

NATURE4NATURE

INSPIRED TO INTEGRATE: FILTERING NATURE'S DIVERSITY FOR NATURE-FRIENDLY IMPLEMENTATIONS.



Abstract

Projekttitle/ Project title:

Nature4Nature
- Inspired to Integrate: Filtering Nature's Diversity for Nature-friendly Implementations

Kurztitel/ Short title:

Nature4Nature
- Towards a symbiotic toolset for bioinspiration

Einleitung/ Introduction:

Bioinspiration (including biomimetics and biomimicry) develops novel materials, devices, and applications inspired by biological structures and strategies. However, the main obstacle preventing this field from achieving its goals derives from differences in tools, practices, and viewpoints of its practitioners.

The EU-funded Nature4Nature project brings biologists, engineers, designers, and manufacturers together to deliver early-stage researchers (ESRs) teaching in a learning environment that connects the inspiration, integration, and implementation aspects of the bioinspiration process to undertake the conceptual, methodological, and practical challenges.

To do so, the project will collectively focus on biological filtration mechanisms to explore, test, and design high-throughput, clog-resisting filtration systems, which could ultimately alleviate the current problems facing aquatic environments.

Ziel/ Aim:

The project works toward the optimization of the biomimetic development process which can be facilitated by tools and methods. In this context, the potential to optimize tool-based methods will be identified and their objectives will be broadened by including biological knowledge and by addressing environmental sustainability. Novel, more biologically informed tools for bioinspiration, with their performance assessed and compared to that of current tool-based methods are to be developed.

Methode/ Method:

The project will:

- 1) conduct a theoretical and empirical analysis of existing biomimetic tools to identify their principal characteristics, theoretical background, objectives, advantages, and drawbacks;
- 2) develop means to link these existing tool-based methods and biological knowledge by integrating biological and evolutionary concepts and processes in the context of filtration systems;
- 3) investigate how tool-based methods can be further developed to increase the impact of bioinspiration on sustainable innovation.

Ergebnis/ Result:

This project will provide fresh perspectives on the landscape of biomimetic tools. New tools/processes that enhance efficiency and information transfer during the biomimetic product development process will be developed. Additionally, this initiative will bolster involvement from the biological sciences and elevate the integration of sustainable elements.

Projektbeteiligte/ Project participants:

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Logos/ Logos:

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