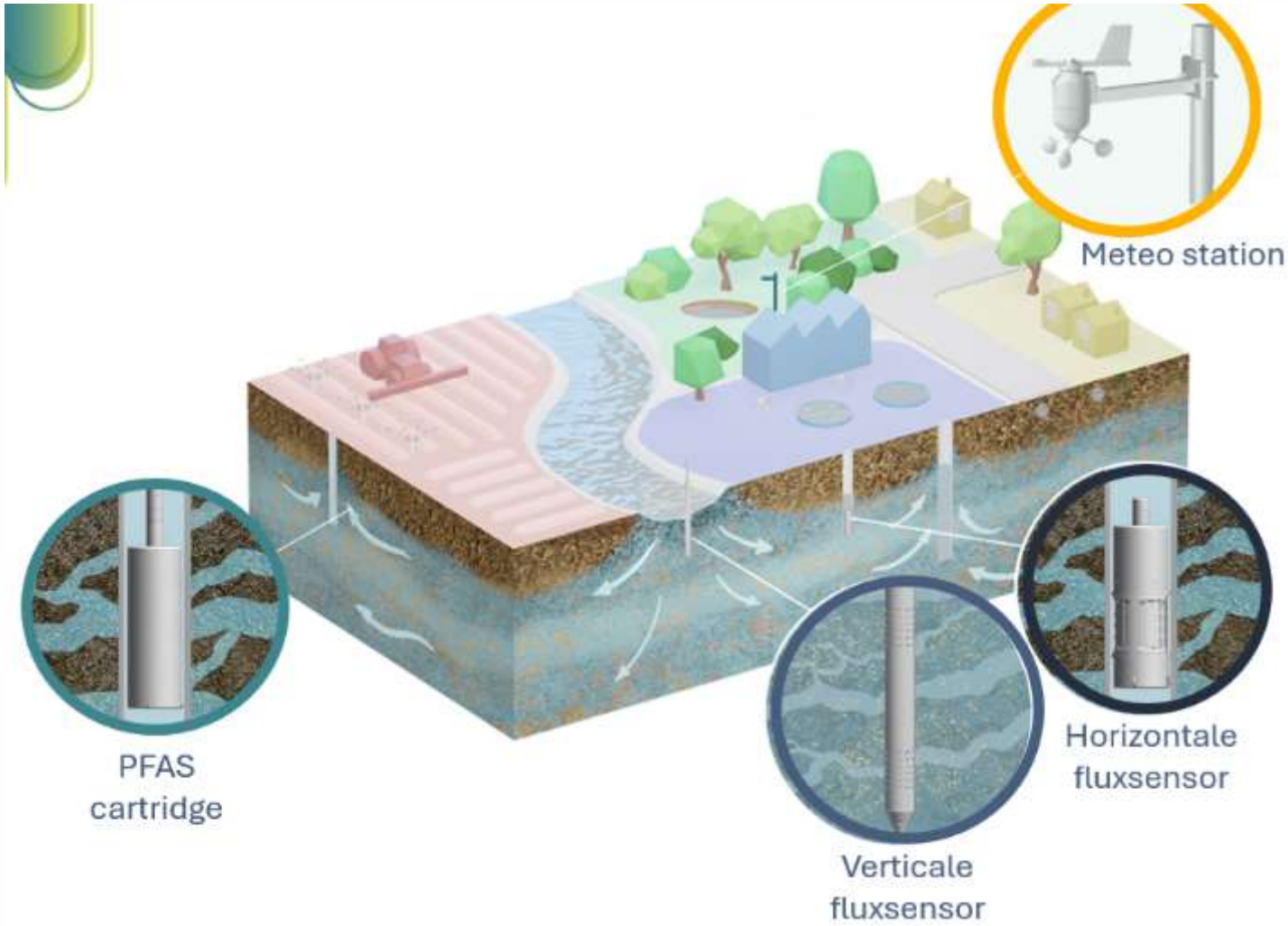
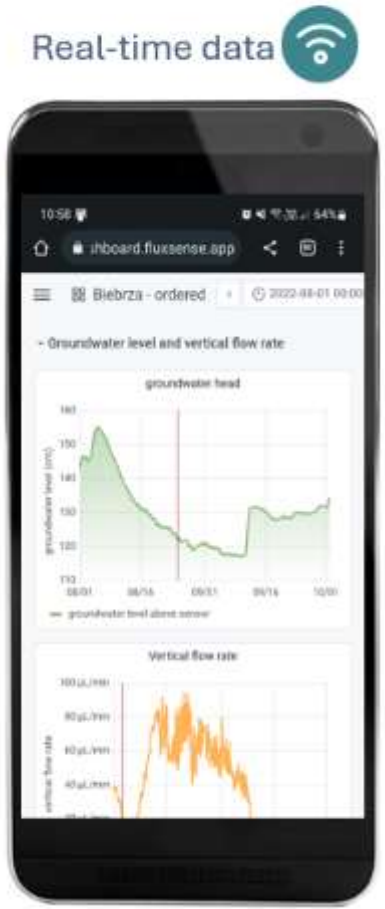
… to continuous Aquifer intelligence





iFLUX value and sustainable impact

Our patented groundwater sampling technology, the iFLUX Sampler, is designed to track groundwater contamination. These samplers measure both groundwater and contaminant movement over time. Not only do we identify where contamination is located, but we also determine the direction and speed at which it travels through the aquifer.

Our solution is primarily used to assess risks at complex sites, including those with mixed pollutants, PFAS and brownfield projects.

Applications: contaminated sites & source zones to drinking water protection areas

Who can apply your solution?

and many more …

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#EENCanHelp

Book a meeting with: iFLUX

Marjan Joris

Marjan@iflux.be

Contamination and Remediation expert
iFLUX

een.ec.europa.eu

Pitch Presentations

Time to meet the innovators!

Pitch 2

CellX Biosolutions

Estelle Clerc

SustainableSolutionsMatch

PFAS degradation with natural bacterial products

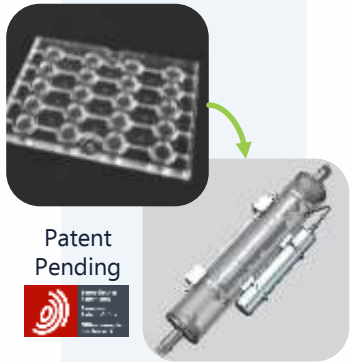
CellX Biosolutions AG

Estelle Clerc
CEO and co-founder

SustainableSolutionsMatch

We discover and use novel natural bacteria to degrade PFAS

1 MICROFLUIDIC DEVICE



Patent Pending

Robotic enclosure*

2 CAPTURE OF BACTERIAL DEGRADERS

3 BACTERIA CULTIVATION AND SCALE UP

4 BACTERIAL CULTURE STARTER

5 SOLD TO MANUFACTURERS AND DISTRIBUTORS

- **PFAS**
- Pesticides
- PET plastics
- Pharmaceuticals

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* Patent application number PCT/EP2023/072593.

