



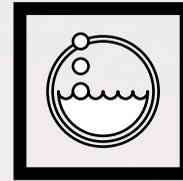
AQUATECH



VIDREPUR

GLASS MOSAICS

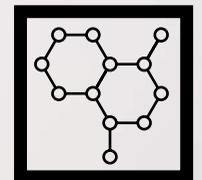




AQUATECH

BY VIDREPUR

COMMITMENT
TO THE ENVIRONMENT
AQUATEC BY VIDREPUR
IS THE ONLY GLASS
MOSAIC ANTI-POLLUTION AND
BACERIDIAL

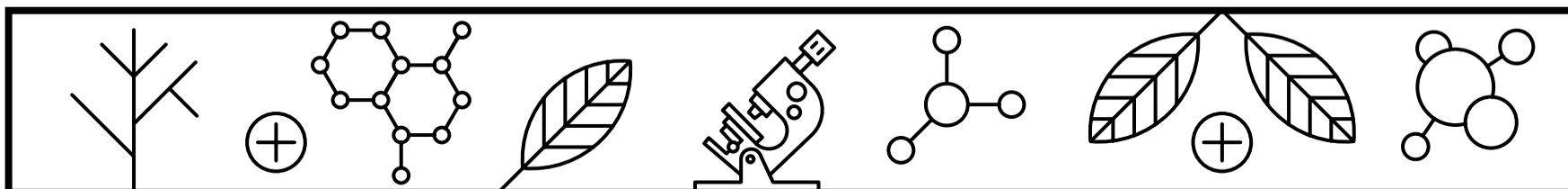


WHAT IS NANOTECHNOLOGY

Nanotechnology is the study, design, creation, synthesis, manipulation and application of materials, devices and functional systems through the control of matter at nanometre scale, and the exploitation of the phenomena and properties of matter at the nanoscale.

When matter is manipulated on the minuscule scale of atoms and molecules, it demonstrates entirely new phenomena and properties. Therefore, scientists use nanotechnology to create novel and inexpensive materials, devices and systems with unique properties. Nanotechnology promises cutting-edge, efficient solutions to environmental problems, as well as to many other concerns faced by humanity.

At Vidrepur's R&D department, we have harnessed this new technology to enhance the properties of mosaic tiles for use in places such as swimming pools and showers, which are exposed to bacteria, dirt and other contaminants in the environment and water.

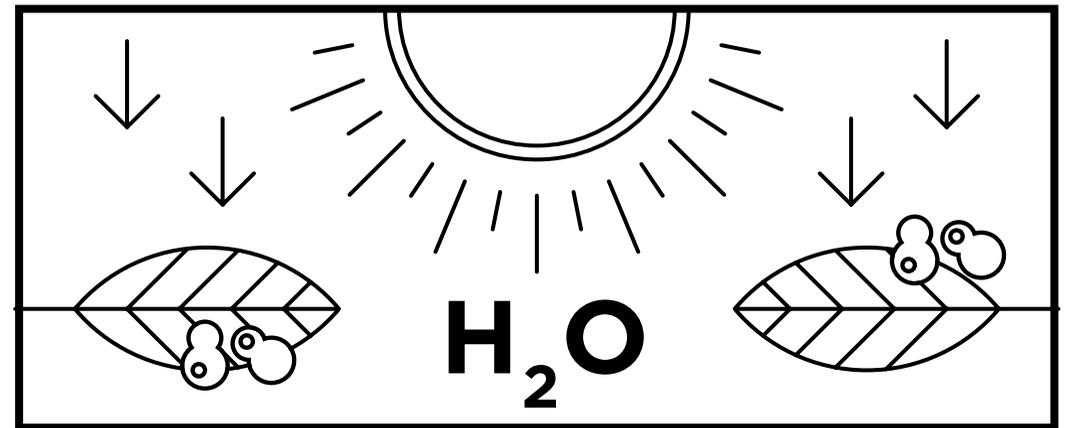




PHOTOCATALYSIS

Photocatalysis is a reaction that uses light to activate a substance. This substance is known as a catalyst which increases the rate of a reaction by reducing the activation energy.

