2006 Award
Technological innovation and energy

The laureates

First Prize
Rudy H.L. VAN DER BLOM
MAXXUN - The Netherlands

The theme

For its 10th anniversary, the Altran Foundation for Innovation chose the theme: Technological innovation and energy.

The key to grid-connected solar energy

A new solar cells' system based on luminescent rays concentration to improve solar panels' performance.
MAXXUN, a start-up company, is working on the production of an innovative and disruptive solar cells' system based on the luminescent solar concentrating (LSC) technology that can be grid-connected. Its main advantages are that it is able to lower the investment for a solar energy system by more than half and that the costs of the generated electricity are lowered by a factor of 2 compared to commercially available systems.

"Altran consultants supported our team in a wide range of areas including technology, financing, application development and marketing. This support included advice and actual participation in projects which we highly appreciated. Maxxun BV is progressing rapidly towards a commercial solar system which is partly based on the support from Altran." Kees Bastiaansen, Chief Technology Officer at Maxxun

The results

To date, Altran's primary support for the Maxxun team has been providing an extensive overview of the regional, national and international subsidy possibilities. In week 18 Maxxun submitted its first subsidy proposal to the Dutch government, with the aid of Elske van de Fliert, a consultant from Altran Technologies Netherlands in sustainable energy and alternative fuels and familiar with writing such proposals.

Altran support

Altran Group's Dutch consultants have collaborated for a year with the award winning team to achieve the following:

- Increased surface area from 2.5 cm^2 to 10 cm^2;
- Application of an absorbing and Dispersing layer on this extra surface area;
- Optimization of light power under different conditions;
- Application of small silicone cells – adhesion;
- Building of a demonstration model complete with mills and counters;
- Identification of potential partners.

More about the theme

This theme deals globally with the concept of energy: from energy sources transformation to environmental impact management and energy efficiency, especially in transport, housing and daily life.

Honorable mention
Pierre FORTE – France
PragmaPAC

A new fuel cell technology

Founded by Pierre Forté in 2004, the Pragma Industries Company is located in Bidart, near Biarritz, and specializes in the development and manufacture of low-temperature (80° C) fuel cells. A fuel cell is a cross between a battery and a petrol engine. It allows the chemical energy contained in hydrogen to be converted into electric energy. It has the advantage of providing clean energy without air or noise pollution. The only obstacle to its commercialization is the price, which is still high. In order to make it accessible for the greatest number of uses, Pragma Industries has worked aggressively to lower the production cost of fuel cells. By developing an innovative microporous material, the company has produced a fuel cell unique in its capacity to be manufactured "by the metre". This soft cell with a polymer-metal core can be rolled up to be more compact. Pragma Industries aims to gradually lower production costs by 50% compared to current costs of around $3,000/kW. In order to be competitive with a car engine, the cost should be around $100/kW. This target is still very far away, and can only be reached through a massive increase in the manufacture of fuel cells, which is why the company is currently focused on niche markets with high added value (specialized generators, portable devices, etc.). Since receiving the award from the Altran Foundation, the company has built a complete chemical laboratory with a fuel cell testing platform, including five engineers and researchers. More than ever, the team is motivated to attain the project's objectives.

The Finalists

Noor VAN ANDEL - The Netherlands
Greenhouse Village

An energy independent zone thanks to combined greenhouses and houses

A Fiwihex's Greenhouse Village is a combination of houses and greenhouses implemented together for the creation of an energy independent zone with no use of fossil fuels for all power needs. Solar energy becomes the main source. Basically, Greenhouse Village uses the excess of solar energy captured by greenhouses for other power needs in housing: the greenhouse cover remains closed, the summer heat is transferred to ground water and is later used for heating (greenhouses as well as living spaces); in the winter a cooling tower keeps part of the aquifer cold and this water is used in summer for cooling greenhouses as well as living spaces when the temperature rises. The system is a sustainable, environmentally friendly and economical solution.

