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**PIZ** cladding systems



**S**

ENG

**PIZ**

# PIZ I.S.

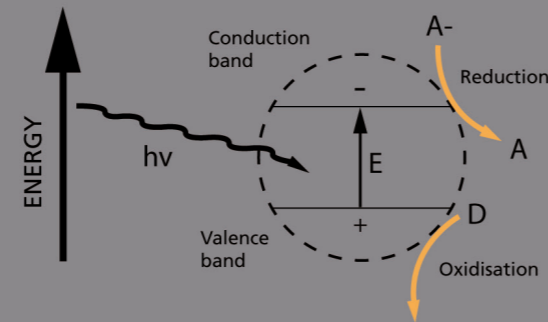
A SOLUTION BASED ON THE EXPLOITATION OF SOLAR ENERGY BY USING PHOTOCATALYTIC MATERIALS.

ADVANTAGES ARE ALSO OFFERED IN TERMS OF MAINTAINING SURFACE COLOUR AND REDUCING MAINTENANCE COSTS (DUE TO ITS SELF-CLEANING PROPERTIES)

## PHOTOACTIVE MATERIALS

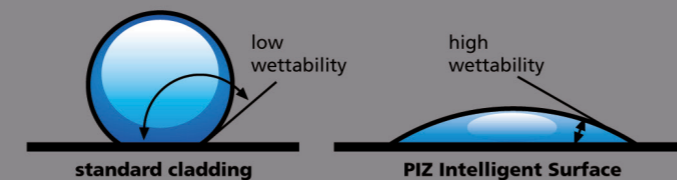
- PHOTOCATALYSIS
- SUPERHYDROPHILICITY
- SELF-CLEANING PROPERTIES
- ANTI-BACTERIAL PROPERTIES

PHOTOCATALYSIS: WHAT IS IT?  
THE ACCELERATION OF A CHEMICAL REACTION DUE TO LIGHT ABSORPTION BY THE CATALYST

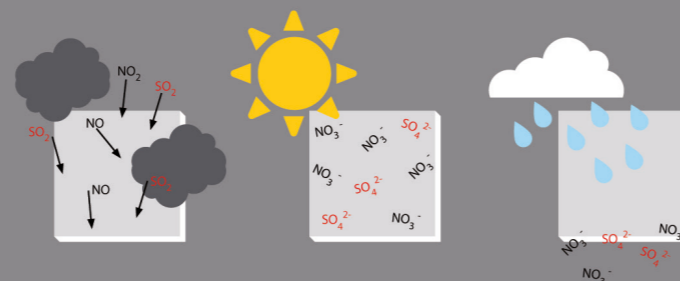


WHAT EXTRA PROPERTIES DOES IT ADD TO PHOTOCATALYTIC CLADDING?  
SURFACE CLEANING  
REDUCTION OF ORGANIC POLLUTANTS

PHOTOINDUCED SUPERHYDROPHILICITY  
CONTACT ANGLE VARIATION DUE TO LIGHT ABSORPTION



SELF-CLEANING PROPERTIES  
PHOTOCATALYTIC ACTION  
SUPERHYDROPHILIC ACTION



## PIZ I.S. EXPERIMENTAL TESTS

### EXPERIMENTAL CHARACTERISATION

- PHOTOCATALYTIC ACTIVITY
- SUPERHYDROPHILICITY
- SELF-CLEANING PROPERTIES

### PHOTOCATALYTIC ACTIVITY

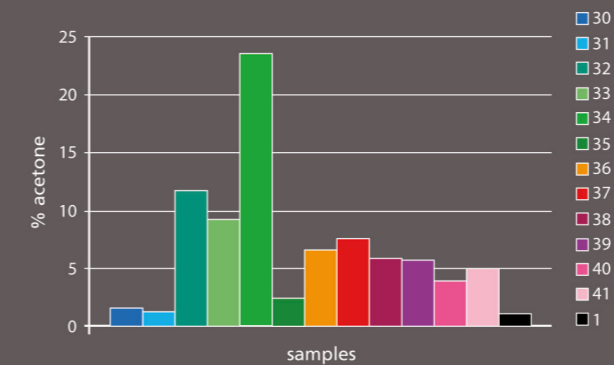
- V.O.C. REDUCTION
- DEGRADATION OF ORGANIC DYES

### V.O.C. REDUCTION

PHOTOCATALYTIC EFFICIENCY TEST OF PIZ I.S. IN THE BREAKDOWN OF ISOPROPRANOL INTO WATER AND ACETONE

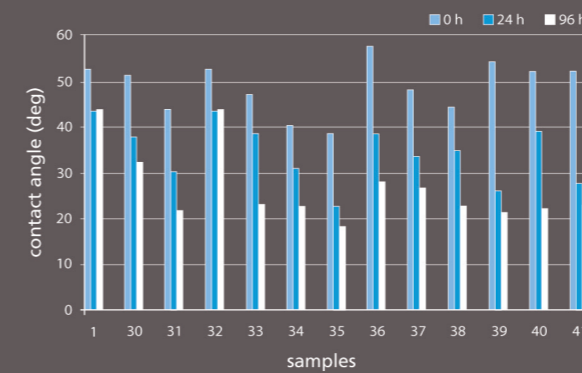


- CEMENT MORTARS (PIZ\_ZECCA)
- DIFFERENT ANATASE CONTENT



### SUPERHYDROPHILICITY

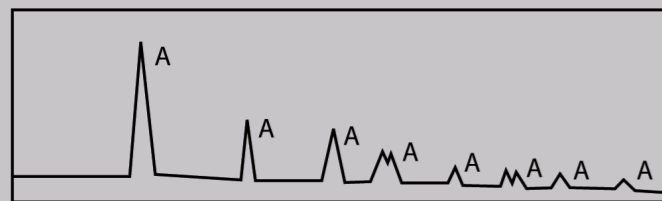
CONTACT ANGLE VARIATION FOR DIFFERENT PIZ I.S. COMPOSITIONS



## THE PHOTOACTIVE MATERIAL USED IN PIZ I.S.

TITANIUM DIOXIDE (TiO<sub>2</sub>) IN THE FORM OF SEMICONDUCTOR NANOMATERIAL

AMORPHOUS OR CRYSTALLINE STRUCTURE  
- ANATASE



### SEMICONDUCTOR

- BAND GAP 3.2 eV (=384 nm)
- SOLAR SPECTRUM

