

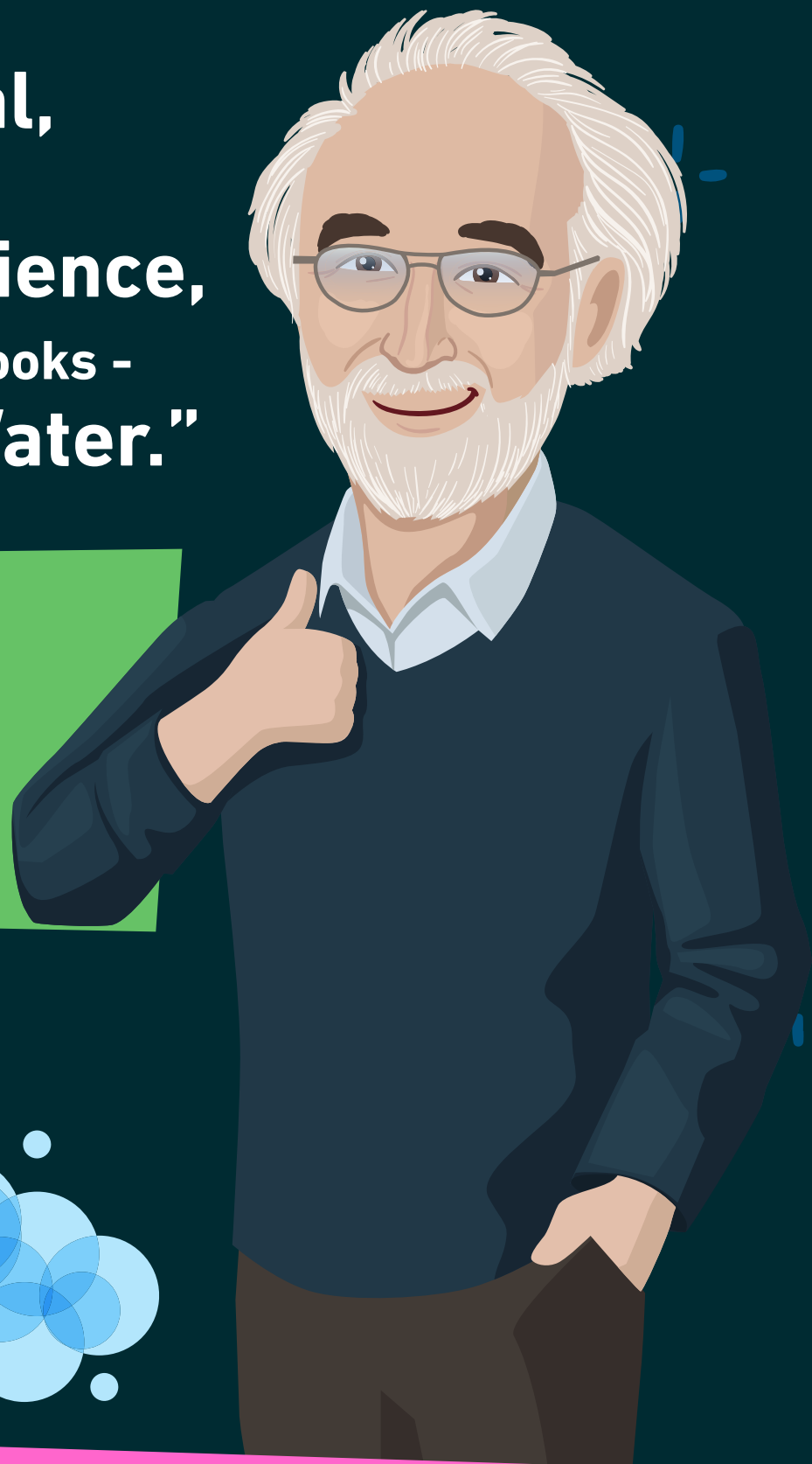
# Gerald Pollack

is a professor of Bioengineering at the  
**University of Washington**,  
the Founding Editor-in-Chief of the  
**WATER** research journal,  
the Executive Director of the  
**Institute for Venture Science**,  
and the Author of - among other books -  
“**The Fourth Phase of Water.**”

(DON'T!)