Heterogeneous photocatalysis is considered one of the new “Advanced Oxidation Technologies” (AOT) that are commonly used for air and water purification treatments.



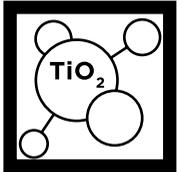
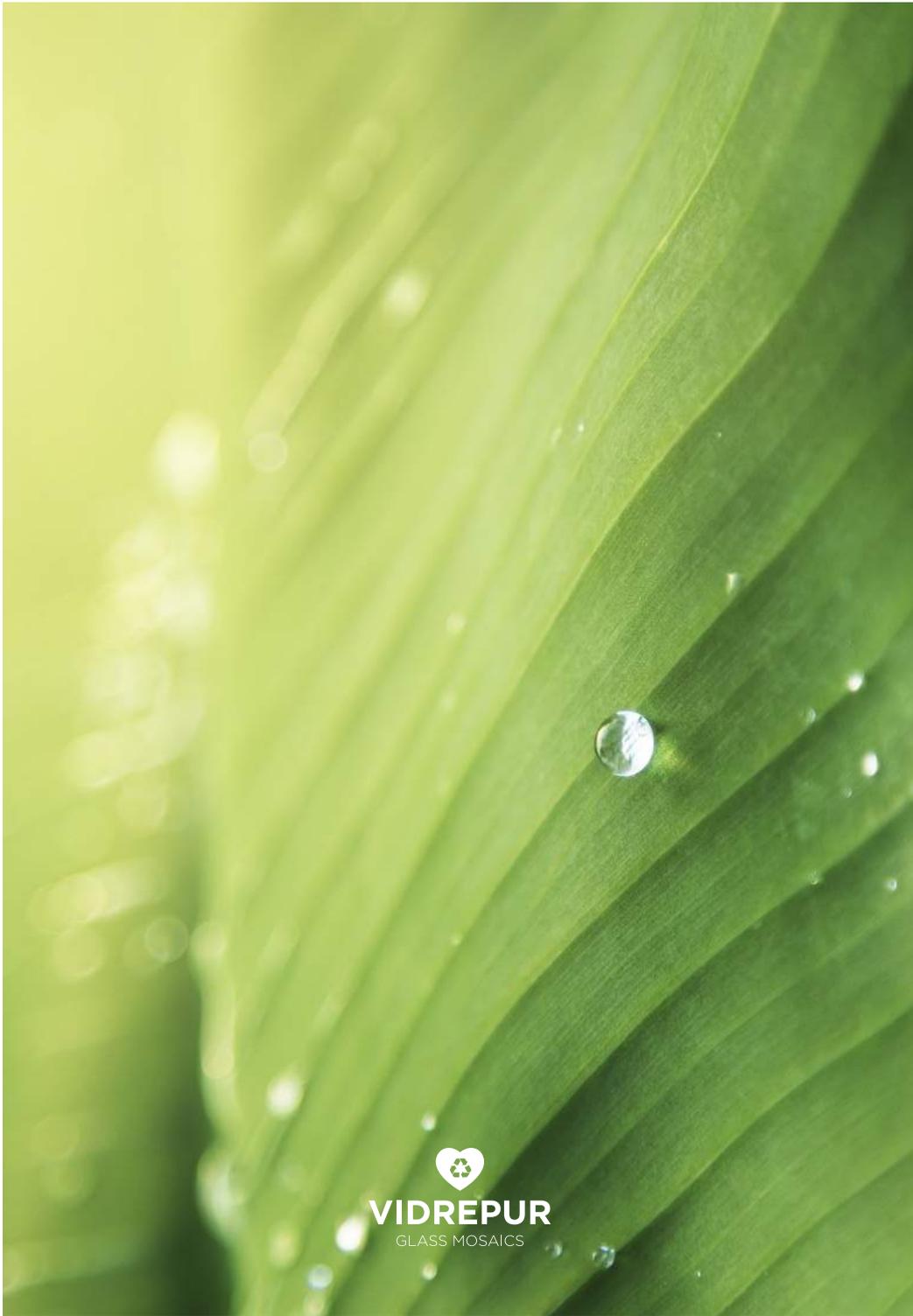
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MECHANISM OF PHOTOCATALYSIS

When titanium dioxide (TiO₂) absorbs ultraviolet radiation from sunlight or an illuminated light source (fluorescent lamps), it produces pairs of electrons and holes. The electron of the valence band of titanium dioxide becomes excited when illuminated by light. The excess energy of this excited electron promotes the electron to the conduction band of titanium dioxide and therefore creates negative-electron (e⁻) and positive-hole (h⁺) pairs.

