CIT UPC

TECHNOLOGY CENTER

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

[INDOOR AIR QUALITY]

RESEARCH, DEVELOPMENT AND INNOVATION AT THE UNIVERSITAT POLITÈCNICA DE CATALUNYA (UPC)

The Universitat Politècnica de Catalunya (UPC) specializes in the areas of architecture, science and engineering, including energy and environmental technologies. In this field, the main areas are:

- Modelling and simulation (computational fluid dynamics, etc.)
- Capture and quantification technologies
- Evaluation and analysis technologies
- Hvac systems
- Smart monitoring and control systems
- Treatment technologies (filtration, uv, etc.)
- Sustainability and energy efficiency
- AI technology and smart communications
- Infrastructures and laboratories

As a result of the UPC's recognized research track record in its areas of specialization, we can offer a wide range of services:

- R&D technology transfer projects
- Consortiums for national and H2020 projects
- Patents
- Technology assessment
- Specialized facilities

The UPC is the leading university in Spain in volume of research and technology transfer to companies. It has become one of the major hubs of knowledge in Southern Europe.

MODELLING AND SIMULATION (COMPUTATIONAL FLUID DYNAMICS, ETC.)

Use of software to model the behavior of fluids, pollutants and particles inside buildings, to assess and quantify aspects such as indoor air renewal, the efficacy of the extraction system or air flow patterns.

CAPTURE AND QUANTIFICATION TECHNOLOGIES

Capturing and quantifying the main air pollutants inside buildings using specific sensors. Characterization of volatile and semi-volatile organic compounds.

EVALUATION AND ANALYSIS TECHNOLOGIES

Detection of discomfort due to episodes of air pollution caused by external and internal sources. Minimization and identification of the source. Chemical control for continuous monitoring.

OFFICES

EDUCATION CENTERS

AIRPORT SECTOR

RESIDENTIAL HOMES

INDUSTRIAL FACTORIES

FOOD SECTOR

HVAC SYSTEMS

Improvement in HVAC through the use of new filtration and ventilation systems. Assessment of the quality of CO2 filtration in the laboratory.

SMART MONITORING AND CONTROL SYSTEMS

Use of meters and sensors to improve comfort standards inside buildings. Optimization of relative humidity, temperature and CO_2 and monitoring of pollutants in the air.

TREATMENT TECHNOLOGIES (FILTRATION, UV, ETC.)

Improvements and indications for active carbon and biological filters. Investigation of new filters and the use of UV light and photocatalysis. Specialized filters for the elimination of specific compounds.

VENUES	**ANY INTERIOR INFRASTRUCTURE**	**BANKING SECTOR**
RESIDENTIAL SECTOR	**HOSPITALS**	**HOTEL SECTOR**

SUSTAINABILITY AND ENERGY EFFICIENCY

Improvement in techniques that promote energy efficiency and ensure correct air quality inside buildings. Achievement of a balance between thermal insulation and air quality.

AI TECHNOLOGY AND SMART COMMUNICATIONS

The use of artificial intelligence for optimal management of ventilation and filtration systems, to reduce their energy consumption.

INFRASTRUCTURES AND LABORATORIES

Laboratories to detect and characterize volatile and semi-volatile organic compounds (VOCs). Assessment of ventilation systems' efficiency at reducing COVs and other inorganic compounds.

INDUSTRIAL WAREHOUSE

GYMS AND SPORTS CENTERS

CATERING SECTOR

TRANSPORT SECTOR

MUSEUMS

THEATRES

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Departament de Recerca i Universitats
Secretaria General