

# A novel and versatile system to assess contamination-driven habitat selection in chemically heterogeneous landscapes: The ultimate system for non-forced ecotoxicology tests

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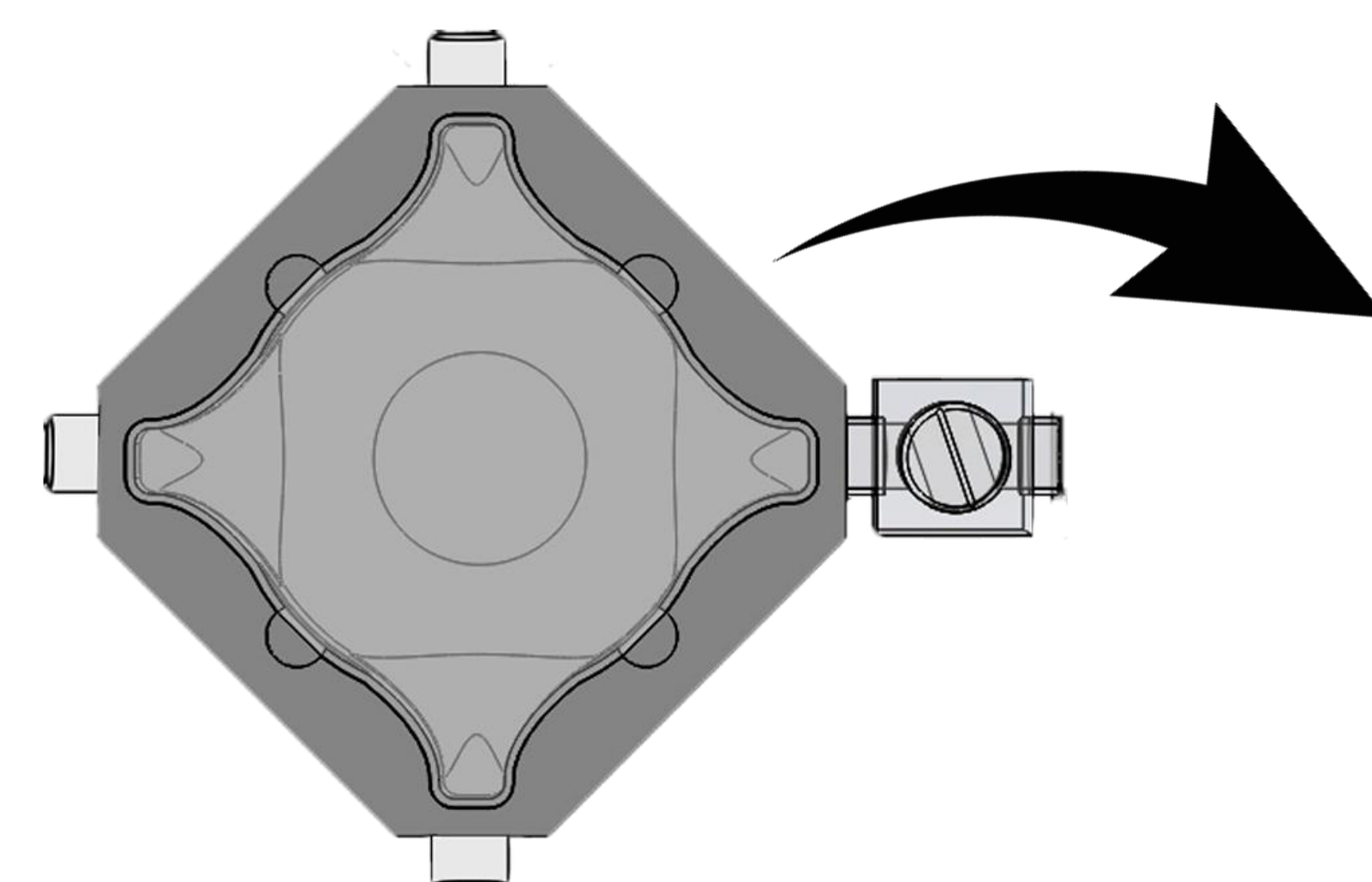
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## INTRODUCTION