The positive-hole of titanium dioxide breaks up the water molecule to form hydrogen and hydroxyl radicals (OH⁻). The negative-electron reacts with the oxygen molecule to form a superoxide. This cycle continues for as long as light is available.

Therefore, a photocatalytic system based on nanotechnology consists in exciting nanoparticles of a semiconductor that, when illuminated by solar radiation or artificial light, are photoactivated, causing a series of primary redox reactions.

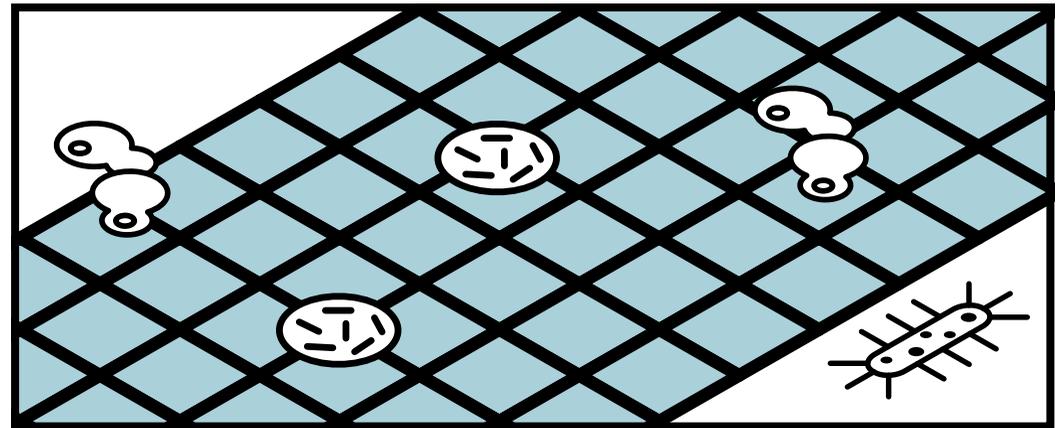


NANOCOATING

A nanocoating consists of a thin protective film formed by nanoparticles. Our nanoparticles are dispersed in different media, mainly aqueous, odorless and non-toxic, ready for use on different materials.

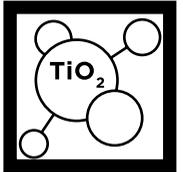
These nanocoatings are based on different components such as titanium dioxide (TiO₂), ideal for creating photocatalytic nanocoatings, although they are combined with other elements such as silver to improve their biocidal functions.

The photocatalytic effect lasts for a long time.



A photocatalytic surface has the following properties:

- Superhydrophilic / Self-cleaning.
- Antibacterial and antiviral.
- Antifungal, anti-moss.
- Deodorizing.
- Antistatic. Anti-dust.
- Anti-UVA.
- Environmental decontamination.



ADVANTAGES OF NANOCOATINGS



1. Superhydrophilic / Self-cleaning:

A self-cleaning nanocoating is a photocatalytic layer combined with nanotechnology. Generally, detergents reduce the surface tension of the water and thus reduce the contact angle. When the surface of the photocatalytic film is exposed to light, the contact angle of the water with the surface is gradually reduced. After exposure to light, the surface becomes hydrophilic.

The nanocoating demonstrates its excellent hydrophilic properties under minimal irradiation. The contact angle of the surface is reduced to 10° which offers us the following benefits. The surface does not repel the water, which forms a thin sheet on the surface, making the formation of water drops impossible. This prevents limescale or the build up of dirt.

2. Antibacterial and antiviral

Titanium dioxide is known as one of the new sterilisation materials, and eliminates 99% of known bacteria and viruses, including variants of influenza such as bird flu, swine flu and SARS. It is widely used in places with high sterilization standards, such as hospitals, institutions, schools, etc.