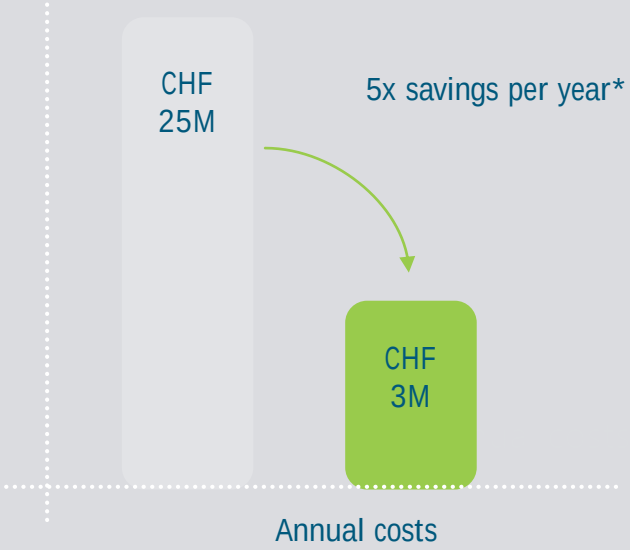
Clerc et al. (2023, Nature Communications) ; Raina et al. (2022, Nature) ; Clerc et al. (2020, JoVE) ; Lambert et al. (2017, Nature Microbiology) ; Clerc et al. (in prep.)

Value Proposition and impact

Medium-size chemical company

50’000 ton of waste / year

Increased Cost-Efficiency



Improved Sustainability

CO_2 50’000+ tons saved / year

Reduced impact on environment and health

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Biosolutions *Calculations based on 150 CHF per ton of waste incinerated; solution sold at 100 CHF per ton of waste. One ton of waste produces one ton of CO2. Ref: BAFU

Targets: PFAS producers and users

Soil remediation

Wastewater treatment plants

Our product:
Bacterial culture “starter”

Concentrated waste

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We are looking for:

1. Implementation partners
- PFAS producers and users disposing of contaminated wastewater
- Owners of contaminated sites (soil and water)
- Wastewater treatment plant operators

2. Fast PFAS measurements partners (sensors)

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Book a meeting with:

CellX Biosolutions

Estelle Clerc
CEO and co-founder
CellX Biosolutions AG
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Up2Circ

enterprise europe network

Pitch Presentations

Time to meet the innovators!

Pitch 3

FUSTLAB

Seonae Hwangbo

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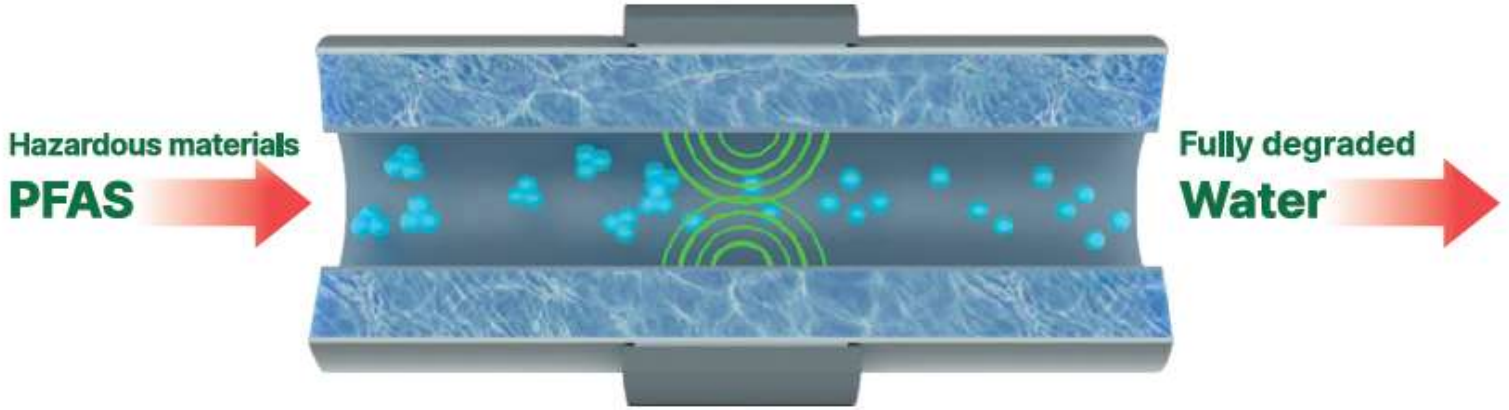
Using Ultrasonic AOP to remove PFAS from wastewater without filters, ozone, H_2O_2

FUST Lab. Co., Ltd.

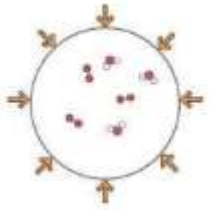
Seonae Hwangbo
CTO

Solution

Circle-type Focused Ultrasonic Technology for PFAS Treatment



STEP 01



Pressure impacts the shape

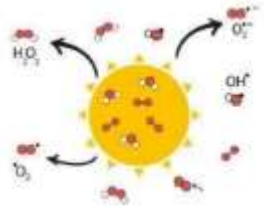
STEP 02

Bubbles begin to burst

STEP 03

Internal vacuum acceleration

STEP 04



Cavitation explosion
OH Radical formed
+ high pressure + high temperature

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New type of Advanced Oxidation Process

NO Filter - NO Ozone - NO Hydrogen Peroxide - NO Catalysts

Major methods of AOP

01 **Ozone + H_2O_2**	• AOP through H_2O_2 • But, high H_2O_2 can cause adverse effect, reacting against or with toxins.
02 **Ozone + UV**	• UV spectrum reacting with ozone, creating high H_2O_2 level for degradation
03 **H_2O_2 + UV**	• OH radical easily formed, but not effective due to H2O2's lack of reactive-ness compared to ozone
04 **Photocatalysts**	• Generating OH radicals by irradiating light energy to photocatalysts • Degrade using OH radicals with strong oxidation energy

Limitations of Conventional AOP

- **High initial fee & maintenance fee**
- Not applicable across all toxins
- Toxic residual compounds found
- Pre-treatment required

FUST Lab's AOP using Microbubble

When microbubbles are destructed, OH radicals with **2,000 times stronger oxidation energy of ozone** is generated

Non-selective degradation of toxins in water

Oxidizing Agents	Oxidizing Power (V)
OH Radical	2.80
Oxygen Atom	2.42
Ozone	2.08
H_2O_2	1.77
Chlorine Dioxide	1.50

Confirmation of the possibility of treating the highest level of non-degradable toxic: perfluorinated compounds (PFAS)

