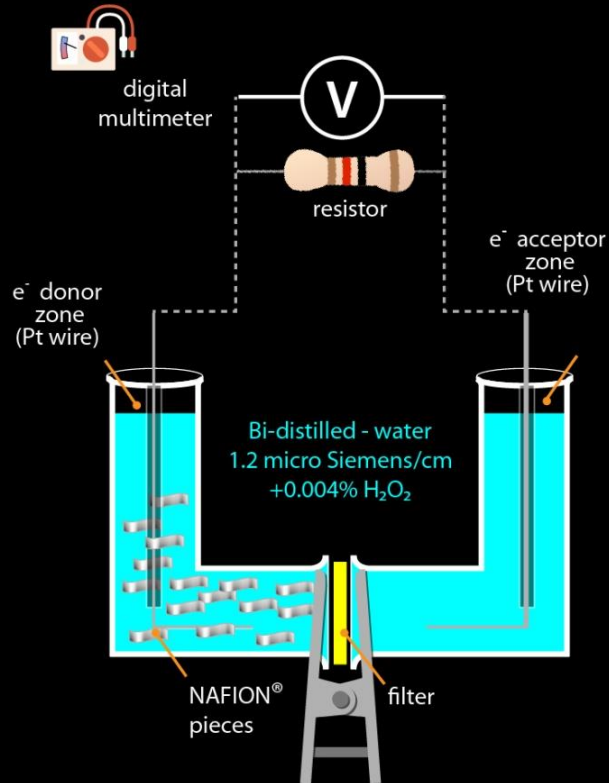


# Project OXHYDROELECTRIC EFFECT

Procedure and apparatus to extract  
electric energy from water



# Description



It is a technological breakthrough, correlated to a new experimental phenomenon coming from Quantum Electrodynamics applied to the study of water.

The Oxhydroelectric Effect consists in the extraction of an electric current from bi-distilled water, using two identical platinum electrodes, where the current is fed from the simple environmental heat, and mediated by oxygen molecules, and a special polymer, where electrical current is powered by the simple environmental heat, a kind of infrared photovoltaic cell.

It's really a  
technological breakthrough!



# Intellectual property

Italian patent

1411927

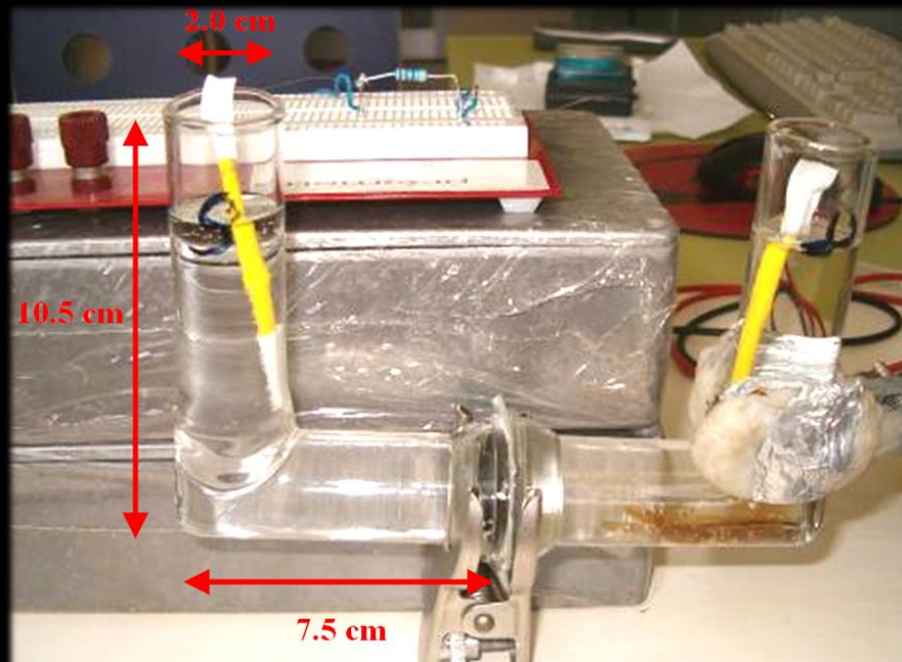
Procedimento ed apparato per  
l'estrazione di energia elettrica  
dall'acqua

(Procedure and Apparatus to  
Extract Electric Energy from  
Water)

Inventors:

Roberto Germano, Vittorio Elia.