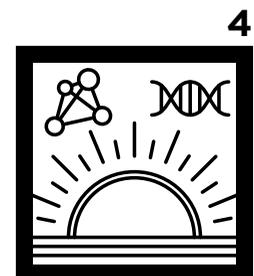
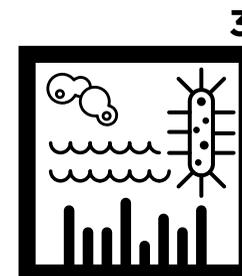
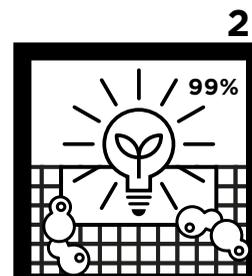
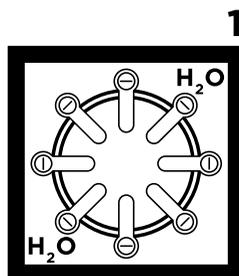
Titanium dioxide itself is not toxic to microbes or cells. The sterilization function is activated only after irradiation with UV light. In the presence of light, the oxidizing energy of titanium dioxide destroys the cell wall and the membrane of the bacteria, reacting with the cell component, which inhibits the activity of the bacteria and ultimately leads to the death and decomposition of the bacteria.

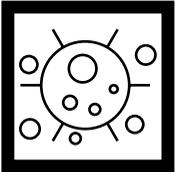
3. Antifungal, anti-moss.

The product prevents the appearance of fungi and mould and slows the growth of algae, keeping the surface spotless, even when the surface is covered with water. It is a great way to prevent the growth of algae in swimming pools or spas.

4. ANTI - UVA

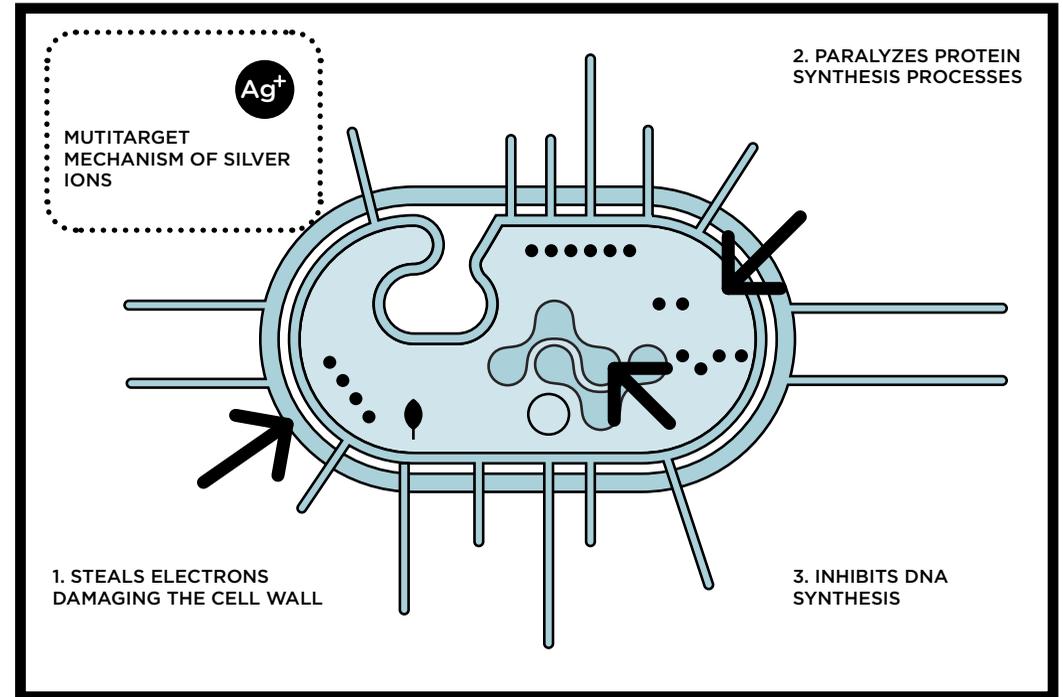
This is an innovative way of applying nano TiO2 for the purpose of protecting from ultraviolet rays; transparent nanocoatings can be applied on a multitude of surfaces. Cover the surface with a film of just a few hundred nanometres and the substrate will offer highly efficient anti-ultraviolet properties.