Analytical results of liquid chromatography (LC) of PFOA, PFOS

Before Ultrasonic Treatment

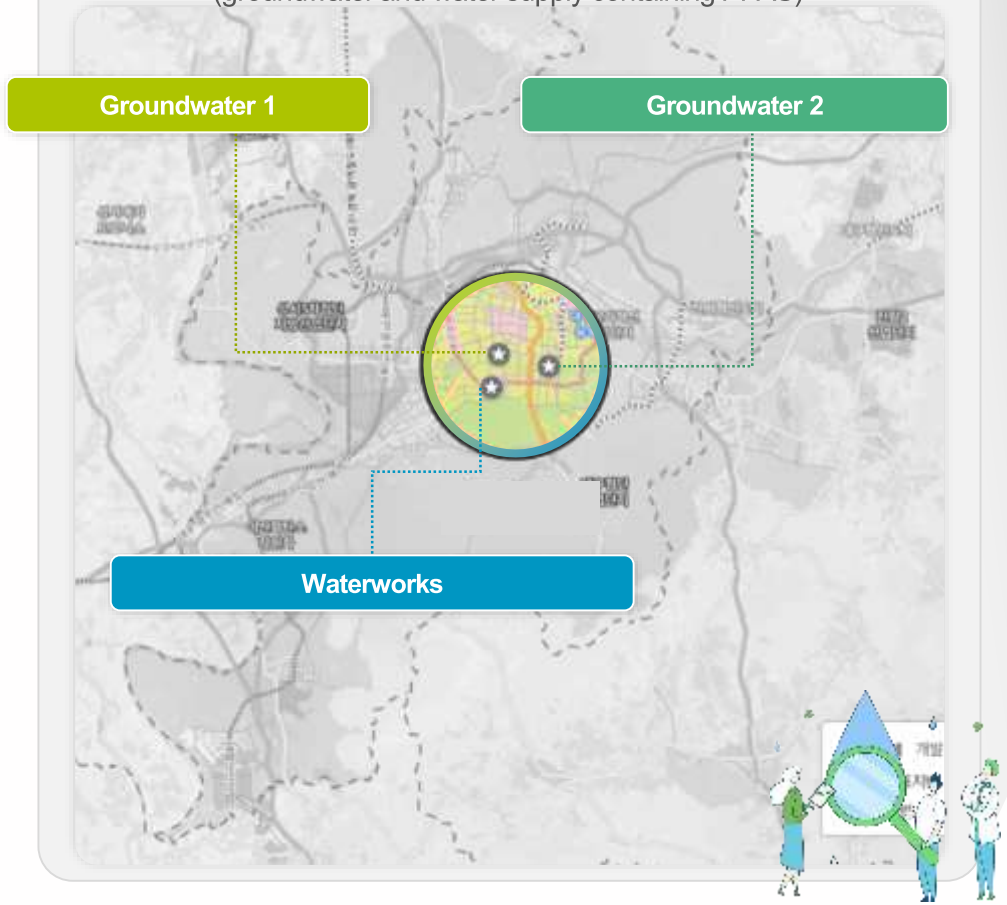
After Ultrasonic Treatment

In accordance with the National Institute of Environmental Research (NIER) Announcement No. 2019-70 [Regulations on the criteria and methods for testing and inspection of hazardous chemical products in daily life for safety confirmation].

Proof of Concept Acquired by Real Wastewater

Real Wastewater Acquired

(groundwater and water supply containing PFAS)



Treatment Results

(PFAS Treatment Result (Daegu Region Wastewater))

Degradation Confirmed

Sample	Ultrasonic Treatment	Results per toxin (mg/L)	
		PFOA	br_PFOS
Groundwater 1	Before	2.07	0.104
	After	Not Detected	Not Detected
Groundwater 2	Before	0.592	0.155
	After	Not Detected	Not Detected
Waterworks	Before	10.4	0.336
	After	Not Detected	Not Detected

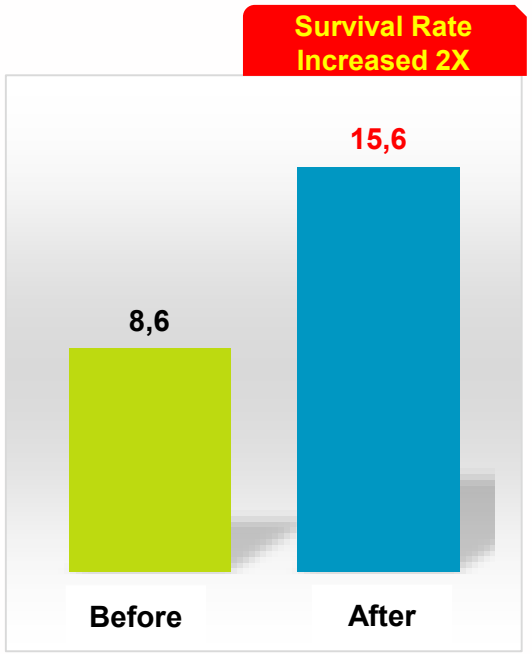
- Perfluorinated compounds are toxic substances in the human body even in very small amounts.
- Breakdown small amounts is very difficult

Degradation using Microbubble AOP,

It was confirmed that trace amounts of PFAS were removed

Toxicity Test Result: Zebra Fish Embryo development test

※ Lethal Dosage (LC_{50}) Result



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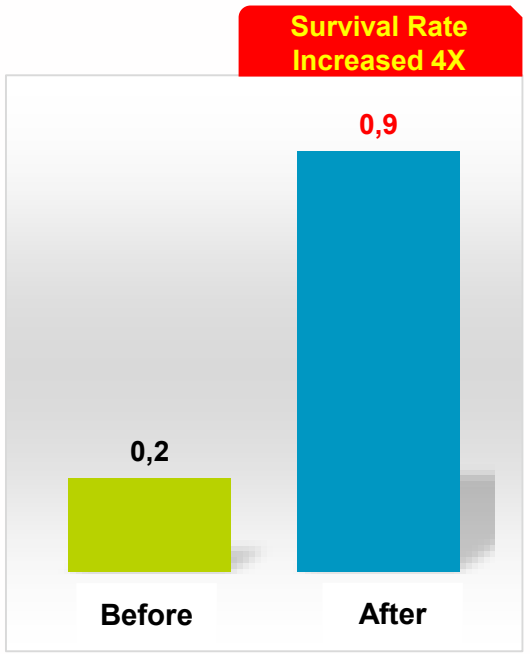

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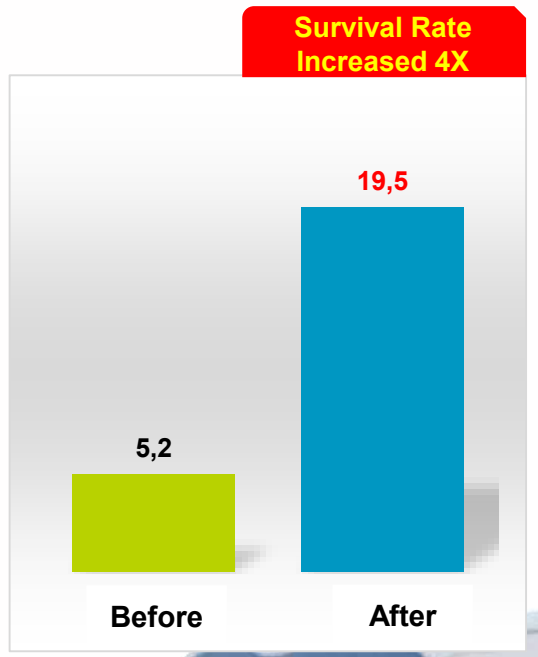


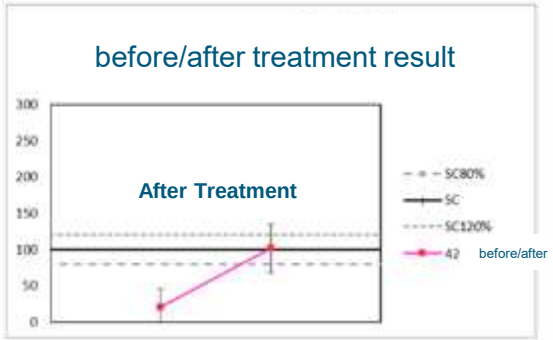
< Area 3>

- for **ALL samples toxicity decreased** after ultrasonic treatment

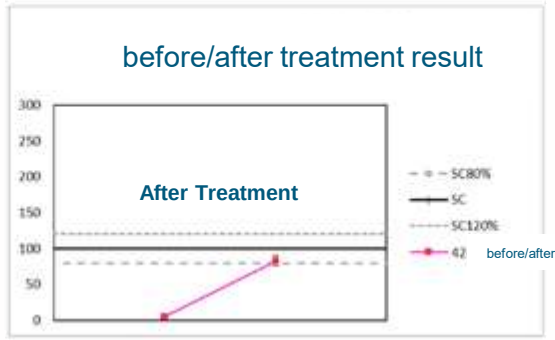
LC_{50} (Lethal Concentration 50): it indicates an increase in the concentration of the sample that exhibits embryotoxicity. In other words, as the LC50 value increases, toxicity decreases.

