

## 2003 Award

### Technological innovation and early childhood

#### The laureate

##### First Prize

Dr. Pierre-Henri BANHAMOU  
DBV Technologies- France

#### Tracking down food allergies

Allergies are more and more frequent and concern, in France, 1 out of 3 people. This world-wide phenomenon of public health is classed 4th world-wide health problem by WHO.

The team from DBV Technologies has developed a patented innovative process, the E-patch®. This process creates simple, ready-to-use standardised patch tests which are highly reliable, and which conserve the allergic agents in their best state of allergy. The strict control of the dosing of the allergic agents used ensures ease of reproduction. This innovative technique uses the principal of freeze drying and electrification to retain the allergic agents on the patch, without using solvent or glue. The E-patch is then conditioned so that it remains air and water tight. Once applied to the child the allergic agents are rapidly hydrated by body transpiration and liberated from the patch. They enter into contact with the skin and create, if positive, a reaction which can be seen by the doctor 48 hours later. The advantages are numerous: possibility to industrialise a means of reliably diagnosing and standardising tests, controlling the dose administered, enabling the measurement and the comparability of results and the detection of allergies by doctors and parents alike. Altran could participate in developing an industrial plan and address several scientific statutory and marketing problems.

#### The theme

For its 7th award, in 2003, the Altran Foundation for Innovation has chosen the theme "technological innovation and early childhood".



#### Altran Support

This support has covered almost all product lifecycle steps: production problems (seeking and managing partners), finalization of product development (equipment, processes, form, quality and control system), patent stakes, design of a running industrial pilot, and market surveys (positioning, marketing, packaging, price, etc.) The Diallertest Kit designed by Olivier, Altran-Technologies consultant, was rewarded on September, 18th, 2004, with a Special Mention given by the ANVAR president within the annual Award called "L'Observateur du design" (the design observer) organised by l'APCI, Agence pour la Promotion de la Création Industrielle (Industrial Creation Promotion Agency). Thanks to this reward, Diallertest was exhibited at the Cité des Sciences et de l'Industrie in Paris.

*"We should never have reached such ambitious aims, in such a short period without this massive and so important help at all different levels"* Pierre-Henri BENHAMOU

#### Results

The Altran team who has supported the 2003 Laureate can be proud: DIALLERTEST, the test-patch for child food allergies was only a project at the Award ceremony in June 2003; since June 2004, it has been available in French drugstores! The technological support offered by Altran thus allowed Pierre-Henri Benhamou a market production of his innovation one year ahead of schedule.

## The Finalists

### Laurent FULLANA – France

#### **Fighting risks of infection**

The company AirInSpace has developed several solutions to limit the risk of infection spread by the air in hospitals and to create protected environments necessary for clinical research. The solution proposed lies in a system of decontamination by physical destruction of the micro-organisms inside a reactor. Amplified electrostatic fields provoke an accumulation of charges and a dissemination of energy within the micro-organisms, which leads to their splitting apart. Electrostatic forces attract the infectious particles onto the sides of the device where they are broken up and destroyed by oxidization. A nano-filtration of the biological residue is carried out. This results in the air being completely decontaminated of all virus, bacteria and fungi.

### Dr. Philippe CORNET – France

#### **Identification of chromosome anomalies through blood samples**

Dr. Philippe Cornet from the company Kellantis, at the Faculty of Medicine at the Parisian Hospital Cochin, is also working on a prenatal diagnostic using unborn baby's cells contained in the mother's blood. His technique uses fluorescent markers that are mixed with a sample of maternal blood. The small number of foetal cells becomes fluorescent. After being spread on a glass sheet or filtered, the blood samples are introduced into an analyser that uses Cytometry technology in a Solid Phase. This Cycometer, equipped with a laser, detects in a few minutes, the foetal cells, thanks to the fluorescent light that they emit. The data is collected and analysed using a software that registers the co-ordinates of each identified cell. The glass sheets are then placed under a microscope linked to the analyser: the detected cells position themselves directly and automatically under the lens. The next stage of the project will be to automate, after detection, the process of characterizing and analyzing the foetal cells.

### Michael HUSS – Germany

#### **Detecting hyperactivity**

The team of Michael Huss at the University of Humboldt in Berlin has developed a system based on the use of a Doppler radar. Without any risk to the child, or impact on his behaviour, this tool replaces the "clinical eye" and reduces the subjectivity of diagnostics. The radar placed at 1.50 meters from the child measures and registers the frequency of his movements. The results are then analysed and compared to those of hyperactive children of the same age. The results are reliable at 95% with optimized screening properties.

### Patrizia PATERLINI - France

#### **Detect Down Syndrome without amniocentesis**

The team of Dr. Patrizia Paterlini from the Faculty of Medicine of the French Children's hospital Necker has recently developed a new technique. ISET (Isolation by Size of Epithelial Tumor / Trophoblastic Cells) is an innovative process that enables the isolation, based on the size of the unborn baby's cells found in the mothers' blood. A laser microscope then dissects them before an analysis of their genome confirms their foetal origin. The genetic anomalies can then be identified.

### Judith SANSON - Belgium

#### **Overcoming dyslexia**

The NGO "Dyslexia International – Tools and Technologies (D.I.T.T.) has submitted a project entitled "The way to Success". The objective of the project is to communicate information about dyslexia in order to increase public awareness. It will initially concern Europe and later the rest of the world. This project also aims at providing the dyslexic child with the means to self-detect his difficulties in order to overcome them and to choose his own learning methods.

## The jury

### President of the jury

#### Dr. Edwige ANTIER

French paediatrician and author of several books on babies health, eating habits and hygiene, she is a radio presenter of the programme "your children and you" on the French radio station France Inter.

### Co-President of the jury

#### Anne-Lucie WACK

Member of the Administration Council of the Altran Foundation has accepted to be the co-president of the Jury for the 2003 Award.

#### Edith ACKERMANN – USA

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

#### Gilles BRAUN – France

Head of production and use of educational multimedia at the Direction of Technology of the French Ministry of Youth, National Education and Research.

#### Fernanda Maria de CASTRO Gonçalves – Portugal

Psychologist at APAV, Portuguese association for the protection against home violence, she takes part in several entertaining and educational programmes for children based on NTIC, namely for the Portuguese government.

#### Roger CHALANDARD – France

Prospective and creativity manager of Berchet Group.

#### Antonio GUIDI – Italy

Current under-secretary of State for the Italian Ministry of Health, he is neuro-psychiatrist for children and consultant for the Italian Ministry of Social Affairs for handicapped citizens and children.

#### Pr. André KAHN – Belgium

Head of Paediatrics at the Reine Fabiola University Children's Hospital, he has received 7 Scientific prizes for his work dedicated to the prevention of infant death.

#### Siegfried MOESCH – Germany

Engineer in industrial technology and vice-president of the "Children's Security Committee" in Munich, he directs one of the biggest European organisations for the security of consumable goods.

#### Pr. Marc VAINSEL – Belgium

PhD in paediatrics and General Administrator of the Foundation for disadvantaged Children of the ONE.