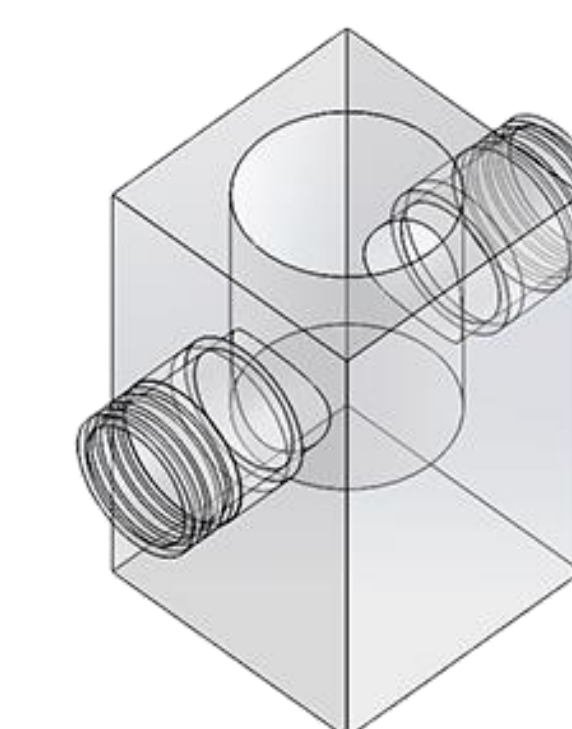
The simulation of the environmental complexity of ecosystems, either regarding the chemical heterogeneity or spatial connectivity, is a challenge to ecotoxicology. In order to provide spatially more complex scenarios, it has been created a novel experimental system: **HeMHAS (Heterogeneous Multi-Habitat Assay System)**.

HeMHAS allows simulating chemically heterogeneous environmental scenarios, throughout which organisms can move, providing alternatives that help in the evaluation of the ecosystem from a macro (spatial) point of view.

## HeMHAS – HETEROGENEOUS MULTI-HABITAT ASSAY SYSTEM



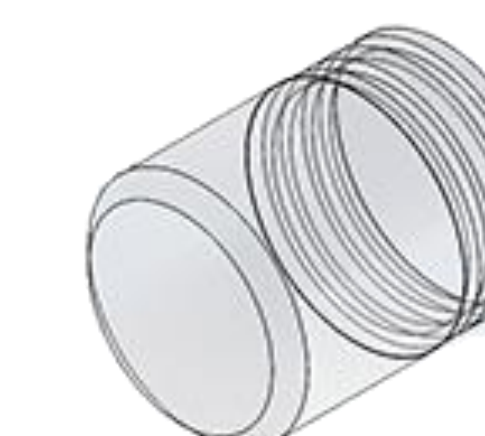
Length: 24 cm; Width: 24 cm  
Height: 8 cm; Volume: 700 mL



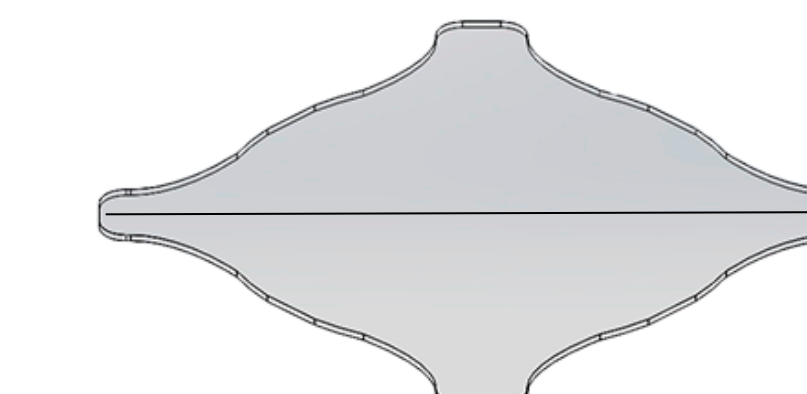
Length: 5 cm  
Width: 5 cm  
Height: 8 cm