Gene Toxicity Test to Confirm the Technological Advancement

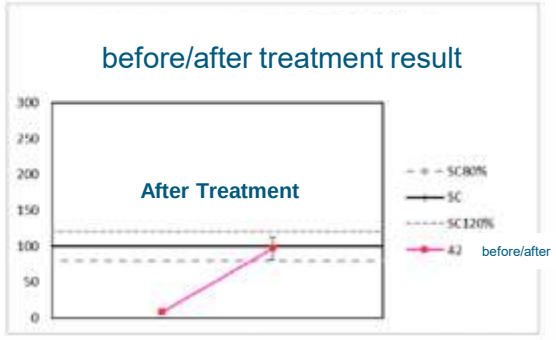
GH3 Cell Survival Rate



MVLN (human breast cancer cell) Survival Rate



H295R (Human Cancer Cell) Survival Rate



Toxicity assessment performed using various cells affected by environmental hormones

Increase in cell survival rate in focused ultrasonic treated water

Currently conducting Toxicity test using human cells, zebra-fish, and Daphnia.

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Introducing our solution, CAVITOX

CAVITOX Standard Model

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Recent Project

Collaboration with AstraZeneca HQ regarding Pharma Waste

- **Project : Novel Waste to Value Solutions with AZ**
- Goal: **Replacing current incineration** of pharma-waste with FUST Lab's Microbubble AOP Technology
- Progress
  - 24.05 ~ 24.06, Proposal primary evaluation
  - 24.07 ~ 24.08, Secondary evaluation and in-depth interview
  - 24.09, Online-meeting Discussions
  - 24.10, In-personal meeting in Sweden
  - **24.11 ~ 25.01, Feasibility Testing & Preliminary Preparation (Current Phase)**
  - 25.02 ~ 25.12, Joint R&D, equipment installation in AstraZeneca Plant in Sweden, Pilot Projects

< 2024.10 AZ Meeting in Sweden>

About FUST Lab.

R&D focus startup providing innovative solutions in manufacturing process and degradation/extraction fields using its Circle-type Focused Ultrasonic Technology

Company Name	**FUST Lab. Co., Ltd**	**Industry**	Manufacturing, R&D
CEO	Hwangbo Minsung	**Capital**	330,000 USD
Founded	May 30th, 2022	**Employee**	18
Address	HQ: 11-3, Techno 1-ro, Yuseong-gu, #N102, Daejeon, 34015, Rep. of KOREA (Post: 34015)		
Key attributes	• Research Institution No. 1542 (established by KRISS) • Seed funding from Blue Point Partners, & Pre-Series A funding from Enlight Ventures, D.Camp, INEX, IBK Bank, and KDB Bank(Total 2.6M USD) • IBK Changgong, KDB NextONE, and Shinbo Start-up NES • ISO 9001, 14001, and 45001 certifications • Won the D.Camp D-Day competition in March		

*Korea Research Institute of Standards and Science

Key Partners & PoC Partners

Wastewater

AstraZeneca, K water, SK ecoplant, renewus

Emulsification/Dispersion

P&G Procter&Gamble, NIPPON KAYAKU, stahl, RESONAC

Target Audience:

→ Wastewater Treatment Companies

→ Institutions/Companies with PFAS problem

What we are looking for:

FUST Lab seeks for R&D and Business partners who are seeking new wastewater treatment technique to **remove PFAS and other POPs completely from water without filters and/or additives.**

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Book a meeting with: FUST Lab.

Seonae Hwangbo
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FUST Lab.
Focused Ultra Sonic Tech. Lab.

Up2Circ

enterprise europe network

Pitch Presentations

Time to meet the innovators!

Pitch 4

Tectero

Wouter de Weirdt

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Non-thermal plasma destruction of PFAS in (waste)water

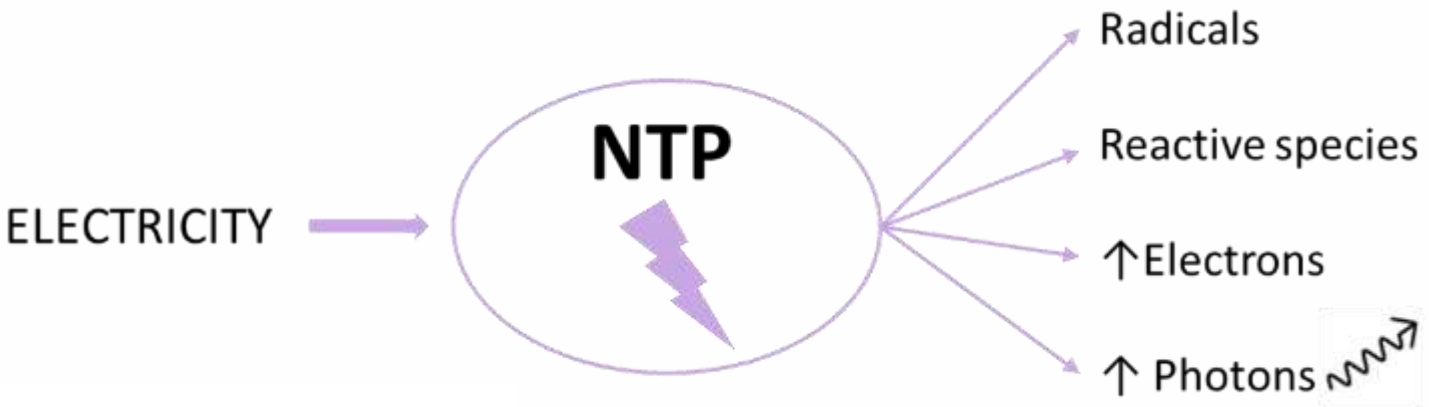
Tectero BV

Wouter De Weirdt

CEO

Introduce your sustainable solution

Characteristics	Description	Effect	PFAS properties
High electronegativity	Tend to attract shared electrons in a bond	Strong C-F bond	Chemically stable (low reactivity)
			Thermally stable
		Polar bond	Strong acidity (low pKa)
Low polarizibility	Electron cloud density not easily impacted	Weak intramolecular interactions	Surfactant properties
		Low surface energy	
Small size	1.35 ångström (C-F Bond length)	Shielded carbon	Chemically stable (low reactivity)



