



CO-ORDINATION ACTION on indoor air quality and health effects

EnVIE

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IDMEC-FEUP IN BRIEF



- **Status:** Non Profitable Private Organisation
- **Location:** Faculty of Engineering, University of Porto
Rua Dr. Roberto Frias, 4200-465 Porto, PORTUGAL
- **Size:** 80
- **Main areas of activity:**
 - Energy in the built environment
 - New energy technologies
 - Conception and experimental validation



EnVIE

IDMEC

Instituto de Engenharia Mecânica
Pólo FEUP

IDMEC-FEUP

Unit of Advanced Studies on Energy in the Built Environment



- **Main areas of activity:**

- **Indoor Air Quality and Sustainable Built Environment**

- Indoor Air Quality (IAQ) with three main focus: IAQ performance by relating emissions strength and ventilation strategies; clean products development as a basic step towards cleaner indoor environments; and, the energy use implications of different IAQ strategies.

- Sustainable Built Environment aiming at defining and/or identifying parameters (indicators, criteria and targets and at modelling the urban systems in order to anticipate or to assess the performance of a given urban space in terms of energy use and related to environmental impact at all levels (indoors, local, regional and global).

- **Building Thermal Physics and HVAC**

- Modelling and experimental activities in connection with the thermal behaviour of building construction components and HVAC systems, such as: testing methodologies for assessing the thermal performance of building components; development of components and demonstration activities of rational use of energy in buildings (passive and active); optimisation of HVAC systems integrated into buildings, study of natural and mechanical ventilation systems in buildings.



TEAM IN BRIEF



- **Persons involved in the EnVIE**

Eduardo de Oliveira Fernandes (Ph.D., Full Professor)

Gabriela Ventura Alves da Silva (Ph.D., Researcher)

Ricardo Sá (MSc., Collaborator)

Maria João Samúdio (MSc. Student)



Main activities in the field of indoor air quality



Recent and on-going projects (National, European and International)

- AIRLESS - “Design, operation and maintenance criteria for air handling systems and components for better indoor air quality and lower energy consumption pre-normative research” – DG Research (XII)
- MATHIS - “Materials for healthy indoor spaces and more energy efficient buildings“ - DG Research (XII)
- ENERBUILD - “Thematic Network: Energy in the Built Environment” - DG Research
- PRESCO - “European Thematic Network on Practical Recommendations for Sustainable Construction“ - DG Research
- PeBBu - “EU Thematic Network: Performance Based Building” - DG Research
- INDEX – “Critical Appraisal of the Setting and Implementation of Exposure Limits in the EU” (ECA - JRC Ispra)
- STRATEX -” Strategies to evaluate the contributions of indoor air pollution to human exposure” (ECA – JRC Ispra)
- HOPE – “Health Optimisation Protocol for Energy- Efficient Buildings” - DG Research



Main activities in the field of indoor air quality



Recent and on-going projects (National, European and International)

- SOLVENT – “Development of a Ventilated Solar Screen Glazing System” - DG Research
- MUSEUMS - Energy Efficiency and Sustainability in Retrofitted and New Museum Buildings – DG Tren (XVII)
- COOLBOOK - European Passive Cooling Handbook – DG Tren (XVII)
- LT-EUROPE - LT Method for Europe – DG Tren (XVII)
- European Masters Programme on the Use of Renewables in Buildings – DG Tren (XVII)
- OPTINER - Optimal control of Electric Heating and Ice-storage systems - DG Research (XII)
- URBVENT - Natural Ventilation in Urban Areas: Potential Assessment and Optimum Design Façade – DG Research
- RESHYVENT - Cluster Project on Demand Controlled Hybrid Ventilation in Residential Buildings with Specific Emphasis on Integration of Renewables - DG Research
- SHE – Sustainable House in Europe – DG Research
- ERA ISLA – New and Renewable Energies, Electricity and Water in Outermost Regions – DG Research



Your contribution to EnVIE



- **Leader of WP3 - Spaces characterisation and sources**

To make the necessary efforts to obtain a picture, as comprehensive and objective as possible of the situation of the actual building stock in European Union in relation with indoor environment and health conditions and objectives.

- **Co-leader of WP4 - Integration for policy making**

To synthesise the actual scientific knowledge and transfer it to the political arena