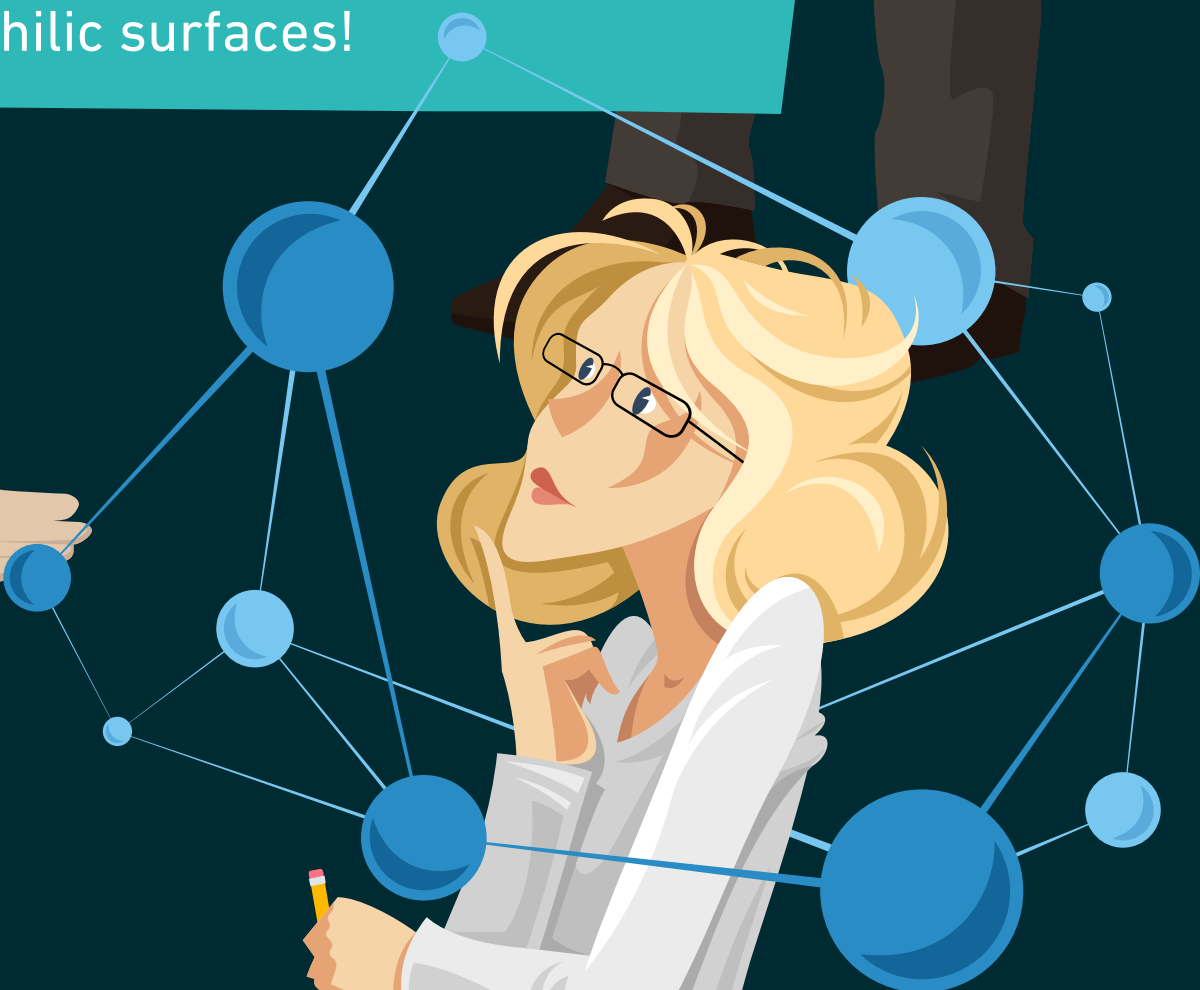