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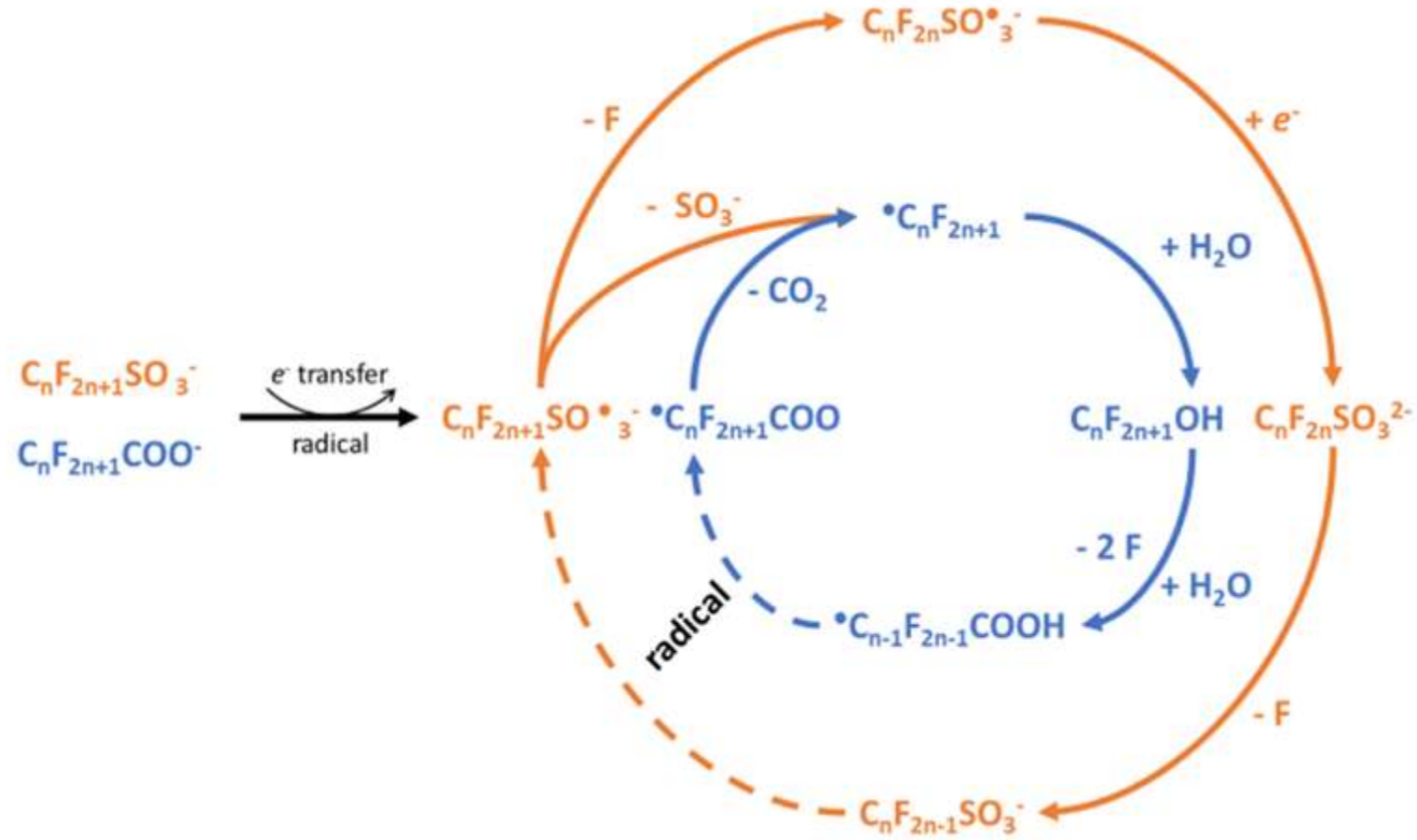

TECTERO

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Solutions differential value and sustainable impact

	Nonthermal Plasma (NTP)	Activated Carbon (AC)	Ion Exchange Resins (IX)
Removal efficiency PFOA	95 - 99,99 %	50 -90¨%	45 - 90 %
Removal efficiency PFOS	95 - 99,99 %	90 - 98 %	85 - 98 %
Chain length limitation	No	Yes	Yes
Residual waste	No	Yes	Yes
Versatile	High	Low	Low
Sensitivity to ions	Low	Medium	High
Sensitivity to organic load	Low	High	Medium
Sensitivity to pH variability	Low	High	High
CO_2 emission	Low	Very high	High
Relative overall cost per m^3	X	1,2 - 1,3 times X	1,4 - 1,6 times X

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Solutions differential value and sustainable impact

- Full destruction potential of individual PFAS in water streams by plasma technology. No residual waste stream created.
- Fully sustainable process if renewable electricity (solar, wind, hydro) is used. Electricity is the only consumable.
- Most cost effective PFAS removal method. Total inlet concentration removal from 10 mg/L to 20 ng/L achieved.
- No harmfull residuals
- Low maintenance requirements.
- Destruction of other POPs and COD present as well.
- Pilot test equipment available to test (large) samples (drum / IBC).
- Containerized, mobile and fixed plants. Discharge rates from 0,5 m^3/h till 40 m^3/h

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Market/Target audience – Who can apply your solution?

(Waste)water operators
Tank cleaning operators
Landfill operators
Airport operators
Metal plating and etching industries
Remediation contractors

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Cooperation

- Clients
  - Private
  - Public
- Investors
- Partners

TECTERO

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Book a meeting with: Tectero BV

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Pitch Presentations

Time to meet the innovators!

Pitch 5

Sensatec

Mascha Heiser

SustainableSolutionsMatch

Biopolymer-enhanced PFAS elution in contaminated soils

Sensatec GmbH

Mascha Heiser
Project Management

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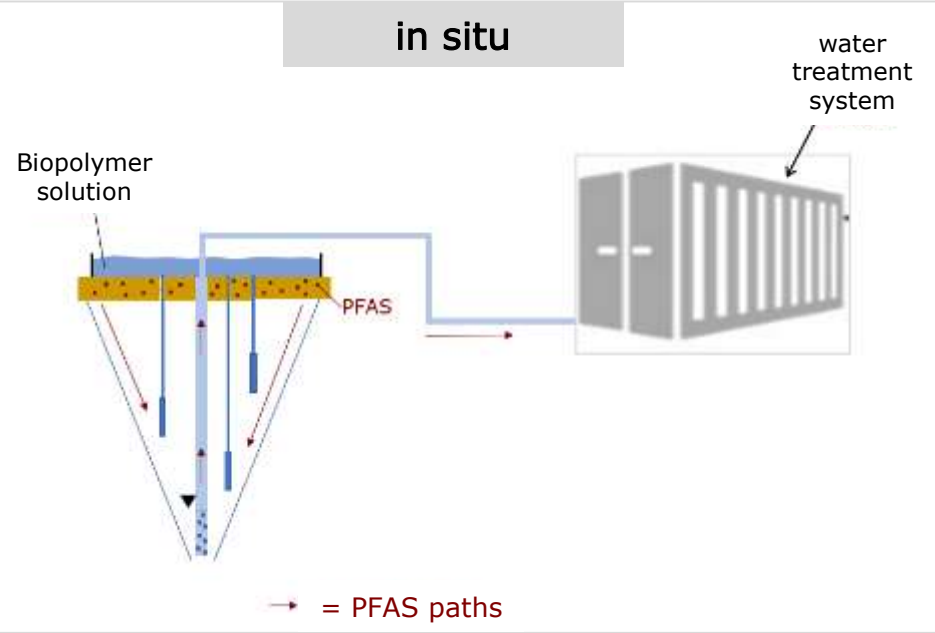
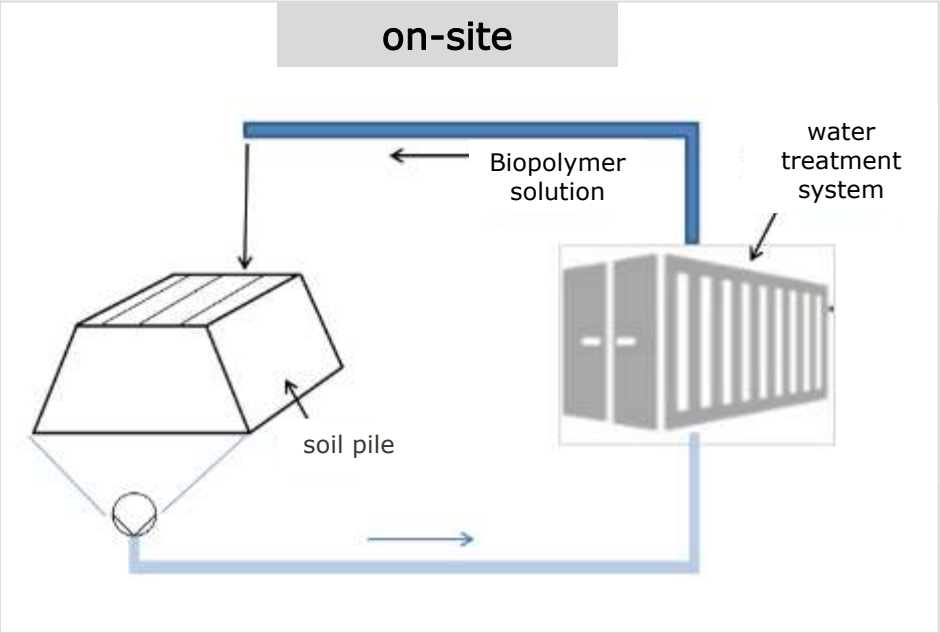
- remediation of PFAS contaminated soil
- PFAS elution
- in situ or on-site application