Jan van DER TEMPEL - The Netherlands
Ampelmann

A boat for the maintenance of offshore wind turbines

Ampelmann is a motion compensation platform for safe, easy and fast access to offshore structures. The system consists of the sub-structure of a flight simulator: six hydraulic cylinders and a measurement system. The ship motions are continuously measured and counteracted by the platform creating a stable upper deck.
The offshore industry is highly interested in this project because the safety of operations and uptime of installations will increase. The Dutch team foresees to broadcast its innovation to offshore wind in European and US water first and then to offshore oil and gas.

Cesare CATELLI – Italy

Innovation and energy saving for lead-acid battery

Innovation in the production process of lead-acid battery for a better quality and a reduction of lead
Lead-acid batteries are still the largest and more reliable energy storage form used in several applications of both the industrial and public fields. Cesare Catelli has been working on the matter in his Italian company P.C. di Pompeo Catelli in order to develop a new production method for lead-acid batteries to save energy during the production phase, increase the performance and duration of accumulators, improve the product quality and reduce the amount of needed lead.
This project is innovative for lead-acid battery industries because it develops a new production process in the most critical phases of the electrode production.

Ricardo MARTINEZ-BOTAS - United Kingdom

Development of an Active Control Turbocharger

This project introduces an innovative new concept in turbochargers: that of using active control at the turbine inlet with the aim of harnessing the highly dynamic exhaust gas pulse energy emanating at high frequency from an internal combustion engine, in order to increase the engine power output and reduce its exhaust emissions. This project supported by R. F. Martinez Botas from England will concern the automotive, marine and industrial power plant sectors but will have a worldwide impact.

The jury

President of the jury
Mrs Corinne LEPAGE – France
Lawyer at the Court of Appeal of Paris and specialized in the right of the environment and in administrative action, between 1995 and 1997, French Minister of the Environment. Since 2000, she has been leading CAP 21 (Citizenship, Action, Participation for the 21st century), which is oriented on an ecological, humanist and citizen policy.

Mr Mike GIBBONS – United Kingdom
Leading director of DFES Innovation Unit. Former member of the Governing Council of the Technology Colleges Trust and of the Qualifications Committee of QCA and a founder member of the Governing Council of the National College for School Leadership.

Mr Rui GUIMARAES – Portugal
CEO of COTEC Portugal, an association of companies aiming at developing Portuguese innovation.

Mrs Marianne HAUG – Germany
Director of the International Energy Agency. Chief mining and industry division at the World Bank, Deputy Director Industry and Energy, Assistant Director West Africa and Senior Advisor of the President.

Mrs Åsa Söderström JERRING – Sweden
Managing director at SWECO Theorells, energy and fire safety consulting. Board member of the Swedish National Testing and Research Institute.

Mr Patrice JUDE – France
Head of Innovation Policy at Areva. Atomic engineer.

Mr José Arrojo de LAMO – Spain
General Director of the overall Technology and Innovation unit of ENDESA.

Dr. Giancarlo MANZONI – Italy
Member of the Administrative Council of CIGRE (International committee of high electrical networks). President of the Association of Electrical Engineers section Energy. Member of the ENEL Group for a long time.

Mr Ernest MONIZ – United States
Professor of Physics and Head of the Department of Physics at the Massachusetts Institute of Technology.

Prof. Klaus RIEDLE – Germany
Head of Division Gas Turbines and Combined Cycles at Siemens Power Generation and currently responsible for Division of their Production. Moreover, he was laureate of the International Prize of the Global Energy.

Mr Joop SCHOONMAN –The Netherlands
Chairman of several universities and visiting professor at Stanfort University. He is Scientific Director of the Delft Institute for Sustainable Energy. Royal/Shell prize for Sustainable Development and Energy IN 2001.

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Permanent Members

Edith ACKERMANN – USA
Honorary Professor of Developmental Psychology at the University of Aix-Marseille 1 and Visiting Scientist at the MIT, School of Architecture

Jean AUDOUZE – France
Research Director at CNRS and President of the Scientific Committee of the European Innovation & Research Exhibition

Wolf Peter FEHLHAMMER – Germany
President of ECSITE-D and former Director General of the Deutsches Museum in Munich

Marc VAINSEL – Belgium
PhD in paediatrics and General Administrator of the Foundation for disadvantaged Children of the ONE.