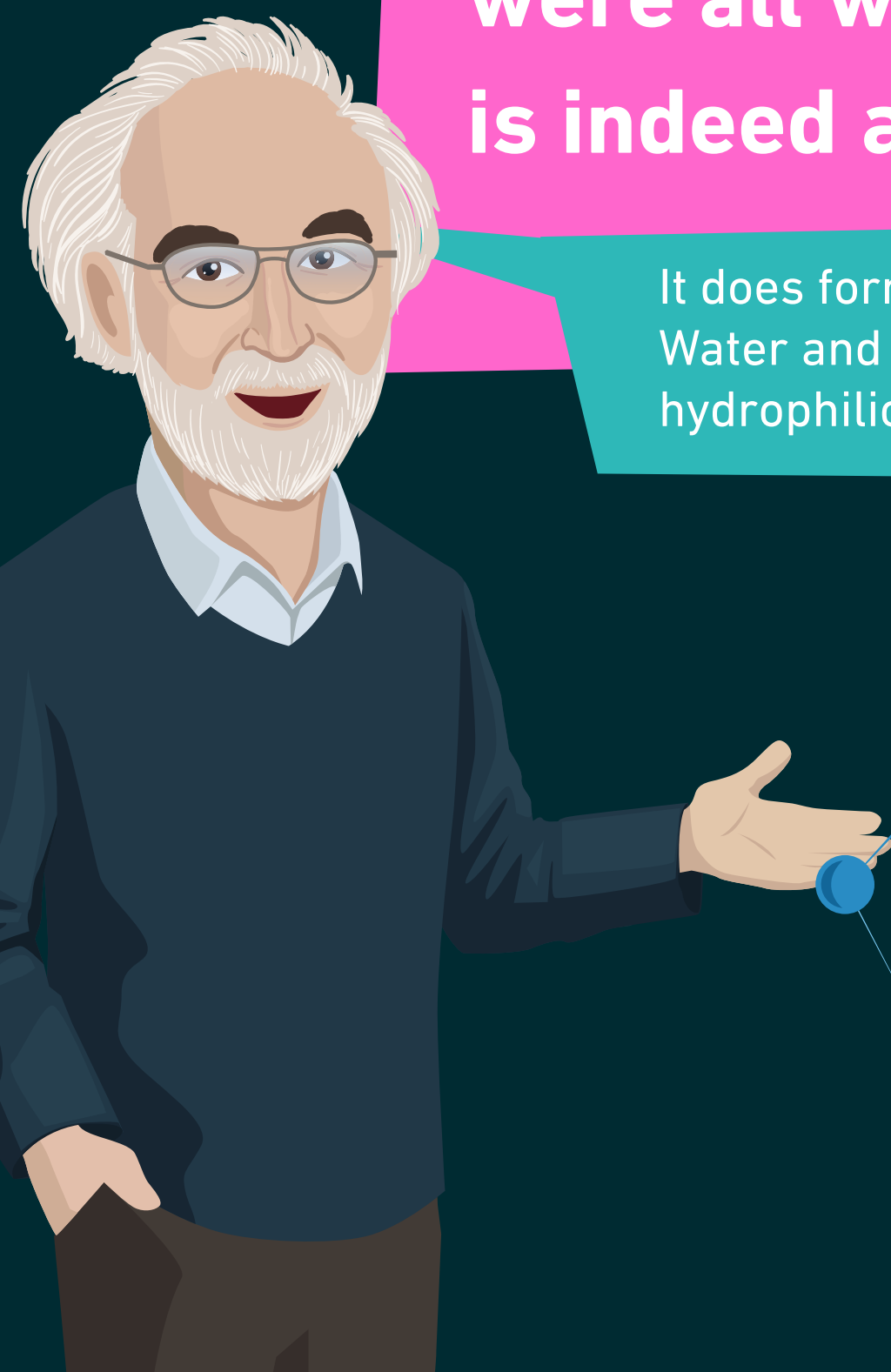
**WASTE  
WATER**