Primary choice: flotation





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Differential value and sustainable impact of our solution:
- confirmed PFAS removal of 80 - 95 % from soils at various sites

- low environmental impact (less CO2 emission, biodegradable biopolymers)
- less resource consumption (water recirculation)

- Recovery of contaminated areas/brownfields

- Reduction of the PFAS groundwater load
→ clean groundwater = clean drinking water
→ Improving public health

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Solution for PFAS problem owners

- airports → Fire-fighting foams
- production facilities → paper coatings, textiles, etc.
- agricultural areas → pesticides

→different origins of PFAS contamination are treatable with our technology

- unique site-specific composition of each PFAS contamination

- investigate PFAS elution potential using site-specific laboratory feasibility study before upscaling to pilot or full-scale
→ column tests

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Cooperation partners we would like to connect to:

- Analytical laboratories (PFAS analyses)
- Supplier of innovative water treatment technologies for PFAS
- Soil and groundwater remediation consultancies

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Book a meeting with: Sensatec GmbH

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Pitch Presentations

Time to meet the innovators!

Pitch 6

YPHEN

Carmen Mirabelli

SustainableSolutionsMatch

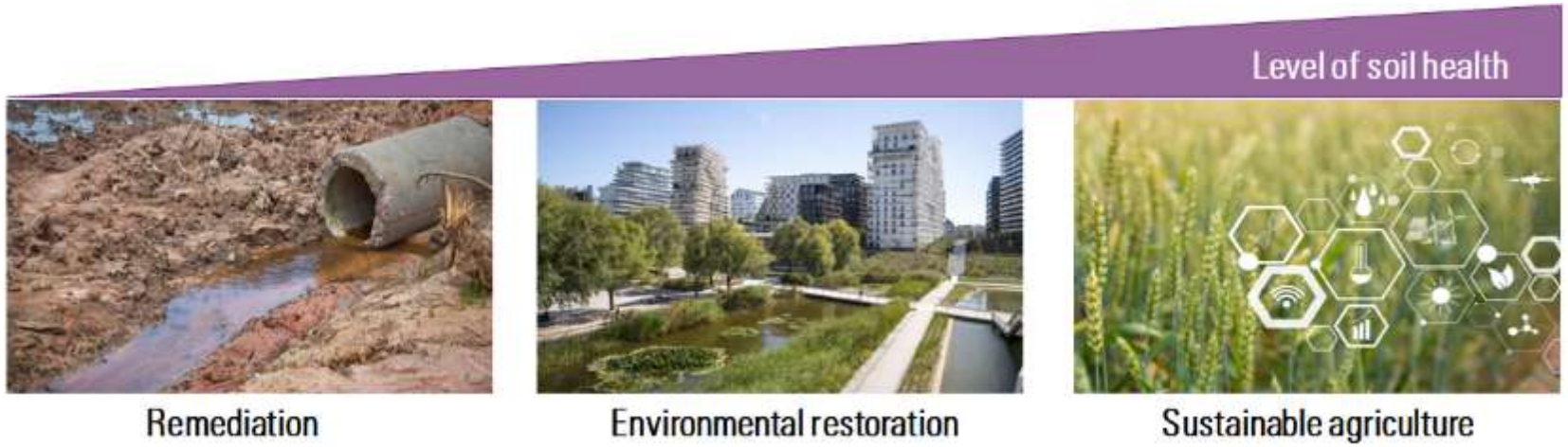
Solution title PURESOL, an integrated, versatile and scalable solution to tackle *in situ* PFAS soil pollution

Company name YPHEN SAS

Carmen Mirabelli
Responible of R&D

YPHEN

Our mission is to put microbiology front and center for soil health solutions

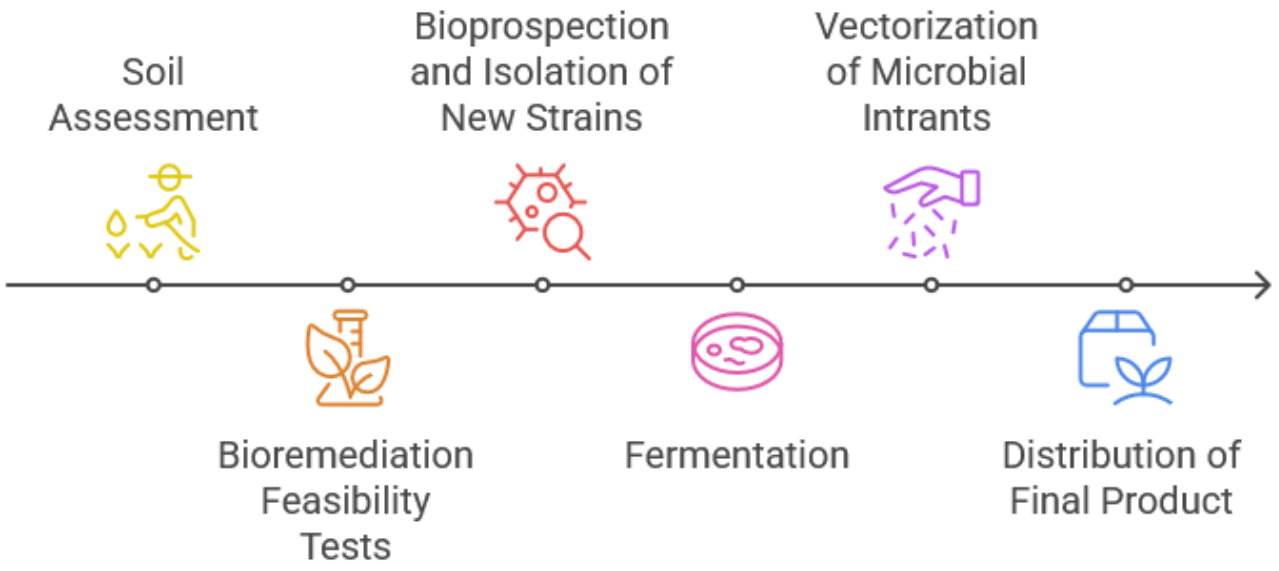


65-70% EU soil is degraded

Bioremediation

Treatment with living microorganisms to re-functionalize soil, including removal of pollutants