Height: 6.5 cm  
Diameter: 3.5 cm  
Diameter hole: 2.1 cm



Diameter: 2.45 cm



Length: 22.2 cm

## SIMULATION OF ENVIRONMENTAL SCENARIOS

### WWTP discharge



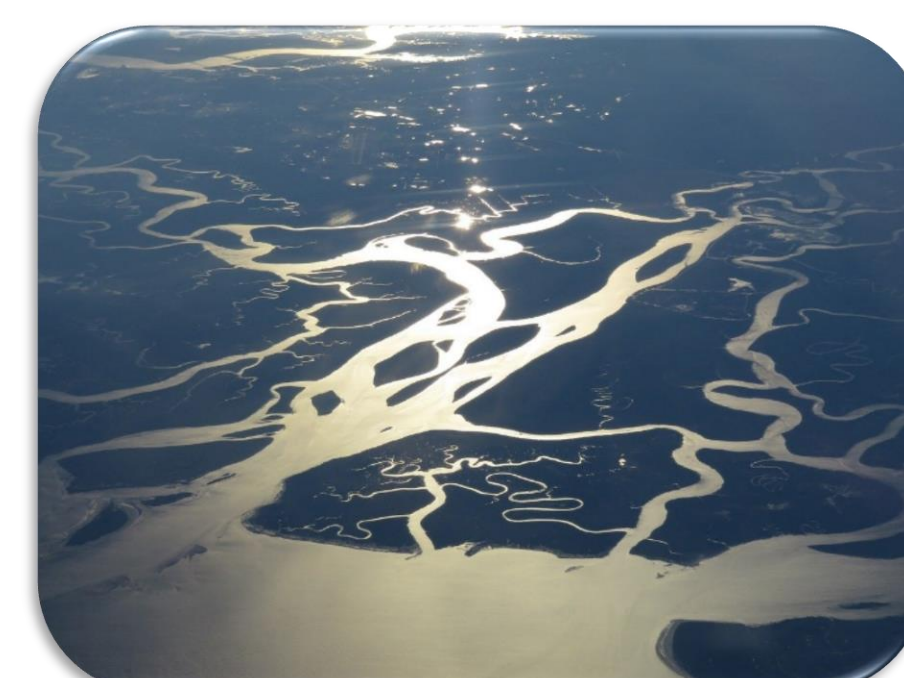
### Runoff



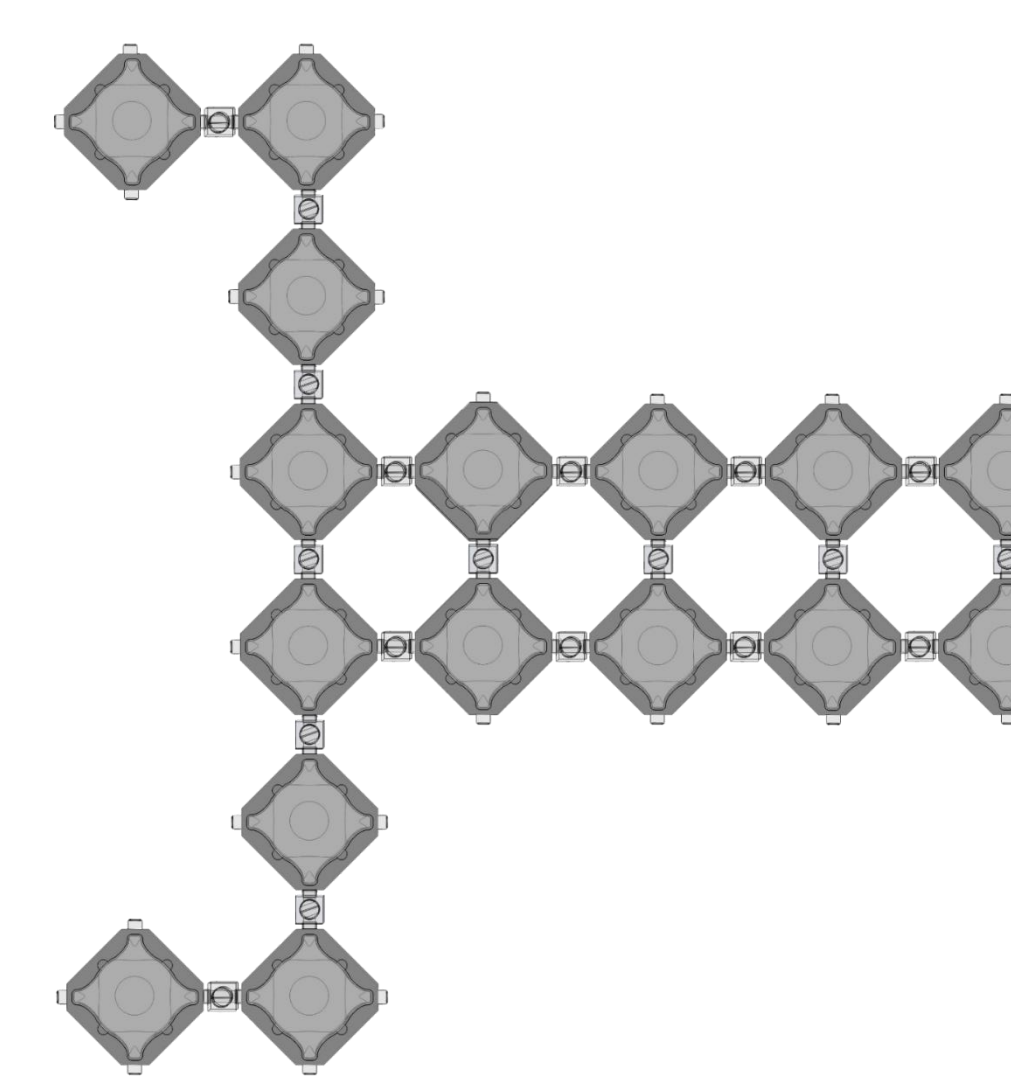