We all know it as a fact,  
Water has three phases:  
Solid, Liquid, and Gas.



But what if I told you that we  
were all wrong and that there  
is indeed a fourth one?

It does form at the surface of  
Water and the interfaces, next to  
hydrophilic surfaces!



(DON'T!)

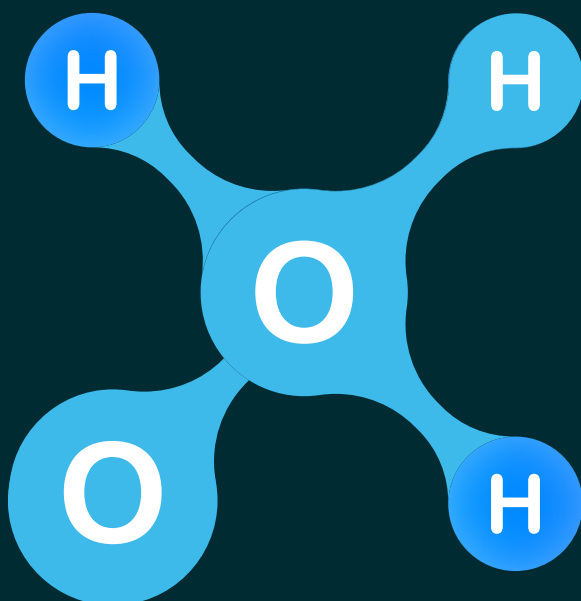
**WASTE  
WATER**

**How to spot it? This fourth phase tends to exclude any molecule that is not Water - which Gerald's team could spectacularly picture using microspheres.**

**But there's more:**

The water molecules adjacent to that surface undergo a radical transformation. They form a sheet-like array with a hexagonal motif consisting of hydrogen and oxygen atoms.

**Hence, the formula of Water evolves: in its fourth phase, Water becomes H3O2.**



(DON'T!)

**WASTE  
WATER**

... and as it excludes almost everything from it because it's dense and tightly packed, we called it "Exclusion Zone Water" or "EZ Water"

**OK, but how does it form? The answer came through Serendipity.**

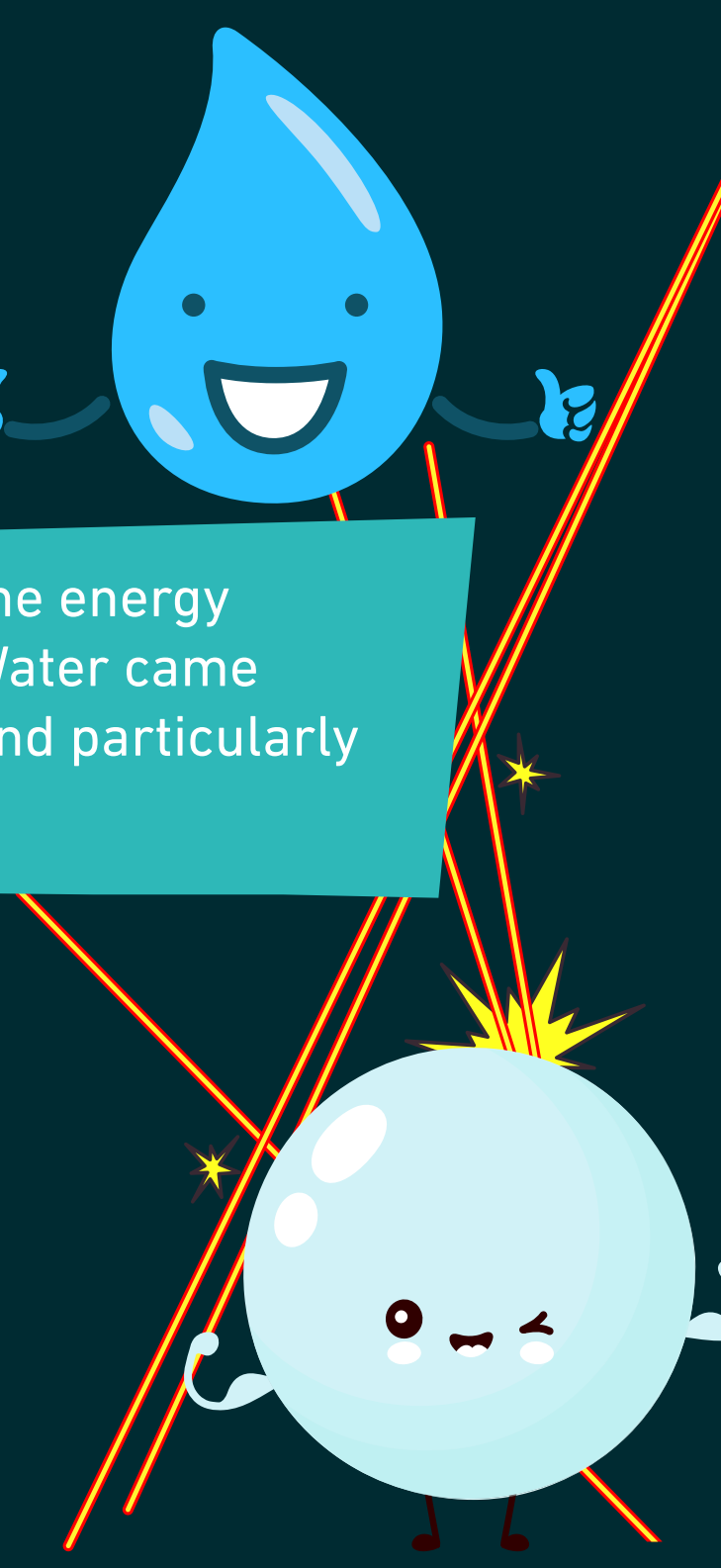
**One evening, a student left an EZ Water sample under the microscope, just turning down the light when leaving.**



