

Oil float

Environmentally friendly method of removing oil from water

Invention

Previous approaches to the elimination of oil spills on water surfaces consist either of actively working pumps, chemicals or materials that absorb the oil and then have to be cleaned or disposed of. Scientists at the University of Bonn have developed a new method of cleaning water surfaces contaminated with oil. Textiles with special surface properties passively skim off the oil from the water surface and transport it into a floating container provided for this purpose. The textile used here has a superhydrophobic (water repellent) surface of hairs or grids, comparable to the surface of *Salvinia*.

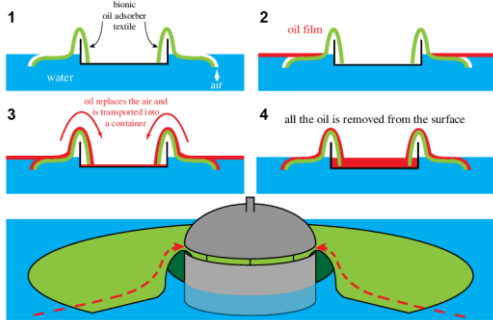


Fig.: Silently and efficiently, the bionic oil collector removes the contamination from a water surface. The adsorbent functional textiles have been developed based on an example from nature. © W.Barthlott, M.Mail/ University of Bonn

transport it into a container in a very short time. This is powered solely by gravity; the bottom of the container must therefore be below the water surface with the oil film. The main application potential is in cases of contamination of engine oil from cars or ships, heating oil or leaks, which increasingly pose a threat to our ecosystem.

Current Status

A patent has been filed for the invention. We will be happy to tell you about the status of the process. The functionality was proven experimentally. On behalf of the University of Bonn, PROvendis offers interested companies licenses for the invention and patent application.

Relevant Publications

W. Barthlott, M. Moosmann, I. Noll, M. Akdere, J. Wagner, N. Roling, L. Koepchen-Thomä, M.A.K. Azad, K. Klopp, T. Gries & M. Mail (2020): Adsorption and superficial transport of oil on biological and bionic superhydrophobic surfaces: a novel technique for oil-water separation. *Philosophical Transactions A.*, DOI: <https://doi.org/10.1098/rsta.2019.0447>

Video: <https://www.youtube.com/watch?v=wqx2sfWDPXY>

An invention of the University of Bonn.

Commercial Opportunities

This invention is a new environmentally friendly process, without the use of chemicals, in which it is possible to remove the oil almost completely from the water surface and

Competitive Advantages

- No emissions as no machinery is required
- Scalable through variability in the dimensioning of the oil float
- Reusable
- No additional environmental impact
- Can be used in nature reserves
- Device can be visually adapted to the operating environment
- Can be used prophylactically
- Long-term use possible
- Silent operation

Technology Readiness Level

123456789

Experimental proof of concept

Industries

- Environmental engineering
- Industrial accessories
- Gas stations
- Boat & marine technology
- Workshops & automotive
- Hydraulic systems

Ref. No.

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