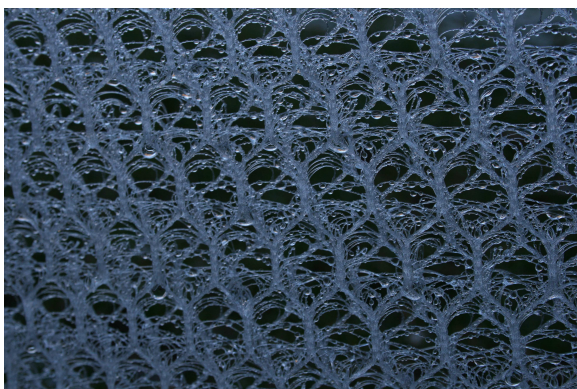




Textile materials for drinking water extraction

The provision of drinking water is one of the great challenges of mankind in the future. In the development countries especially, the drinking water supply is not reliably ensured. A current bionic project analyses water extraction from morning dew by fiber-based materials promising a great natural potential concerning corresponding functional mechanisms.



In nature there exist different herbal and animal examples that can be taken as a model for water separation from the air. As for this project, the *Zophobas morio*, a species of darkling beetle, as well as plants occurring in desert areas which catch the required water from the mist are analyzed.

The project is the basis for the installation of large mist collectors which – besides multiple dwellings – can also supply whole villages and schools with water and also can efficiently be used in irrigation systems for cultivated plants, but also in innovative filtration applications.

These are the planned innovation steps:

- targeted textile fiber production regarding water adsorption and water release
- development of surface coatings of fiber materials for the spectral properties
- development of micro and nano-structures for the collection as well as discharge of the extracted water
- design of the textile by exploiting the third dimension for the improvement of mist elimination.

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