

# BIONATURE 2014

## Foreword

The Fifth International Conference on Bioenvironment, Biodiversity and Renewable Energies (BIONATURE 2014), held between April 20 - 24, 2014 in Chamonix, France, covered these two main areas: environment and renewable and sustainable energies.

Environmental change awareness is a key state of spirit and legislation for preventing, protecting, and ultimately saving the planet biodiversity. Technical and practical methods for applying bio-agriculture for the public's health and safety are primary targets. The goal is the use of ecological economic stimuli in tandem with social and governmental actions preventing deforestation, pollution, and global warming. To cope with the climate and landscape changes advanced technical inventory of tools and statistics on lessons learned are needed to derive appropriate measure and plan accordingly.

Replacing the classical energy with alternative renewable energy (green energy), such as bioenergy, eolian energy, or solar energy is an ecological and economic trend that suggests important socio-economic advantages: using native renewable resources, increasing of self-sufficiency rate of energy and promoting use of clean energy, and that way, polluting emissions to the air will be reduced. Bioenergy is renewable energy derived from biological sources, to be used for heat, electricity, or vehicle fuel. Biofuel derived from plant materials is among the most rapidly growing renewable energy technologies. In several countries corn-based ethanol is currently the largest source of biofuel as a gasoline substitute or additive. Recent energy legislation mandates further growth of both corn-based and advanced biofuels from other sources. Growing biofuel demand has implications for U.S. and world agriculture. Eolian energy is currently used throughout the world on a large scale. In the past decade, its evolution shows its acceptance as a source of generation, with expressive growth trends in the energy matrices in the countries where this source is used Eolian energy is renewable and has very low environmental impact. To generate it, there are no gas emissions, no effluent refuse, and no other natural resources, such as water, are consumed. Photovoltaic technology makes use of the energy in the sun, and it has little impact on the environment. Photovoltaics can be used in a wide range of products, from small consumer items to large commercial solar electric systems. The event brought together the challenging technical and regulation aspects for supporting and producing renewable energy with less or no impact on the ecosystems. There are several technical integration barriers and steps for social adoption and governmental legislation to favor and encourage this kind of energy.

We take here the opportunity to warmly thank all the members of the BIONATURE 2014 Technical Program Committee, as well as the numerous reviewers. The creation of such a high quality conference program would not have been possible without their involvement. We also kindly thank all the authors who dedicated much of their time and efforts to contribute to BIONATURE 2014. We truly believe that, thanks to all these efforts, the final conference program consisted of top quality contributions.

Also, this event could not have been a reality without the support of many individuals, organizations, and sponsors. We are grateful to the members of the BIONATURE 2014

organizing committee for their help in handling the logistics and for their work to make this professional meeting a success.

We hope that BIONATURE 2014 was a successful international forum for the exchange of ideas and results between academia and industry and for the promotion of progress in the fields of bioenvironment and renewable energies.

We are convinced that the participants found the event useful and communications very open. We also hope the attendees enjoyed the charm of Chamonix, France.

**BIONATURE 2014 Chairs:**

Lena Strömbäck, SMHI, Sweden

Suhkneung Pyo, Sungkyunkwan University - Suwon City, South Korea

Vladimir Strezov, Macquarie University - Sydney Australia