



Press Release

Paris, September 22nd 2008

There were 159 candidates; there are now 6 finalists...

## Who will be the laureate of the 2008 Altran Foundation Award?

Eleven international scientific experts, members of the 2008 Altran Foundation Award's Jury, got together at Altran's headquarters to evaluate the 28 applications short-listed for the international scientific Award. This year, the theme is "**Reducing CO<sub>2</sub> levels in the atmosphere: our technological challenge**".

During this meeting, 6 Finalists (3 French, 1 Spanish, 1 Dutch, 1 Italian) have been selected to remain in the competition and face the next step of the selection process: the presentation of their project to the jury on October, 24<sup>th</sup> during the *Grand Oral*. The name of the laureate will then be disclosed during the Award Ceremony in January 2009

### The 6 Finalists

**Francisco GALLO MEJIA, Universidad del País Vasco UPV/EHU Basque's Country University (San Sebastian Donostia, Spain)**

**Habitable Carbon Dioxide sink depot**

**Bamboo building composites for sustainable housing**

This project is about developing a bio-composite based on Guadua Bamboo that can be used for house building. This composite material stores the carbon absorbed by the bamboo and requires, for its fabrication, a little energy, water and materials (wood, bricks, metal, etc.). In addition, its production requires smaller machines and little transportation as the plantations are located close to the final user. The goal of this project is to develop local economies based on small companies' networks using this technology. It's about an innovative technology combining social and economical development, respect of the environment and carbon storage.

**Olivier LÉPINE, AlgoSource Technologiescompany, partnership with JCL Environnement, Laboratoire GEPEA/CNRS (Nantes, France)**

**AlgoSource Technologies**

**Capturing CO<sub>2</sub> with micro-algae**

The AlgoSource Technologies project consists in capturing CO<sub>2</sub> produced by industrial activity treat it for injection without concentration in microalgae culture systems to obtain a valuable biomass for different industries: food, green chemistry, energy... The biomass is processed in bio-refineries, in which all the resource is used. Industrial microalgae production allows replacing fossil carbon, which increases CO<sub>2</sub> concentration in the atmosphere, by a carbon neutral renewable resource.

**Christian MULLER, Holtzheim, Cooltech Applications (*Holtzheim, France*)**

**MagCool**

**Reversible air-conditioning magneto-caloric for housing**

The Cooltech Applications Company is developing a system of car reversible air-conditioning based on a technological rupture – magneto-caloric effect. Subject to magnetic alternation, the specific inter-metallic alloy warms up and then cools down following repetitive cycles. MagCool project consists in adapting this application to housing air-conditioning. This innovative technology is based on a reversible system of magneto-caloric and totally ecologic air-conditioning with no cooling gaz and high energetic efficiency. The result consists in a decrease of energy consumption and CO<sub>2</sub> emission of power plant.

**Arnaud MULLER-FEUGA, Microphyt (*Montpellier, France*)**

**RUBISCO2**

**Produce microalgae biomass without CO<sub>2</sub> release**

The project aims at turning any confined photosynthetic system into an integral sink of CO<sub>2</sub> contributing efficiently to the bioremediation of the unavoidable discharges of this greenhouse effect gas. Photobioreactors similar to those of Microphyt present the required characteristics for obtaining this result. At the rate of 2 tons of CO<sub>2</sub> fixed for a ton of dry biomass produced, the potential of biofixation will increase quickly with the productions of microalgae in closed photobioreactors. Future applications: biofuels especially. It consists in biofixing all the CO<sub>2</sub> introduced in the closed photosynthetic production systems, and not just use it partially and dilute the remaining in the stripping air, as it is the case today.

**Siglinda PERATHONER, University of Messina (*Messina, Italy*)**

**Convert CO<sub>2</sub> back to fuel**

This project aims at developing a photoelectrocatalytic (PEC) device which is able to convert CO<sub>2</sub> back to fuel at near room temperature and pressure using solar light and water. Using this device, it will be possible to develop "artificial trees" able to capture the CO<sub>2</sub> and convert it to liquid fuels (hydrocarbons, alcohols). Therefore, the implementation of this concept will allow to reduce levels of CO<sub>2</sub> in the atmosphere and at the same time capture a renewable source of energy (solar radiation) transforming it in a form (liquid fuels) which can be stored, used and transformed, preserving thus the large investments made on fossil fuels.

