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1st Project Newsletter

PHOTOCITYTEX project began on 1st of July, 2014 to find demonstrate solutions and validate the use of textiles with photocatalytic activity in terms of decontamination of urban atmospheres. (LIFE13 ENV/ES/000603) The project is coordinated by CEAM - Centro de Estudios Ambientales del Mediterráneo (Spain) and the project partners are AITEX (Spain), Ayuntamiento de Quart de Poblet (Spain), Next Technology Tecnotessile (Italy) and Legambiente Emilia Romagna (Italy).

OBJECTIVES

In urban environments there is a huge variety of textiles used in applications as diverse as awnings, canopies, umbrellas, dividers, tents, roofing construction/maintenance, textile facades, blinds, etc. These textile elements represent a significant fraction of the available urban surface and therefore they should be considered as potential components to be functionalized with photocatalytic materials in activities related to depollution of contaminated atmospheres.

The principal aim of the project is to demonstrate the environmental possibilities of these textiles with photocatalytic activity in terms of decontamination of urban atmospheres.

In order to consider the depollution of air in urban environments, this initiative takes advantage of the technical opportunities offered by:

- The textile architecture industry
- The current advances in technology of photocatalysis

The effectiveness of the photocatalytic textiles regarding the depollution will be study at laboratory conditions (EUPHORE simulation chamber) and in a real conditions by installing some of the textiles prototypes developed (awnings and wall coverings) in different urban locations at Quart de Poblet City (Valencia, Spain) and conducting field measurements before and during the prototypes installation.

EXPECTED RESULTS

It is expected to obtain a general application procedure for the implementation of photocatalytic textiles in the treatment of polluted urban atmospheres.

Based on previous studies carried out at EUPHORE CHAMBER, a maximum reduction rate of 30% in NOx concentration is expected in the chamber tests, whilst **20% of reduction is expected in the field campaigns (in the vicinity of the sampling points).**

20% NOx reduction will be a very successful result for most of the polluted scenarios considered.

Considering a very polluted scenario with a NOx concentration of up to 120 µg/m3 it is expected that 16 m2 of photocatalytic textiles are required in order to depollute 200 m3 of air to a level of 30 µg/m3 in one sunny day of winter.

For further information:

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