Passive Photocatalytic Surface Coatings for Continuous Air Purification and Biological Disinfection

Project Idea	**PCN Materials is proposing field tests based on its own validated technology for passive photocatalytic surface coatings for continuous air purification in high traffic and congested indoor environments**
Organization name, town and country	**PCN Materials ,** **Heraklion, Crete, Greece**
Addressed topic(s)	HORIZON-CL4-2027-01-MAT-PROD-02 HORIZON-CL4-2027-01-MAT-PROD-22 HORIZON-CL4-2027-01-MAT-PROD-08 HORIZON-CL4-2027-01-MAT-PROD-49 HORIZON-CL4-2027-01-MAT-PROD-62

- **Company Overview & Origin**

Born out of over a decade of dedicated research at FORTH's Institute of Electronic Structure and Laser (IESL), Greece, PCN Materials bridges top-tier academic nanoscience and industrial-scale manufacturing.

The enterprise holds exclusive international patents (Europe, USA, China) for modifying Titanium Dioxide (TiO_2) to activate **efficiently under visible light** — overcoming the traditional limitation of requiring high-intensity UV radiation.

- **Current Partnership in EU projects:**

- "SUPREME": HADEA.B – Digital, Industry and Space / Project: 101058422 — HORIZONCL4-2021-RESILIENCE-01
- "WISE": HADEA.B – Digital, Industry and Space B.3 – Industry / Project: 101138718 — HORIZON-CL4-2023-TWIN-TRANSITION-01

The project idea

People spend more than 80% of their day indoors

An average indoor environment in a European urban location is 3-5 times more polluted than a corresponding outdoors one

High concentration of indoor pollutants such as VOCs emitted from indoors appliances and cleaning chemicals are responsible for serious respiratory diseases like Ashma and Allergies.

Elderly and children are the most vulnerable group of our society and need protection

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- Visible light activated Photocatalysis is a zero energy, clean and safe technology proved effective on removing VOCs and harmful airborne pathogens
- PCN Materials has both the technology and the products that may be used as additives in a number of matrices for effective indoor depollution

Competences / type of partners sought

- **PCN's Core production/pilot-line Infrastructure**



- Two pilot-line set-ups composed of 250 and 10 lit capacity hydrothermal reactors with heating capacity of up to 250 0C.



- Four, Lab- and Industrial scale drying and calcination units.
- Dry Ball milling system



- A set of real scale "Demo-Houses" for field-test (P/C) materials & compounds analysis.
- ISO standard (EN 16980-01:2021) decomposition of NO test chamber for photocatalytic (P/C) materials (Visible and UV).



Contact details

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