Patent holder: PROMETE srl



# Voltage vs time across the resistor

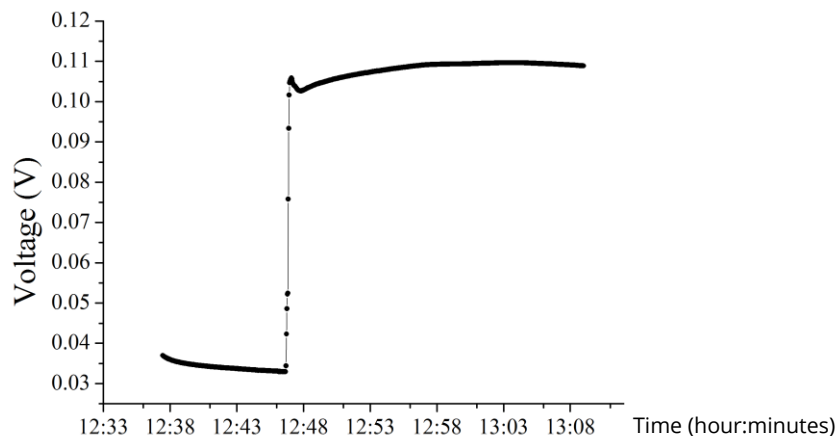
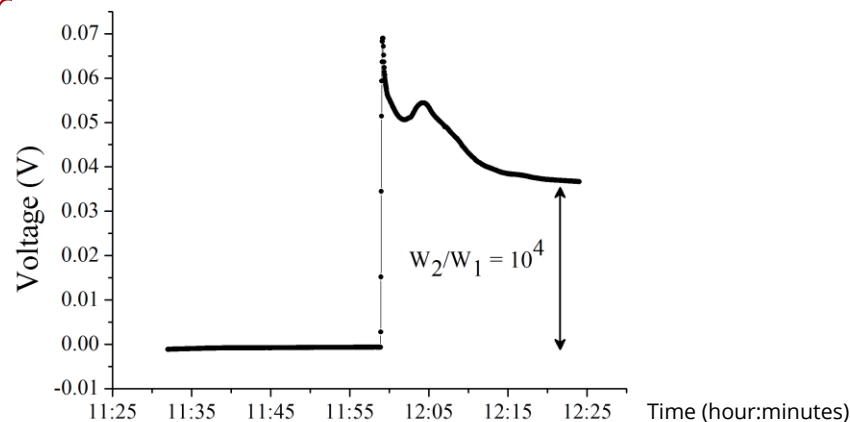
## Before the addition of $\text{H}_2\text{O}_2$

Note the jump from an electric power of  $W_1 = 2.6$  picroW to the plateau power  $W_2 = 0.03$  MicroW ( $W_2/W_1 \sim 104$ ).

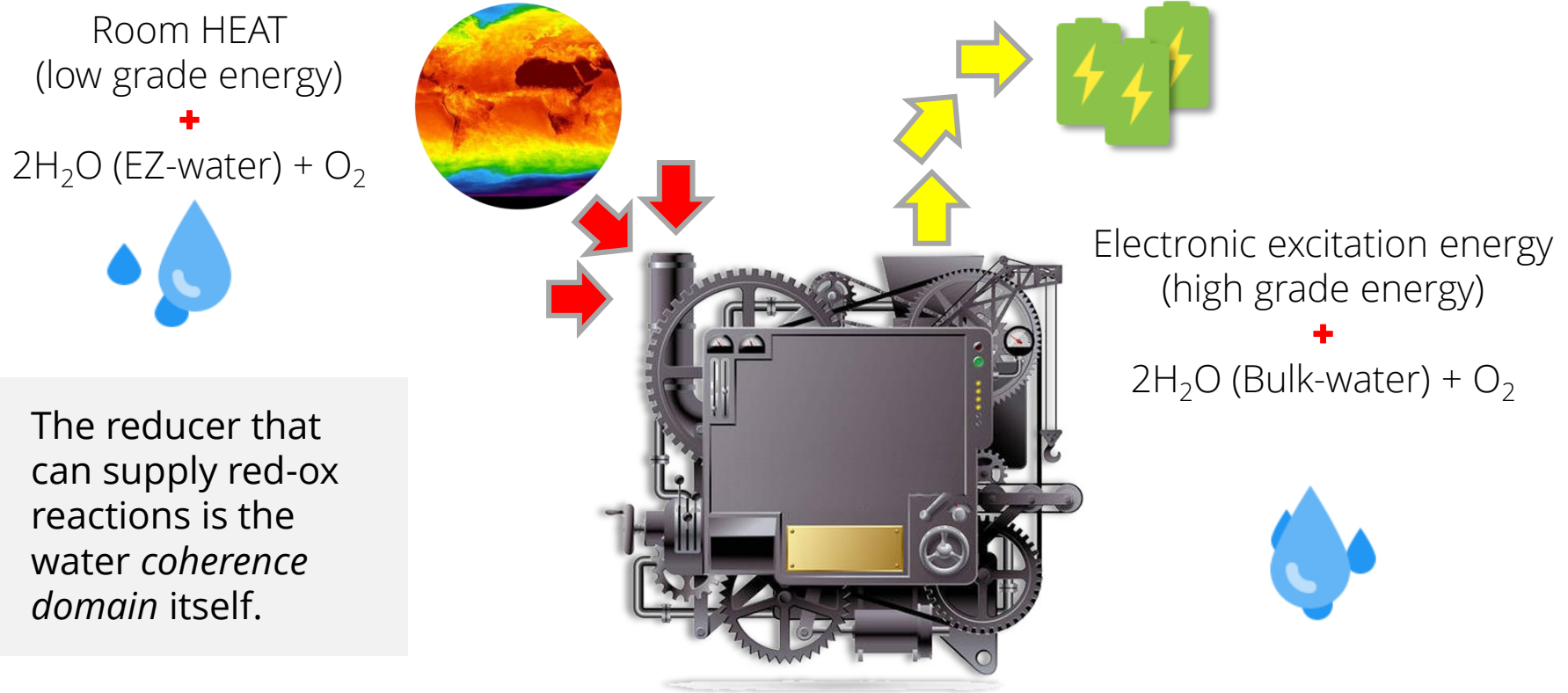
A subsequent addition of a similar amount of  $\text{H}_2\text{O}_2$  to both semi-cells generates another jump of electrical power extracted which goes up to  $W_3 = 0.2$  MicroW .