**Casper VAN OOSTEN, Eindhoven University of Technology, Peer+ Company (*Eindhoven, The Netherlands*)**

**Smart Energy Glass**

**The switchable window**

Smart Energy Glass is a new type of switchable window that is able to control the amount of light coming in and collect solar energy at the same time. The window mode can be controlled with a switch in three settings: dark, light and privacy (scattering). The light that is absorbed in the window is converted into energy. The key benefits:

- Collection of solar energy invisibly integrated into a building;
- Significant savings on air-conditioning costs (and energy);
- Improvement of the internal building climate through a natural lighting cycle;
- The windows can have any desired colour.

Currently, the start-up company Peer+ from the Eindhoven University is developing this project.

## A Jury of International Experts

### **President of the Jury**

#### **Léopold DEMIDDELEER**

##### **Director of Corporate R&D & New Business Development, Solvay - Belgium**

Dr. Léopold Demiddeleer has a PhD in Physical Chemistry from the Brussels University and is currently co-chairman of the New Business Board of SOLVAY, a Belgian pharmaceutical & chemical group with a global reach. Having started his career in 1976 by teaching mathematics and physics, he joined the SOLVAY Company in 1981. Starting in catalyst research, he successively led different R&D entities of the group - polyethylene, high performance materials, and global polyolefin's research- before being appointed New Business Development Director in 2000. He is currently active as a Board Member of EIRMA (European Industrial Research Management Association) and sits at the Advisory Board of 2 Venture Funds (Pangaea II and Conduit Ventures). He is also Board Member of 3 start-ups in the field of Chemicals (EcoPHos - Belgium), printed electronics (Plextronics - USA) and Hydrogen storage (Amminex - Denmark). He is also involved in academic strategic committees at Georgia Tec (Atlanta - USA) and CEA (Grenoble - France)



### **Peter CZERMAK**

#### **Managing Director of Institute of Biopharmaceutical Technology, Germany**

He performed a Ph.D. in Biochemical Engineering and Food Technology at the Technical University of Munich. After managing different biochemical institutions, he has joined the Institute of Biopharmaceutical Technology. He is also Head of Research Group Biochemical Engineering and Membrane Technology and is working tightly with the Department of Biotechnology/Biopharmaceutical Technology. In addition, he is Adjunct Professor in the Department of Chemical Engineering at Kansas State University, Manhattan, KS, USA.



### **Jean-François MARCHAND**

#### **Editor of Energymag, The Energy Manager Magazine – Belgium**

Founder of In Site, a publishing & communication company active in commercial and institutional markets since 2002. Writer, journalist and editor in chief of Energymag, the energy to manage magazine, the first professional magazine dedicated to energy, energy solutions and associated services.



### **Gennaro DE MICHELE**

#### **Executive Vice President of Enel Research – Italy**

Philip Morris Prize for Scientific and Technologic Research, Industry and Environment National Prize from the Ministry of Industry, Innovazione Amica dell'Ambiente Prize from Legambiente and Bocconi University, Sapio Prize 2007 for the Italian Research. These are just some of the awards he has received in his career. Executive Vice President of Enel Research, graduated with honours in Chemical Engineering at the University of Naples, he is fond of energy and environmental science.

He is author of over 250 works published on national and international journals and 15 patents. He is Member of the Advisory Council of the E.U. Technology Platform for the Zero Emission Fossil Fuel Power Plants and of the IEA (International Energy Agency) Clean Coal Science Group. He is General Secretary of IFRF (International Flame Research Foundation).



### **Dieter OESTERWIND**

#### **Director of the Centre for Innovative Energy Systems – Germany**

Professor Dr. Dieter OESTERWIND completed studies of engineering technology and business sciences. Graduated at the University of Cologne, he was for several years scientific assistant in Research Centre Jülich GmbH. He performed different managerial functions in energy supply companies; until 2005 he had been management board member at the Stadtwerke Düsseldorf AG. From 2005, he has been Director of the Centre for Innovative Energy Systems. He participated to roundly 40 articles and book publications.



