

R'07 World Congress on Recovery of Materials and Energy for Resource Efficiency, Davos, Switzerland, September 3 – 5, 2007

Editorial

Economic growth under the condition of limited resources requires innovations for the materials life cycle. Both the global economy and the environment benefit from waste avoidance strategies and technologies for the highly efficient conversion of matter and/or energy. Excellence in materials and energy efficiency is also a precondition for combating climate change.

The R'07 World Congress is the 8th event in the R' Congress series which started in 1993 in Geneva, Switzerland, and was repeated in Geneva 1995, 1997 and 1999. After R2000 in Toronto, Canada, the R' Congress was held again in Geneva in 2002 and in Beijing, Peoples Republic of China, in 2005.

We are proud to provide you with the contributions to the R'07 World Congress on the present CD and hope you will enjoy this unique documentation of scientific and practical efforts to close material loops in an energy-efficient way throughout the world.

Contributions from emerging economies, which have been very inspiring in the past conferences, are most important in today's globalized world.

The work documented on this CD addresses experts from science and engineering, from supply and recycling industries, from public authorities and international organizations in order to stimulate closer cooperation of the various disciplines and stakeholders across the materials life cycle. It aims to improve material and energy efficiencies in industry.

Issues of environmental protection are treated where they are related to improving materials and energy efficiency and minimizing disposal, including the integration of renewable energy and biomass into the production chain.

Solutions for complex environmental problems can only result from co-operative behaviour: R'07 offered a balanced dialogue between industry and trade, science and academia as well as the public sector. And sound decisions always consider ecology, economy, psychology and politics.

Sustainable development requires a substantial reduction of the life-cycle-wide resource demand per consumed service unit. Therefore, optimal solutions for the trade-off between closing material loops and saving energy for processing and transport have to be found. This may involve integrated resource management and improved information processing, as well as innovation at the level of technological processes, products, product-service systems, and institutional frameworks.

R'07 was strongly supported by a group of organising and co-organising institutes and bodies. These are the Swiss Federal Laboratories for Materials Testing and Research Empa as main organizer, the Swiss Academy of Engineering Sciences SATW, the Chinese Academy of Sciences CAS, the Board of the Swiss Federal Institutes of Technologies, the Paul Scherrer Institut PSI, the Swiss Federal Institute Technology ETHZ Zurich, the Swiss Agency for Development and Co-operation SDC/DEZA), the State Secretariat for Economic Affairs seco, the Federal Office of Environment, Forest and Landscape FOEFL/BAFU, the Canton of Graubünden, the landscape of Davos, Davos Tourism, Net4u GmbH, and many others.

In order to provide sound, relevant and useful information, the contributions were selected by a scientific committee by the following criteria: practical relevance, scientific content, originality and economic feasibility.

A Steering Committee with members from many countries helped to shape the programme by indicating and contributing the most topical issues in the field of Integrated Resource Management (IRM).

Delegates from more than 50 countries were attending R'07. Contributions from more than 40 countries, about 100 oral and 50 poster presentations give an excellent overview of the conference topics. China, Switzerland, Germany, India, Japan, Italy and The United States of America are top contributors (in number of papers). The conference proceedings compiled on this CD give an excellent overview of all the topics dealt with.

A special thank goes to all the scientists and practitioners for their excellent contributions, to the members of the steering committee, the scientific and the industrial committees, to all the supporting organizations and last but not least to Davos Congress Centre for providing the facilities and outstanding services and support.

Dr Lorenz Hilty, Empa, Switzerland, Chairman of the R'07 Scientific Committee

Dr Xaver Edelmann, Empa, Switzerland, R'07 Congress Chairman

Dr Arthur Ruf, SATW, Switzerland, Chairman of the R'07 Industrial Committee

Contact: Therese Meier, therese@meier@empa.ch