**The next day, the EZ size had halved. But when turning the light back on, within minutes, it had regained its original shape!**



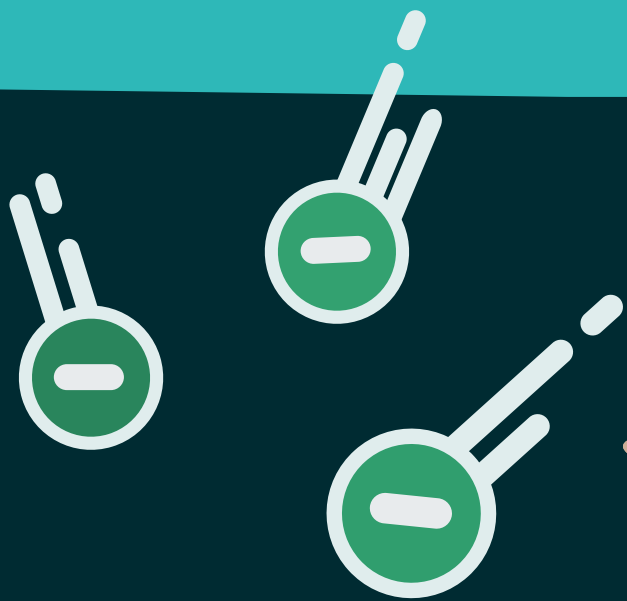
He thus found that the energy needed to form EZ Water came from incident light and particularly infrared light



Indeed, light triggers a separation of charge, with  $H^+$  and  $OH^-$  ions parting ways, leading to a surprising characteristic of EZ Water:

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**WASTE WATER**

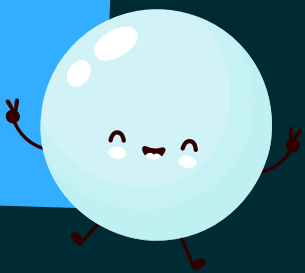
A feature of that transformation is that the EZ Water structure is not neutral anymore. It has a negative charge!



And how do you call a body with a separation of charge?