## After the addition of $\text{H}_2\text{O}_2$

that is about 5 orders of magnitude greater, when compared to initial value  $W_1$  ( $W_3/W_1 \sim 80\,000$ ).



# "Work cycle" of the new phenomenon.



## how much energy it produces ?

In the experiments conducted up to now, an electrical power of the order of **0.2 microwatt is extracted** by bidistilled water.

So, although it is a totally new phenomenon, it should be noted that not negligible electric powers are obtained;

e.g. it would already be able to feed a RAM of new generation (2011).

This obviously leaves hope in the possibility to make new type of "solar cells" operating in the **infrared**,

i.e. even in those conditions that our eyes are considering "dark", always rich of infrared radiation.

Needless to say, this may be a true technological revolution.

# Potential applications

In any situation where green energy is required

The Oxhydroelectric effect may be the basis for new systems of electric energy production with low environmental impact, not centralized, and low cost.

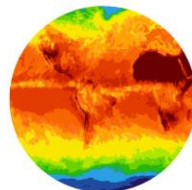
improved efficiency of the reactions in the chemical industry



reduce pollution



new Photovoltaic Systems based on infrared radiation



higher efficiency fuel cells

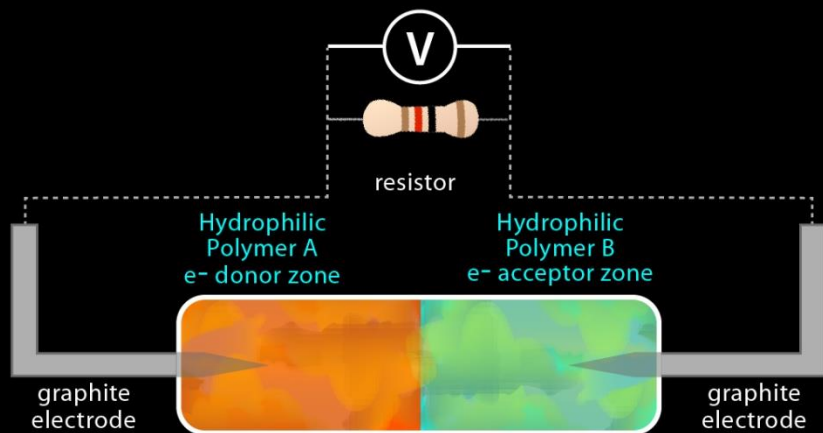


green energy research





# Advancements



The new version uses a strongly hydrophilic polymer, **cheaper material** that replaces the NAFION®

electric current **extraction lasting months** (only limited by the mechanical property of the polymers);

**no more decaying;**

low cost **electrodes** (graphite) ;

**no more micrometer filter** is necessary;

working also **without H<sub>2</sub>O<sub>2</sub>** ;

highly sensitive to **light** (especially infrared)

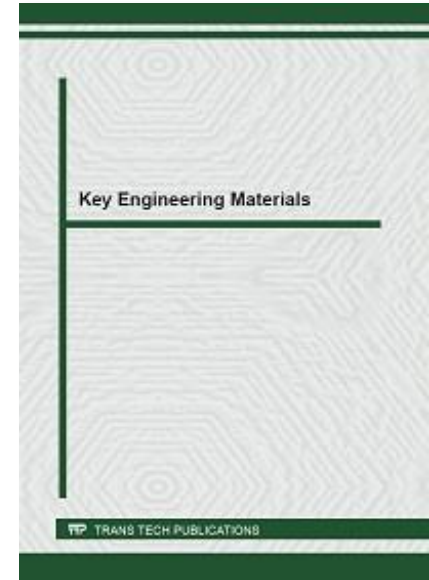
# Technology readiness level: 3

## Experimental proof of concept

International papers:

R. Germano et al.,  
Oxhydroelectric Effect:  
Electricity from Water by  
Twin Electrodes,  
*Key Engineering Materials*,  
495, 100-103 (2012)

R. Germano et al.,  
Oxhydroelectric Effect in  
bi-distilled water,  
*Key Engineering Materials*,  
543, 455-459 (2013).



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