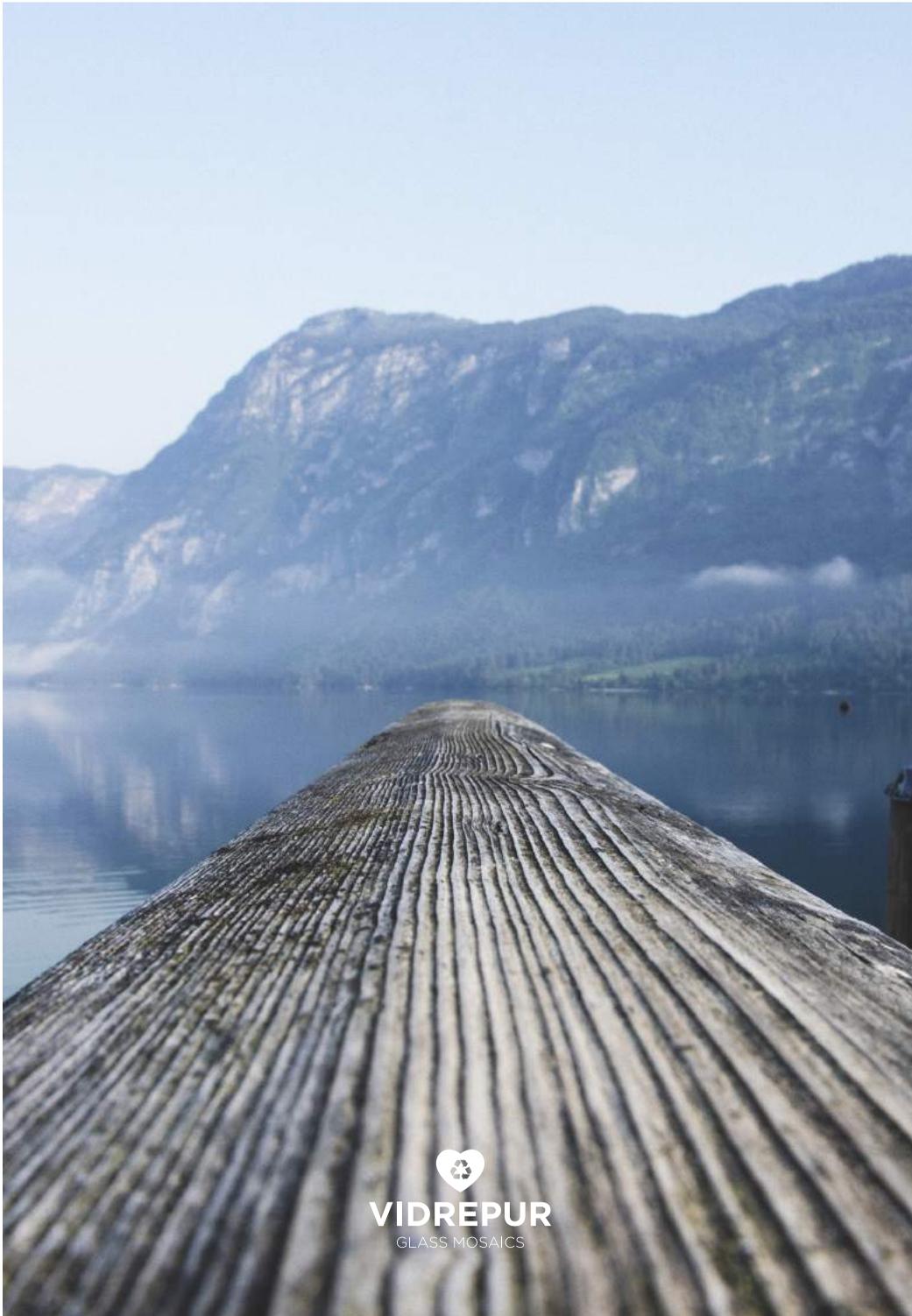




HIGH ANTIBACTERIAL CAPACITY

The aquatech nano-coating has a multi-target antibacterial capacity thanks to the use of ionic silver.

