

# TiO<sub>2</sub> Based Nanotechnologies for the House of the Future

self-cleaning and antibacterial coatings

water purification



light + TiO<sub>2</sub>  
titanium dioxide  
photocatalytic action



fog-proof

deodorizing, air purification



## Self-cleaning and antibacterial coatings

**Principle:** photocatalytic oxidation of organic pollutants

photocatalytic oxidative decomposition of germs membranes



self-cleaning TiO<sub>2</sub> layer on a roof

## Water purification

**Principle:** photocatalytic oxidative decomposition of organic pollutants



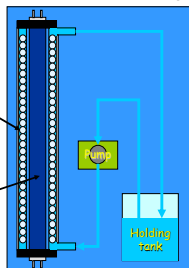
blank part

part covered by TiO<sub>2</sub>



dye-sensitized solar cell in window panel

dye-sensitized solar cell



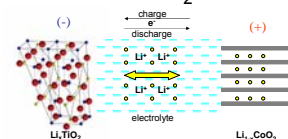
scheme of the photoreactor for water purification



pilot photoreactor for spa water purification

## Li-ion batteries

**Principle:** accumulation of energy on TiO<sub>2</sub>



Li-ion batteries

## Dye-sensitized solar cell

**Principle:** solar energy conversion on TiO<sub>2</sub> by means of adsorbed dye sensitization



laboratory module of dye-sensitized solar cell

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