



# EUROPEAN ACADEMY OF SCIENCES

IN SUPPORT OF EXCELLENCE IN SCIENCE AND TECHNOLOGY

## Newsletter 9 – 2015

Dear Academicians,

We have the pleasure to announce the 2015 Awards of the EUROPEAN ACADEMY OF SCIENCES:

### Leonardo da Vinci Award

#### ***Doctor Jean Jouzel***

***In recognition for his outstanding lifelong achievement on isotopic chemistry and climate sciences.***

Dr. JOUZEL promoted the use of water stable isotopomers for reconstructing past climate changes from ice cores and with associated atmospheric modelling using both dynamically simple and General Circulation Models (GCMs). He has actively participated in major ice core international projects and had key contributions to various aspects of the modelling of water isotopomers, with recognized international leadership on both sides. He is one of the most famous climatologists at world scale.

### Blaise Pascal Medal in Chemistry

#### ***Professor Herbert Roesky***

***In recognition of the outstanding originality and creativity of his research in inorganic Chemistry***

Prof. ROESKY has made impressive contributions to the teaching of experimental chemistry and his brilliant success in raising the awareness and enthusiasm of the general public - from school children to teachers and scientists - for chemistry and science through fascinating experimental public lectures and superb books. With more than 1200 scientific papers, H. Roesky has considerably influenced modern inorganic chemistry and his major impact and outstanding achievements have been recognized through major national and international awards and prizes and numerous Honoris Causa appointments. The European Academy of Sciences is grateful to its Head of the Chemistry Division, which was Prof. Roesky until March 2015.

## **Blaise Pascal Medal in Earth and Environmental Sciences**

### ***Professor Christos Zerefos, in Atmospheric Physics***

***In recognition for his outstanding contributions for several decades to Atmospheric Physics, especially concerning the atmospheric ozone problem.***

Prof. ZEREFOS is one of the world leading scientists on Atmospheric Sciences for his studies on the long and short term variability of the ozone layer, the stratosphere and related geophysical signals in a global perspective. His research on the ozone decrease and particularly its inverse relationship with increases in UV-B provided for the first time solid experimental evidence that UV-B has been increasing because of the ozone depletion. In the past 20 years he participated in almost all WMO/UNEP Scientific Assessments of Ozone Depletion, and chaired the International Ozone Commission of the International Association of Meteorology and Atmospheric Sciences, receiving the Global Ozone Award from the United Nations Environment Programme.

### ***Professor Corinne Le Quéré, in Climate Changes studies and policies***

***In recognition for her outstanding contribution to marine biogeochemistry and climate sciences***

Prof. LE QUERE provided key contributions in marine biogeochemistry, breaking new grounds and open further avenues of research. She led large research groups of interdisciplinary scientists, spearheading the development of marine ecosystem models and the integration of land and ocean carbon observations and models in unique frameworks. She also founded and direct the annual publication of the ‘global carbon budget’ by the Global Carbon Project, which has influenced both climate science and climate policy in Europe and internationally. Finally, she contributed extensively to the Intergovernmental Panel on Climate Change (IPCC).

## **Blaise Pascal Medal in Materials Science**

### ***Professor Ulrike Diebold***

***In recognition for seminal contributions on the structure and properties of metal-oxide surfaces and their application in catalysis, and for sustained leadership in Materials Science***

Prof. Diebold’s work has significantly contributed to theunderstanding of the structure and properties of metal-oxide surfaces and of its development as a sub-field of surface science. She was the first to show that it is possible to image single oxygen vacancies on rutile TiO<sub>2</sub>(110) and determined what is actually visualized in atomically-resolved STM images. Herinitial paper and subsequent original studies on TiO<sub>2</sub>(110), together with the extensive reviewpublished in 2003, often referred to as the bible of TiO<sub>2</sub>, were pivotal in making TiO<sub>2</sub>(110) one of the most-investigated systems in surface science.

## Blaise Pascal Medal in Mathematics

**Professor Luis Vega**

***In recognition for seminal contributions on the harmonic analysis and of Fourier methods in partial differential equations***

Prof. VEGA is a specialist of harmonic analysis and of Fourier methods in partial differential equations. One of his early results is the Smoothing Effects for Dispersive Equations (as the Schroedinger equation) which is now considered as a 'normal' property of these linear equations. This has been the begining of a new approach to the dispersive equations that he has carried out with C. Koenig and G. Ponce. Another class of problems he considered, are the unique continuation methods that he revisited entirely with important applications to control theory. Luis Vega has also brought new problems to the community, or more precisely new approaches to these problems, and as remarkable examples, the analysis of the Helmholtz equations in the high frequency regime, and the vortex dynamics in fluid mechanics.

## Blaise Pascal Medal in Physics

**Professor Manuel Garcia Velarde**

***In recognition for seminal contributions on the fluid physics and, in particular, interfacial phenomena at large***

Prof. VELARDE's research, with a dominant line being fluid physics and, in particular, interfacial phenomena at large, covers a wide spectrum of phenomena, problems and sub-disciplines, with an inter-, trans-, and pluri-disciplinary approach (from Physics, including geophysics—waves in the atmosphere, the sea and straights-, waves in nonlinearly elastic solids, laser dynamics, reaction-diffusion systems, lattice dynamics in active media, quantum electron transport, ... to neurodynamics and model-brains for robots.

## Blaise Pascal Medal in Social Sciences and Humanities

**Professor Martin Carrier**

***In recognition for his scientific work as philosopher and historian of sciences, leading from epistemology to society***

Prof. CARRIER is not only a philosopher and historian of science following the highest standards of scholarship in these disciplines, but also a philosopher who has a profound interest in the relations between science and society, between social and epistemic values. His work, with a background in both physics and philosophy, reflects on contemporary issues and fields

of tension between applied and fundamental sciences, science policy, and the role of experts in decision-making.

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We congratulate all the Awardees of the year 2015.

Sincerely yours,



**Claude Debru**  
**President**

**On behalf of the EURASC General Board**

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