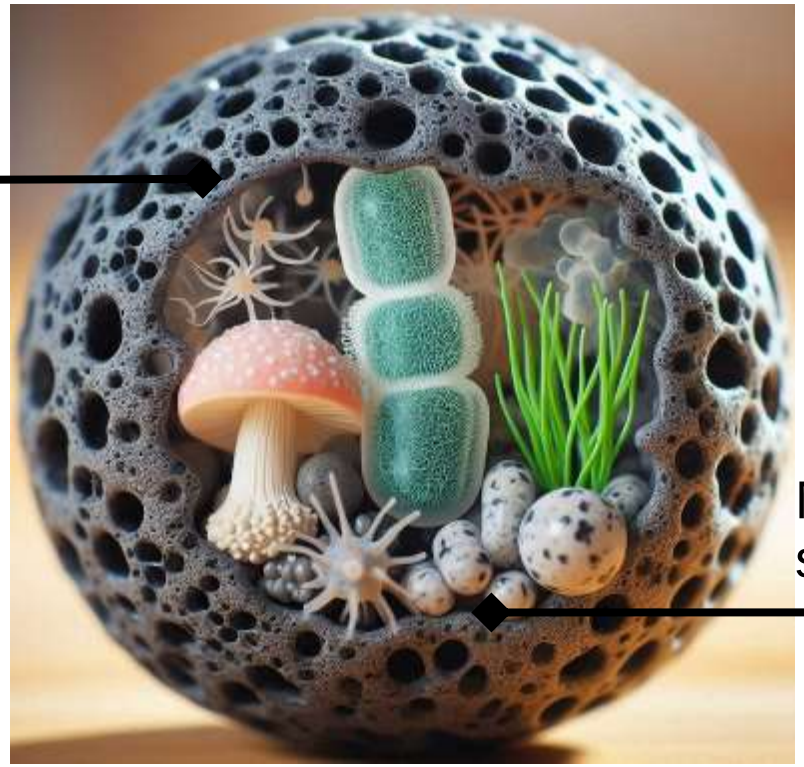
Technological platform for the implementation of bioremediation projects



PFAS?

MEET PURESOL…

Active carbon shell for PFAS absorbance

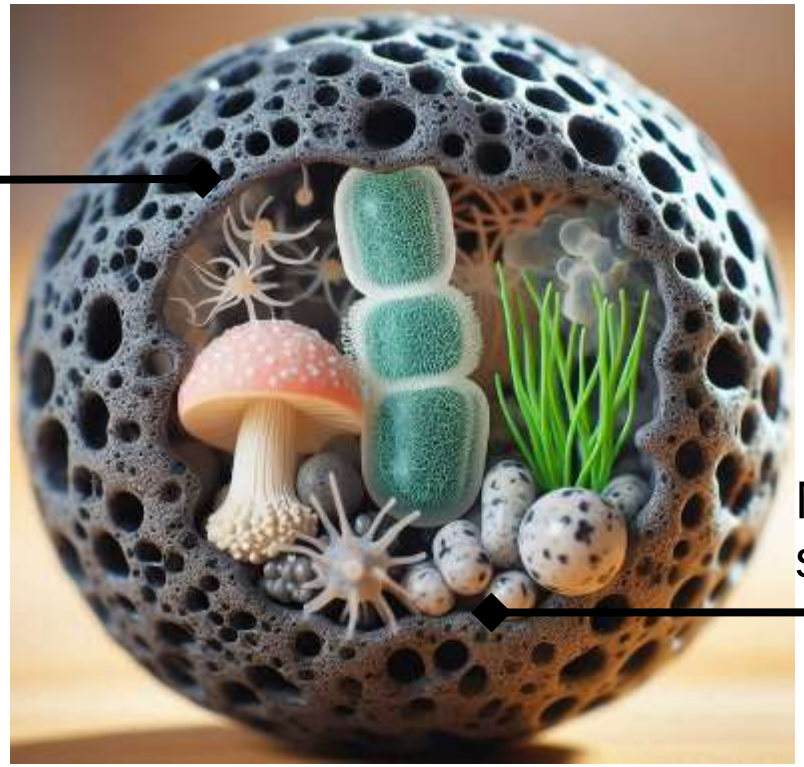


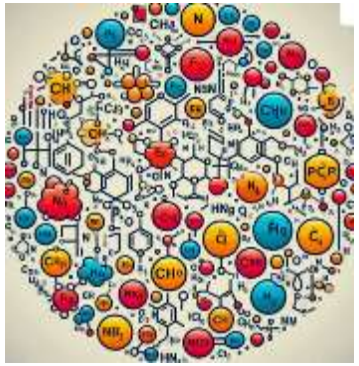
Microbioreactors of selected microbial species for targeted PFAS degradation

PURESOL UNIQUE VALUE PROPOSITION

Active carbon shell for PFAS absorbance

Merges low impact organic technologies: bioremediation + passive absorbance with active carbons





Adaptable to the range and complexity of PFAS

Microbioreactors of selected microbial species for targeted PFAS degradation

Easy to scale up (TLR 5-6)

Who we target?

Polluters for the polluters pay principle

Environmental remediation companies

Municipalities

Soil engineering offices

Who we need?

Diagnostic tools for *precision bioremediation*

Expert (SMEs or academics) of bioprospection and microbial isolation

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Book a meeting with

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YPHEN

Wanto to know more?

Visit our website

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Up2Circ

enterprise europe network

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Time to meet the innovators!

Pitch 7

C-Biotech

Ingmar Nopens

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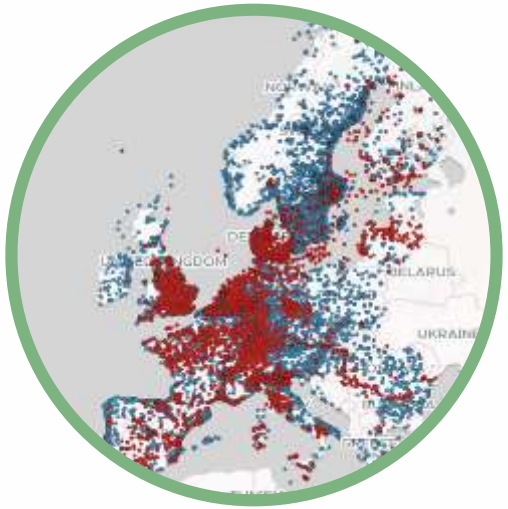
We clean the Earth with Plants

