

ITALIAN MACHINE TOOLS, ROBOTICS & AUTOMATION INDUSTRY ~ NEWS

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PIATTAFORMA INDIA PROJECT

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A LIFE PROJECT FOR CLEANER AIR IN FACTORIES

Losma Spa, Fae Technology and Ma-El have joined forces to create the Green Factory Life project. The project aims to provide an integrated environmental sanitation system that monitors the pollution parameters in factories through air quality detectors.

The goal is to minimise **CO2** levels and eliminate **spores, moulds, odours, carcinogens, bacterial** and **viral loads** in the air during processing cycles. The air purification system combines **Photocatalytic Oxidation (PCO)** with **Ultraviolet Germicidal Irradiation (UVGI)**. In addition, integrating IoT sensors and predictive models developed via a data analysis dashboard will improve plant efficiency and ensure high energy savings and predictive and automated maintenance.

Here is a description of the main focal points of the centralised Green Factory LIFE system:

1. The production plant



Research on suitable materials and technologies conducted in 2022 led the team to create a pilot plant green factory. The entire air purification system fitted with detectors was installed at Ma-El Srl in Presezzo, near Bergamo. Ma-El Srl manufactures moulds and equipment for the cold working of metals. A complex suction system that conveys over 15000 cubic metres of air to be treated.

2. Argos Pro, the filtration unit



Argos Pro is the core of the technology revolving around the Green Factory project. It consists of a cartridge filtration unit that purifies the oil mists, vapours, and fumes of various mechanical processes. Argos Pro is available in 3 sizes, with flow rates from 3,000 to 15,000 m³/h and with different combinations of increasing filtration efficiency, up to an efficiency of 99.97%. It is fitted with a digital display for viewing the main functions and the exclusive "LED Up" system, which can indicate the clogging status of the filter elements via three colours.

3. The Photocatalytic Oxidation (PCO) system



The photocatalytic oxidation (PCO) filtration system treats the air by radiating band-A ultraviolet lighting at 365 nm to the titanium dioxide (TiO₂) filter. This treatment is also effective against viruses, bacteria, and pollutants in plants producing processing waste. A driver controls and reduces the power supply of the UVA LEDs installed on the electronic circuit when their temperature reaches or exceeds 70 °C.

4. Plant management interface



A programmable control interface remotely manages the various suction areas along the plant.

The control interface can self-calibrate the system based on the air data. Moreover, end-users can keep track of the system's warnings and notifications and remotely manage the plant's predictive maintenance. The plant's control interface system includes a program that self-manages and sets suction parameters for the various areas.

5. IoT Air Quality Monitor sensors



After developing and testing the hardware and firmware, the first air quality detection devices were installed at Ma-El's pilot plant.

IoT sensors collect information from the production plant to enable new value-added functions of the filtration systems. The air quality sensors and an IoT (Internet of Things) gateway are part of the sensor network of the Green Factory project and help improve the air quality in work settings.

6. The plant's dashboard



The plant's dashboard displays the data collected by the IoT Air Quality Monitor sensors to allow users to monitor air pollutant parameters at all times. From PM₁₋₁₀₀ to VOCs and CO₂ values in the air, this software is used as a process management panel, providing an overall view of the plant's air quality.

Did you like what you read about the green future of your factory?

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https://ec.europa.eu/eusurvey/runner/LIFE_GreenFactory_Survey2023

The project Piattaforma India has been promoted by UCIMU – Association of Italian Machine Tools Manufacturers and AMAPLAST – Italian Plastics and Rubber Processing Machinery and Moulds Manufacturers Association. The two associations agreed on the idea that promoting a network of associations and entrepreneurs who have developed knowledge and experience on the Indian market, can be useful in favoring of new paths of development for business. The Indian companies who are interested to form JV, cooperation, technical tie up, purchase machinery etc from/with Italian companies can contact below mentioned address for any assistance:

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