

## 2013 Award, Portugal

Omniflow  
by Pedro Ruão



### Theme

Innovating for a more sustainable world

The 2013 Altran Foundation for Innovation Award in Portugal rewarded a technology-based innovation that participates in the development of a more sustainable world. The three dimensions of sustainability could be addressed by the candidates in this perspective:

- **Social:** sustainability based in the social sphere has as main concern the well-being and quality of life;
- **Economic:** the economic sustainability is provided by maintaining and managing resources more efficiently and a regular flow of public and private investment;
- **Environmental:** considers the impact of human activities on the environment - linked to sustainability in the broad sense.

In this context, the Foundation was looking for rewarding innovative projects that include at least one of these dimensions, and support sustainable development.

### Laureate

#### Omniflow

Omniflow, developed by Portugal Ventures, is a device which generates energy using wind, solar and co-generation processes.

The technology of the Omniflow device uses an inverted wing shaped airfoil to direct the wind from any direction (omnidirectional) and promote a Venturi effect that accelerates the wind in the direction of the central vertical axis turbine. The Omniflow device uses aerospace technology to achieve its high performance directional flow. The surface of the wing is covered by PV cells that maximize energy production.

This project enables a development in urban spheres. In fact, it has the great advantage of being smaller than usual windmill and above all, it is not noisy.

It has already been commercialised and it is already a success for its inventor.

## Jury

The Foundation entrusts the national jury the task of selecting a laureate from among the candidates. The jury members are independent experts in the field of the chosen theme: specialists from research, politics, teaching, industry, etc.

In 2013 in Portugal, the jury was made up of diverse skilled experts with the President of the Chamber of Commerce, the Chairman of EDISOFT (a technology company), and the Director of IS2you, also laureate of the 2012 Altran Foundation International Award.

## Finalists

### **EcoMonitor - Advanced environmental monitoring systems based on infrared sensing**

#### **Sérgio Tavares**

The EcoMonitor project aims to supply advanced environmental monitoring systems based on state of the art infrared sensors for multipurpose applications, including pollution control, intensive and sustainable agriculture and establishment of environmental policies.

The solution presented can be applied in multiple situations requiring data about the concentration of chemical components, such as humidity and CO<sub>2</sub> concentrations.

### **Enhanced WT**

#### **Luís Manuel Frólén Ribeiro**

The aim of this project is to democratise the use of wind energy by the increment of the penetration of small wind turbine in urban areas and by the increase the sustainability indexes of renewable energy equipment.

Main goals to be achieved:

- Creating a better and lean wind turbine with increased performance (better aerodynamic, power control, smarter use of sustainable materials)
- Reducing noise
- Implementing a business model where windier urban areas are identified and commercially targeted.

### **BioCombust**

#### **João Claro**

This technology is a process that allows the recovery of waste from olive oil production (washing water and olive leaves) through the use of other industrial waste and agro-industrial (grape stems, berry elderberry stems and bark of chestnut, eucalyptus and pine). The mixing of the main oil residue (wet residue) with the cork dust or other plant residue produces a milled pulp which can be subjected to extrusion, and it is possible to choose the shape of the final product. This slurry obtained by extrusion, for example in the form of pellets or briquettes, is subjected to a drying process to yield a rigid product with high calorific value which is a good solid biofuel.