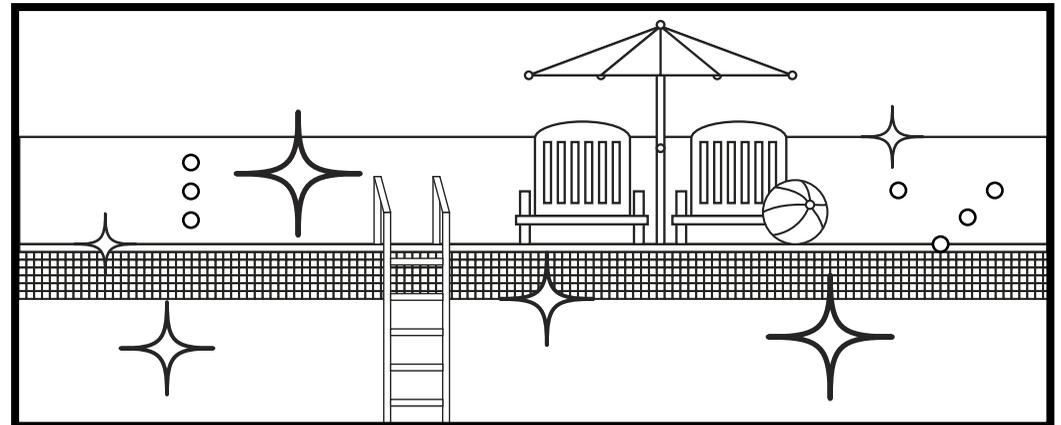




ENVIRONMENTAL DECONTAMINATION

The protection of the environment has become a global concern. Air and water pollution is getting worse by the day. Photocatalytic oxidation (PCO) is an advanced and innovative environmental technology with great efficiency and potential for purifying the air and the environment.

The advantage of PCO is its great capacity for purification reactions and its durability. Even at room temperature, PCO is able to decompose chemical pollutants harmlessly and quickly. This solution only consumes light as its reaction energy, and does not require low or high temperatures. As PCO is totally innocuous, without the risk of re-contamination, it offers the latest generation of promising technologies for high environmental protection.



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SOLUTION: SELF-CLEANING MOSAIC

The photocatalytic nanocoating is easily applied to the outer surface of the VITREOUS MOSAIC, with a range of properties including UV protection and self-cleaning.

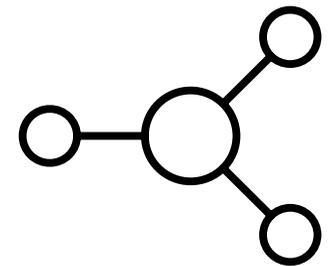
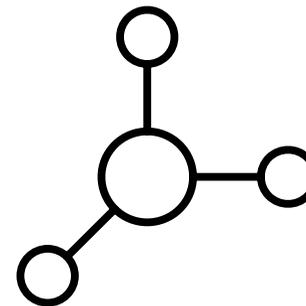
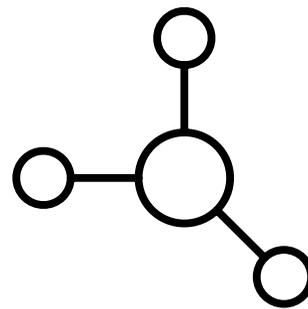
The nanocoating will make the swimming pool look great and reduce the need for cleaning and maintenance.

