



ENERGY, ENVIRONMENT,
ECOSYSTEMS and
SUSTAINABLE
DEVELOPMENT

Proceedings of the

3rd IASME/WSEAS International Conference on ENERGY, ENVIRONMENT, ECOSYSTEMS and SUSTAINABLE DEVELOPMENT (EEESD '07)

Agios Nikolaos, Crete Island, Greece, July 24-26, 2007

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Preface

This book includes the proceedings of the 3rd IASME / WSEAS International Conference on Energy, Environment, Ecosystems and Sustainable Development (EEESD'07) held in July 24-26, 2007 in Agios Nikolaos, Crete, Greece. The EEESD conference is organized annually by the World Scientific and Engineering Academy and Society (WSEAS), in cooperation with International Association of Mechanical Engineers (IASME), Universities and Research Centers. In 2007 the EEESD international conference was organized by WSEAS in collaboration with IASME and the Computer Science Laboratory of Hellenic Naval Academy. Several other universities laboratories contributed with special sessions and plenary lectures as one can see below. In 2008 it will be organized by WSEAS and Universidade do Algarve in Algarve, Portugal (June 11-13, 2008).

The papers submitted focused on a variety of topics. In regular sessions, papers addressed topics such as environment and sustainable development, sustainable management, applied chemistry, applied thermodynamics, ecosystems, cleaner energy systems, renewable energy systems, energy conservation and generation, energy technology transfer, pollution, soil and agricultural issues, landscape design, simulation and modeling, process engineering and more.

Prominent lecturers provided key-note speeches for the conference. Moreover, special sessions were organized, and invited lectures were given by well-known researchers.

For this EEESD conference, Professor N. Markatos (School of Chemical Engineering, National Technical University of Athens, Greece) and Assoc. Professor A. Stamou, (School of Civil Engineering, National Technical University of Athens, Greece) were the Chairmen in the track of Energy, Professor C. Helmis (University of Athens, Head of the Department of Applied Physics, Faculty of Physics, Greece) and Professor F.Rigas (School of Chemical Engineering, National Technical University of Athens, Greece) were the Chairmen for the track of Environment. For the track of Ecosystems, the Chairmen were Professor Jose Beltrao, (University of Algarve, Portugal), Professor T. Panagopoulos (University of Algarve, Portugal) and Professor Eleni Stamatiou (Open University of Greece, Greece) while for the track of Sustainable Development, the Chairmen were Professor Alice Hatzopoulou (National Technical University of Athens, Greece) and Dr. J.Georgi (Open University of Greece, Greece).

The Plenary Speeches of EEESD'07 were:

- *Best modeling practices in the application of the Directive 2000/60 in Greece* by Assc. Professor Anastasios I. Stamou, National Technical University of Athens, Greece.
- *Towards a better understanding of the mean and turbulent structure of the Atmosphere over the sea*

by Prof. Costas G. Helmis, National and Kapodistrian University of Athens, Greece.

- *Institutions and the protection of the manmade and natural environment-The case of the Greek Ombudsman*

by Prof. Eleni Stamatiou, Hellenic Open University, Greece.

- *Green Diesel from Fischer-Tropsch Synthesis: Challenges and Hurdles*

by Prof. Nicolas Abatzoglou, Universite de Sherbrooke, Quebec, Canada.

- *A Dynamic System for the Evaluation of Forest Fire Risk With Emphasis to Mountainous Terrain*

by Prof. George Stavrakakis, Technical University of Crete, Greece.

- *A GIS-based decision support system for revegetation of lands contaminated from mining activities*

by Prof. Daoliang Li, China Agricultural University, China.

- *Impact of European Aquis on Education and Praxis in Environmental Management*

by Assoc. Professor Calin I. Ciufudean, _ Stefan Cel Mare _ University of Suceava, Romania.

- *Future changes in climate mean and extremes affecting agriculture in Europe*

by Prof. M. Petrakis, National Observatory of Athens, Greece.

- *Foundations of Excellence in Workforce Energy Education and Training in Houston, Texas*

by Prof. John K. Galiotos, Houston Community College, USA.

- *The Energy Sustainability Roadmap of Greece*

by Prof. Christopher J. Koroneos, Aristotle University of Thessaloniki, Greece.

- *Deregulated Electricity Market issues in South-Eastern Europe*

by Prof. Thales M. Papazoglou, Technological Educational Institute of Crete, Greece.

- *Inorganic Pre-Polymerised Coagulants: Current Status and Future Trends*

by Prof. A. I. Zouboulis, Aristotle University, Greece.

- *A new Concept for the Geometry of Biological Structures beyond the Cell Level. The role of Irrational Numbers*

by Prof. Vassilis Gekas, Technical University of Crete, Greece.

We would like to thank all members of the organizing laboratories for their contribution to the organization of the conference.

The contents of this Book is also published in the CD-ROM Proceedings of the Conference. Both will be sent to the WSEAS collaborating indices after the conference: www.worldses.org/indexes.

Also the papers of this book is permanently available to all the scientific community via the WSEAS E-Library. Another additional feature of EEESD'07 was that the WSEAS society provided the participants with a username and password without an expiry date for on-line access in the WSEAS Conference proceedings (1996 -...). WSEAS also distributed to all the participants the CD-ROM Proceedings of the EEESD 2006 (Athens, Greece, July 2006).

Expanded and enhanced versions of papers published in these conference proceedings also going to be considered for possible publication in one of the WSEAS journals that participate in the major International Scientific Indices (Elsevier, Scopus, EI, Compendex, INSPEC, CSA see: www.worldses.org/indexes) these papers must be of high-quality (break-through work) and a new round of a very strict review will follow. (No additional fee will be required for the publication of the extended version in a journal).

We cordially thank all the people of WSEAS for their efforts to maintain the high scientific level of conferences, proceedings and journals.

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