### **Yves ROULET**

#### **Engineer in environment, responsible for the Unity of Energy and Environment for Building, Heritage and Logistics Services, Vaud – Switzerland**

Mr Yves Roulet is initiating and participating to the development of methods and processes for the realisation of buildings and infrastructures respecting sustainable development principles. His objective is thus to reduce energy consumption and emission of greenhouse gases to 1 Ton CO<sub>2</sub>eq per inhabitant and per year. Executive member of the Eco-Bau association, Mr Roulet is also in charge of the certification MINERGIE-ECO® institution.



### **Vasco TEIXEIRA**

#### **Associate Professor, University of Minho - Portugal**

Vasco Teixeira is Associate Professor in Materials Physics at University of Minho. His expertise is Advanced Coatings for High Efficient Energy Systems, Functional and Protective Coatings for Industrial Components and Nanotechnology-based Thin Films for Smart Materials. He is Editor-in-chief of Journal of Nano Research, JNanoR. He is Vice-President of the SOPORVAC-Portuguese Vacuum Society. Member of the Executive Committee of the SNN-Society of Nanoscience and Nanotechnology. Chair for the European Advisory Scientific Committee of the SNN. He is member of the Executive Council (Councillor-2004-07) and 2007-2010 Triennium of IUVESTA-International Union for Vacuum Science, Technique, and Applications.



## **Permanent Members of the Jury**

### **Edith ACKERMANN**

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

Edith Ackermann is a Professor of Psychology at the "Univeristé d'Aix-marseille" and Visiting Scientist at the Massachusetts Institute of Technology School of Architecture, U.S.A. She consults for organizations and research institutions such as LEGO Learning Institute, Media Lab Future of Learning Group, MIT Media Laboratory, MIT Design technologies. Previously, Ackermann was Associate and Assistant Professor at the M.I.T. Media laboratory. She was also Senior Research Scientist at Mitsubishi Electric Research Laboratory, U.S.A and Scientific Collaborator at the "Centre International d'Epistémologie Génétique" (C.I.E.G.), under the direction of Jean Piaget, Geneva. She recently was granted an Osher Fellowship from the Exploratorium Science Museum, in San Francisco (2008-09).



### **Jean AUDOUZE**

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

Jean Audouze is "Directeur de Recherche du CNRS" at the "Institut d'Astrophysique de Paris" (IAP). He is also President of the Scientific Committee of the European Innovation & Research Exhibition and "Maître de Conférence" at "SciencePo". He has been the director of IAP from 1978 to 1989 and has taught astrophysics at "Ecole Polytechnique" and in several US universities. He was "Conseiller Scientifique à la Présidence de la République" from 1989 to 1993. Recently, Director of the "Palais de la Découverte", he received the 2004 Kalinga Prize from the UNESCO - in recognition of his works in favour of the popularization of science.



### **Wolf Peter FEHLHAMMER**

#### **President of ECSITE-D and former Director General of the Deutsches Museum in Munich - Germany**

Wolf Peter Fehlhammer is the President of ECSITE-D, a subcommittee of ECSITE (European Collaborative for Science, Industry and Technology Exhibitions). A few years ago, he was the President of this whole organization. Full Professor of Inorganic Chemistry in Germany, and visiting professor at Madison (U.S.A) and Paris (France) at the Ecole Nationale Supérieure de Chimie and at the "Université de Rennes", he was simultaneously Director General of the Deutsches Museum in München, and President of the Scientific Council of the "Institut für Museumskunde", in Berlin, during 10 years.



### **Marc VAINSEL**

#### **PhD in paediatrics and General Administrator of the Foundation for disadvantaged Children of the ONE – Belgium**

Marc Vainssel is the General Administrator of the Foundation for disadvantaged Children of the ONE, in Belgium. Ph.D in paediatrics, he was head paediatrician and medical director of the University hospital "Saint-Pierre", in Brussels. Professor, he is part-time lecturer at the Faculty of Medicine at the "Université Libre" in Brussels.



## **About Altran**

Altran is the European leader in innovation consulting and high technology. The Group's 17,000 consultants, operating worldwide, cover the entire range of engineering specialities, including electronics, information technology, quality and organisation. Altran offers its clients ongoing support throughout the innovation cycle, from technology watch, applied basic research and management consulting to industrial systems engineering and information systems. The Group provides services to most industries, including the automotive, aeronautics, space and telecommunications sectors. In 2007, the Group's turnover reached 1 591,4 million euros, with over 17,000 employees in the 20 top countries.

[www.fondation-altran.org](http://www.fondation-altran.org)

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