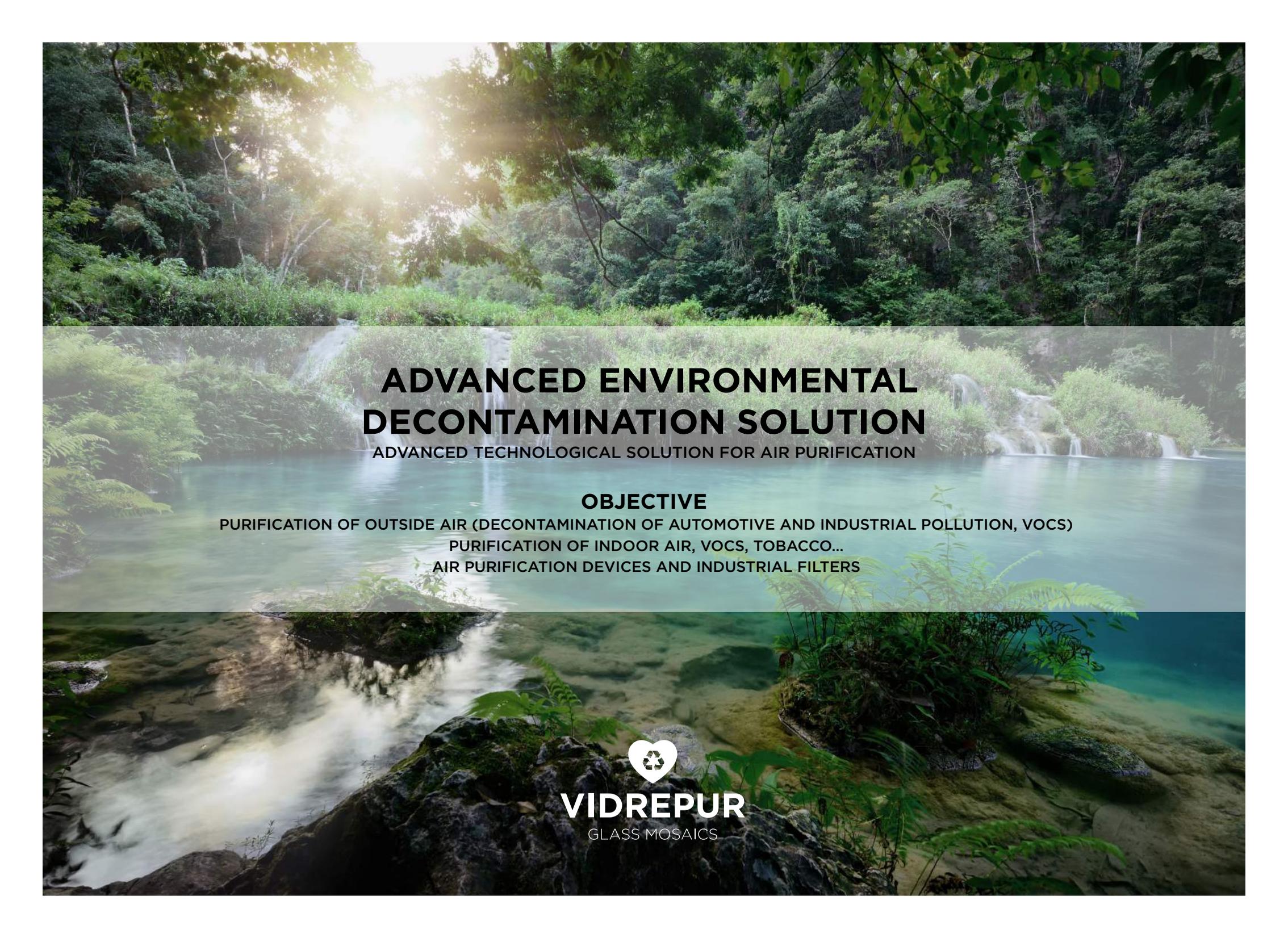


AQUATECH

PROPERTIES

- _____ Superhydrophilic
- _____ Purification of atmosphere
- _____ Antibacterial and anti-moss
- _____ UV protection
- _____ Antistatic solutions
- _____ Self-cleaning
- _____ Easy cleaning





ADVANCED ENVIRONMENTAL DECONTAMINATION SOLUTION

ADVANCED TECHNOLOGICAL SOLUTION FOR AIR PURIFICATION

OBJECTIVE

PURIFICATION OF OUTSIDE AIR (DECONTAMINATION OF AUTOMOTIVE AND INDUSTRIAL POLLUTION, VOCS)

PURIFICATION OF INDOOR AIR, VOCS, TOBACCO...

AIR PURIFICATION DEVICES AND INDUSTRIAL FILTERS



VIDREPUR

GLASS MOSAICS