

# Using water responsible materials in the industry

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## Introduction

From the very beginning of our existence, we have always wanted to benefit from the work of others. Starting with the water mill, ending with attempts to create systems capable of obtaining energy from the surrounding resources nowadays. For example solar panels or hydroelectric power plants. Well, what if I tell you that this can be done much easier ... With the help of water responsible materials. This area is still very young and little studied, but despite this, we will try to show that it is very promising. With these materials, we made 2 types of experiments and one demonstration, the results of which are given below.

## Process

- In the first experiment, we determined how much the energy of a deformed and non-deformed film differs by calculating water responsive energy density from bilayer films.
- In the second experiment, we determined to what height the films are able to lift the load due to deformation.
- In demo, we made a flower that closes when humidity increases.

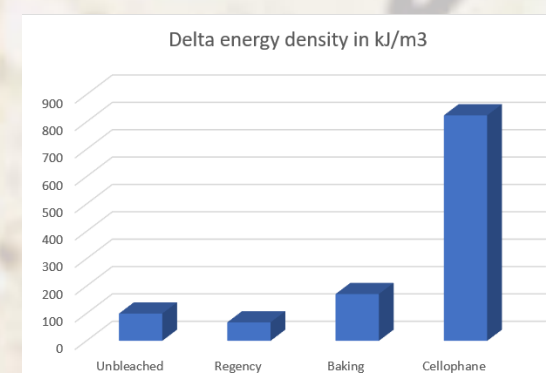
As a basis for the film we used four materials:

- Unbleached parchment paper
- Regency parchment paper
- Baking parchment paper
- Cellophane

we considered the deformation of the film at humidity levels of 10% and 90%

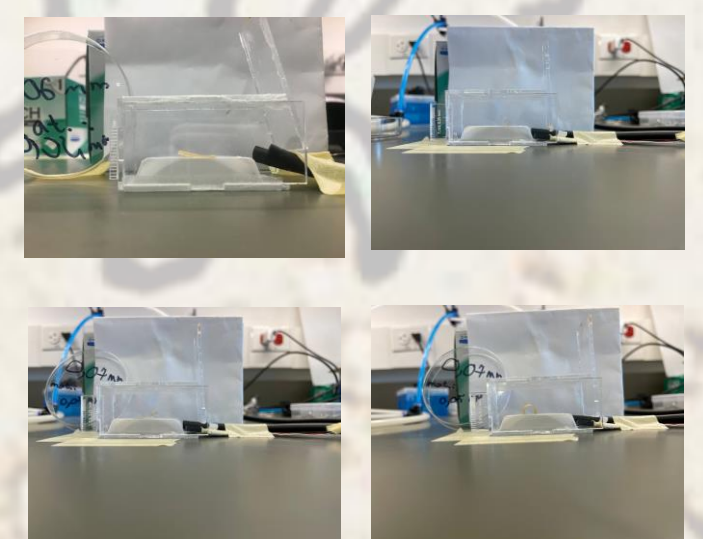
## Results

Determination of the energy density difference

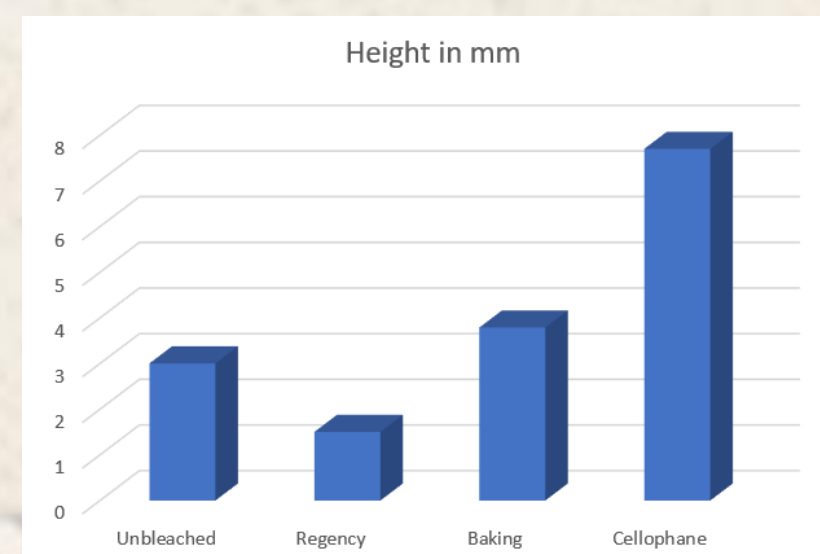


10% humidity

90% humidity

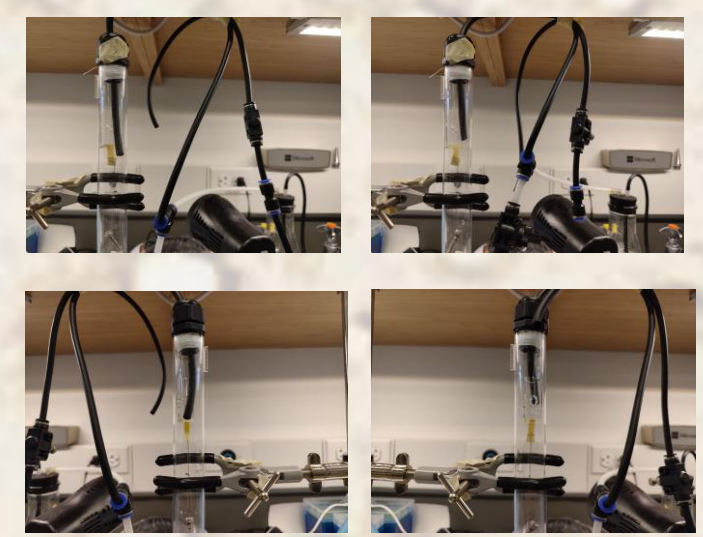


Determination of the lifting height of the load



10% humidity

90 % humidity



Demo



Low humidity



High humidity

## Conclusion

We did some experiments and one demo. By the way, of all the materials we tested, cellophane showed the best results.

Based on the results of experiments, we can say that the use of water responsible materials in the industry is more than justified. Surprisingly, even with such elementary examples, one can be convinced of the reality of creating mechanisms that can be based on this effect.

Another area of application of water responsible materials can be the creation of an artificial exoskeleton for military or industrial purposes. Unlike conventional exoskeletons, they will be much lighter and will use water as fuel.

All things considered, we would like to say that this area is very promising and open to new discoveries.