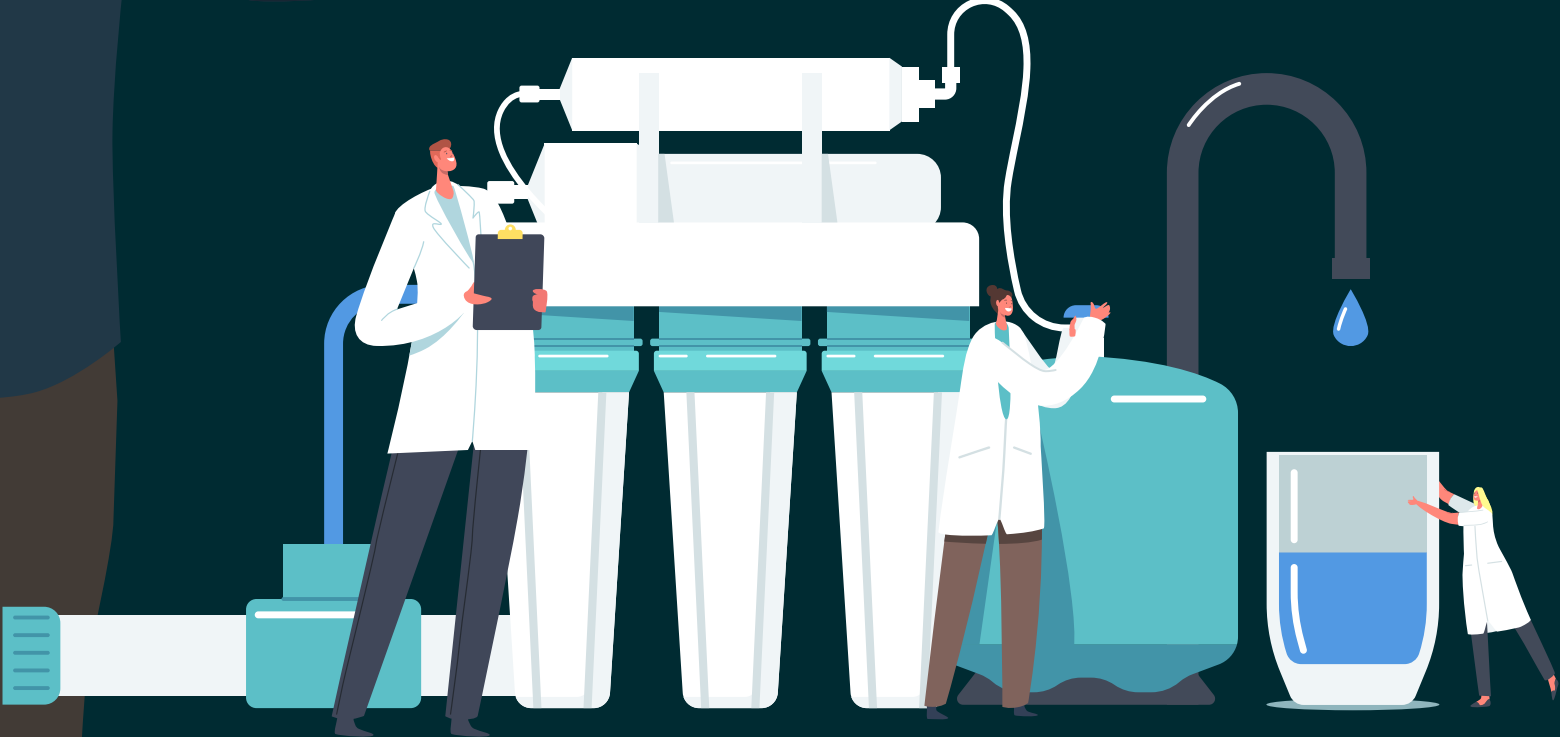
Exactly:

**a Battery**



This “Water Battery” is one of the two main applications of his discovery that Gerald Pollack aims to develop.

Yet even more exciting for Water Professionals, he’s also working on a “Water Purifier.”





If you put Water, containing any kind of pollution, including pharmaceuticals or microplastics, into an apparatus that can create an EZ, all the pollutants get excluded from the EZ

(DON'T!)  
**WASTE  
WATER**

**... all of that, using renewable energy sources, like light or infrared.**

**Too good to be true?**

It does work!  
It works  
beautifully in the  
laboratory.

**The Future will tell if it can  
work at scale as well.  
Well, Future... and  
Funding!**

### **We also covered:**

- How the formation of EZ Water bears a surprising resemblance to the first step of Photosynthesis
- How Gerald Pollack's work follows in the steps of Boris Derjaguin's discovery of "Polywater"
- How Water is a surprisingly low investigated field of fundamental science (despite many water questions being still open)
- How "Fourth Phase Water" somehow barely isn't Water anymore, and could have been called "semi-liquid" or "crystalline water"
- How like-charged particles may well attract each other without breaking any law of fundamental physics
- How "EZ Water" opens the door to discuss esoteric water topics like the theories of Viktor Schauberger and Rudolf Steiner
- How many known everyday phenomena may be better explained through the lens of "EZ Water"
- Challenging prestigious names and theories, advocating for a "Venture Science" approach to research, discussing the memory of Water, and so much more!

**Don't miss a single bite: head over to [dww.show!](http://dww.show!)**