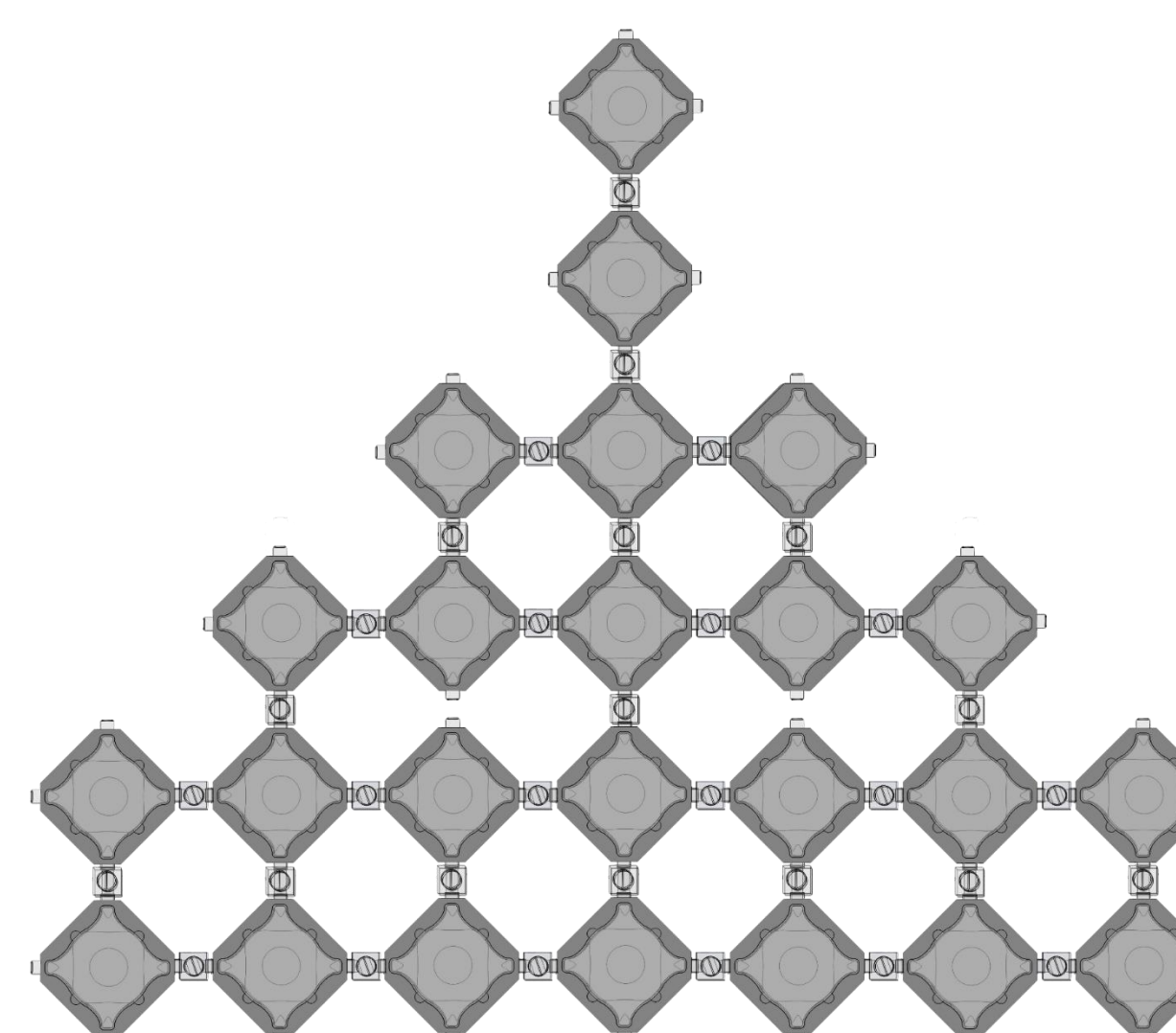
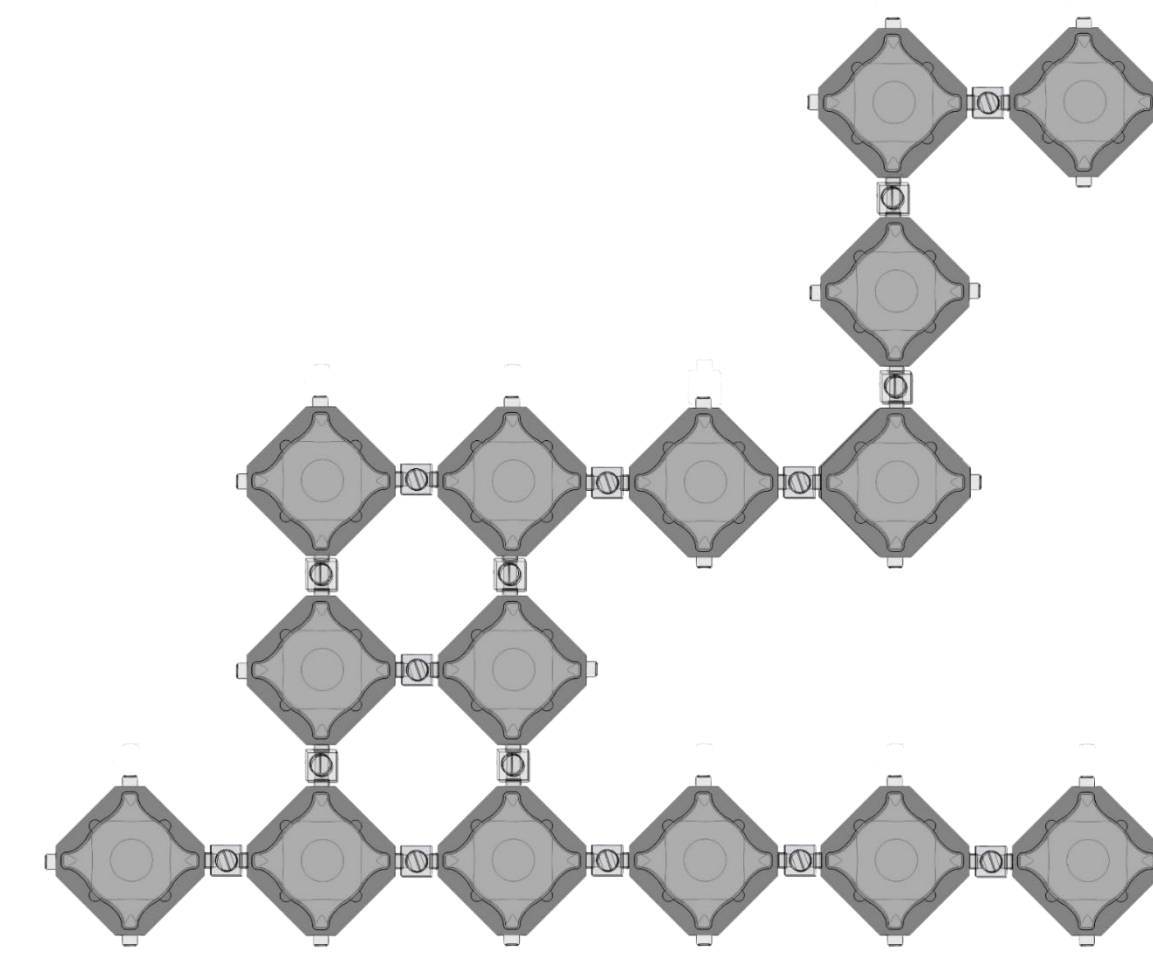
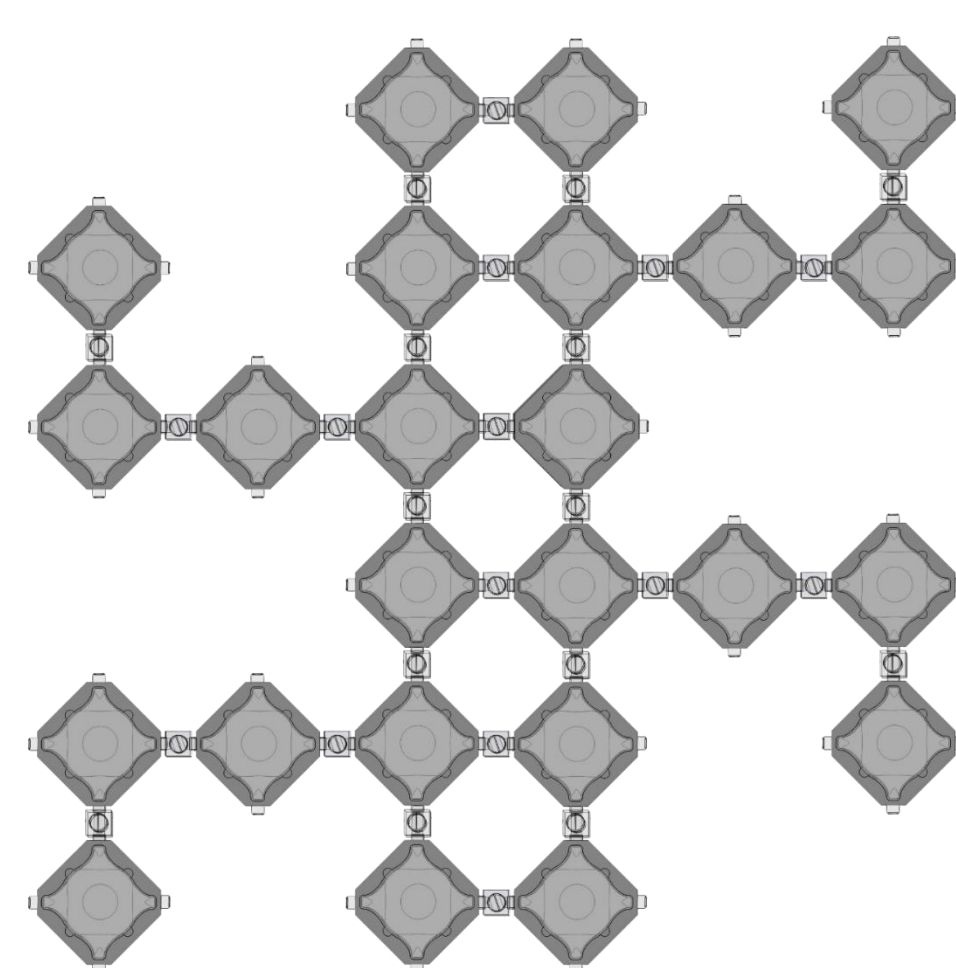
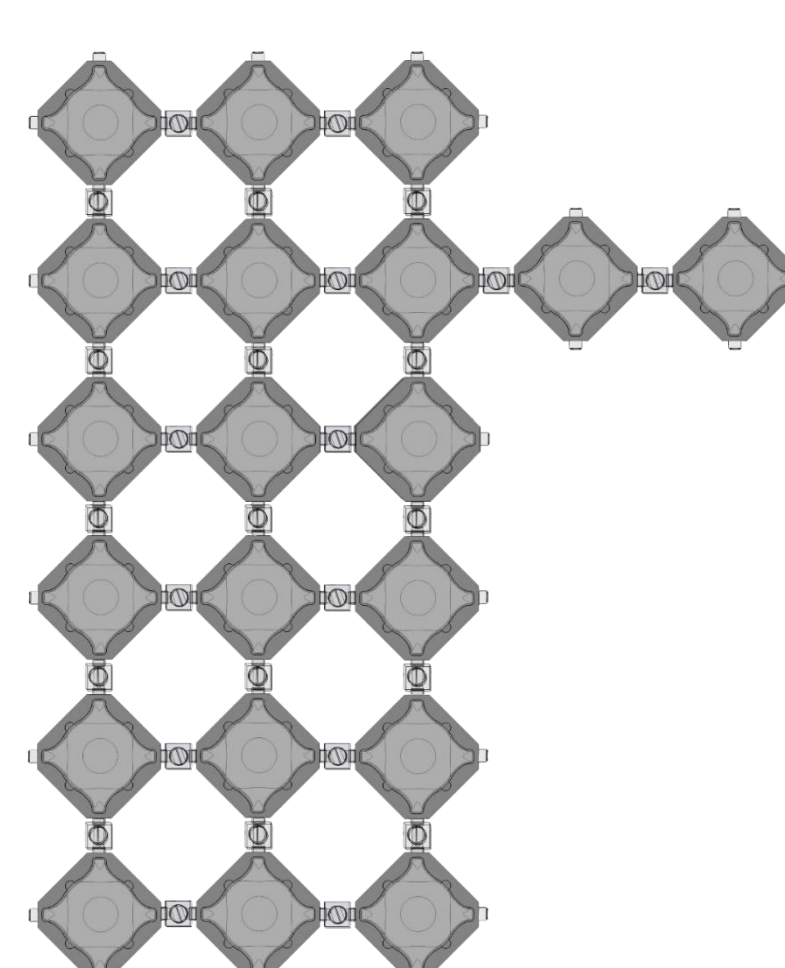
### Estuaries



### Delta system



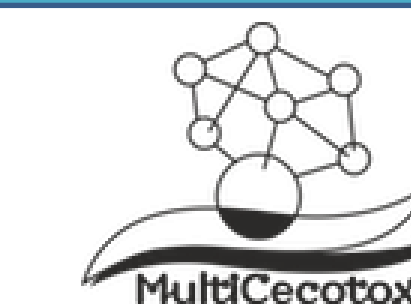
### Conjunction of rivers



## FINAL REMARKS

- HeMHAS could integrate into the ecotoxicological studies to clarify how contaminants might:
  - ✓ affect the spatial distribution of populations in a chemically heterogeneous landscape;
  - ✓ increase the loss of local biodiversity and disrupt the functioning of the ecosystems due to evasion of organisms;
  - ✓ change the ecological niche of avoiders/invaders due to the contamination-driven habitat selection.
- This novel system is a complementary tool to be used in ecotoxicology to understand the impact of contamination on the ecosystems from a spatially broader and connected environmental perspective.

## ACKNOWLEDGMENTS



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