C-biotech

Ingmar Nopens
Managing Director

The world has thousands of hectares of PFAS polluted land



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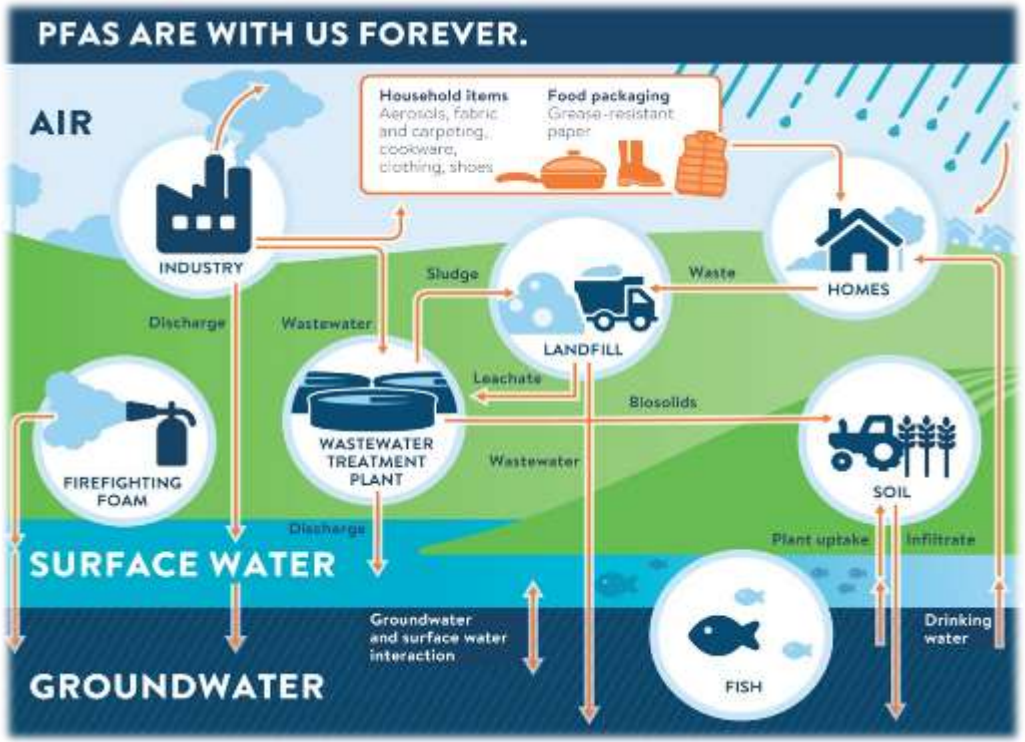
Inacting leads to further spreading of the pollution worsening the problem



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TRADITIONAL SOLUTION

Excavate topsoil (50-70cm)
Transport off-site
Off-site physical-chemical treatment (washing + burning)+landfilling

Remarks/challenges

- Only option for hotspots
- Huge amounts of soil to be transported (C-footprint!)
- Treatment capacity can be limiting
- Soil is lost; site needs to bring in new soil
- Contaminated groundwater rises and repollutes new soil
- Estimated cost: *€750k/ha*

Expertise of

DEME

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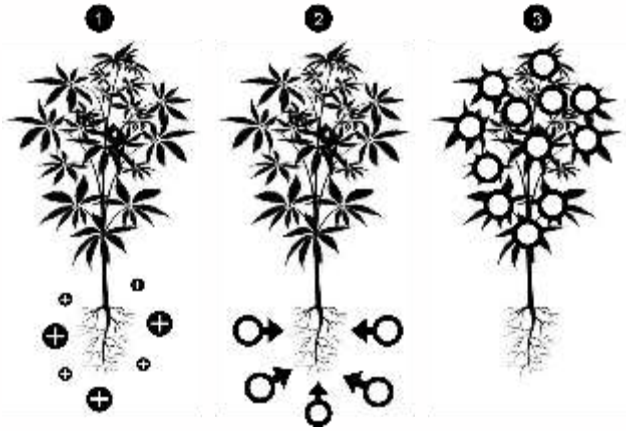
ALTERNATIVE NATURE-BASED SOLUTION



Phytoremediation is proven technology
Soil additive Hempurizer+ increases uptake of PFOS by 30 times
Pollution ends up in leaves; to be burned or otherwise destructed

Issues/challenges
- Mild pollution, up to 100μg/kg DM
- Not suitable for hotspots

→ Complementary to traditional excavation

- One or more cultivations needed
- Estimated cost: *€250k/ha*

Expertise of

BERTELS

biotech

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Flagship phytoremediation project Campus Vesta

Context
Training site of Belgium firebrigade and police

Historical PFAS pollution in topsoil due to the historical use of fire fighting foams during past fire drills and tests

Objectives
Demonstrate phytoremediation using industrial hemp
Speed up PFAS extraction by means of soil additives

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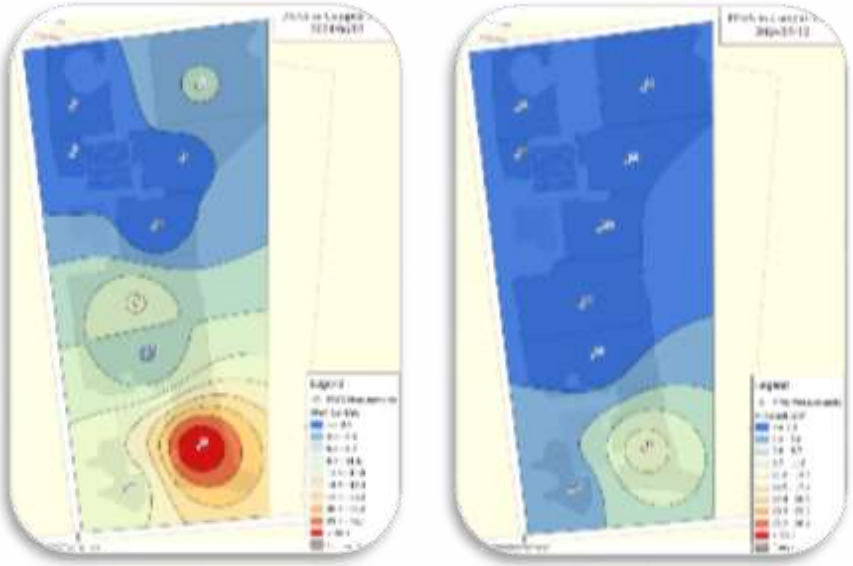
Vesta results: Soil PFAS concentration (spatial)



Findings

Heterogeneous pollution, not known from 2 preliminary soil samples, taken mid and south of the plot

-Overall reduction of PFAS of 67% was achieved

2/3 of the plot area is now below the Flemish remediation norm of 3.8μg/kgDM

Total remediation will be achieved in 2025

Vesta results: Leaf PFAS concentration (temporal)

Findings

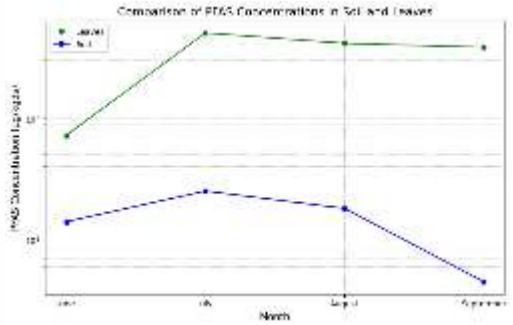
Accumulation in the leaves observed

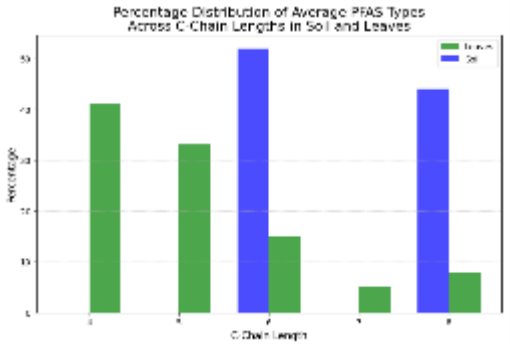
High BAF of 27 for total PFAS when applying Hempurizer+

Shorter chains present to a larger extent in the leaves

Components found in leaf that were not present in soil → conversion

BAF for PFOS of 3, ~30x faster than without soil treatment





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Services

We take care of all aspects of your phytoremediation project

- Solution Design
- Soil Preparation
- Seeding
- Harvesting
- Pollution Destruction
- Soil Pollution Monitoring

SustainableSolutionsMatch

Get in Touch

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Closing Remarks

A big thank you to all pitchers and attendees!
We appreciate your participation today.

If you'd like to connect with any of the pitching companies, please use the matchmaking tool to **book a meeting**!

Need support? **Enterprise Europe Network is here to help!**

Reach out to your local Network partner:

https://een.ec.europa.eu/local-contact-points

#EENCanHelp

Thank you!

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