

FONDAZIONE «ALESSANDRO VOLTA»
ANNESSA ALL'ACCADEMIA NAZIONALE DEI LINCEI

XIV INTERNATIONAL CONFERENCE

**ENERGY CRISIS, WATER SHORTAGE AND CLIMATE CHANGES
IN THE MEDITERRANEAN AREA: THE INVOLVEMENT OF CHEMISTRY**

CASTIGLIONE DELLA PESCAIA (GROSSETO)
2 - 6 MAY 2008

PROGRAMME

THE CONFERENCE

Problems connected to the energy crisis, climate changes and water shortage were dramatically increasing in the last decade and represent today a major obstacle to the socio-economical development of a large number of countries. These problems are particularly important in the Mediterranean area, owing to its high natural climatic variability, to its peculiar geographical situation and to its millenary history of fragmentation.

For these reasons the Accademia Nazionale dei Lincei has decided to organise a meeting in which highly qualified experts from all countries of the Mediterranean region are invited to present their opinions and suggestions and to analyse the future actions to ensure a sustainable future to the Mediterranean area.

INTERNATIONAL ORGANIZING COMMITTEE

Salvatore CALIFANO (Italy), Sergio CARRÀ (Italy), Luisa CIFARELLI (Italy), Christos FLYTZANIS (France), Venice K. GOUDA (Egypt), Joshua JORTNER (Israel), Emilio PICASSO (Italy), Ugo ROMANO (Italy), Luis VÁZQUEZ (Spain).

INTERNATIONAL ADVISORY COMMITTEE

Sultan T. ABU-ORABI (Jordan), Vincenzo BALZANI (Italy), Aaron CIECHANOVER (Israel), Mostafa A. EL-SAYED (USA/Egypt), Giovanni GIACOMETTI (Italy), Dweik HASAN SALAH (Palestinian Authority), Bassam HAYEK (Jordan), Jean Marie LEHN (France), Lamberto MAFFEI (Italy), Costas PAPANICOLAS (Cyprus), Gregoris STEPHANOPOULOS (Greece), Francisco VALERO (Spain), Ahmed ZEWAİL (Egypt).

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Sponsored by

 <p>COMPAGNIA di San Paolo</p>	 <p>ENTE CASSA DI RISPARMIO DI FIRENZE</p>
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FRIDAY MAY 2nd

Afternoon session:

Climate changes I

- 16.00 Welcome addresses
- 16.20 Costas PAPANICOLAS: *Climate Change, Energy and Water Crisis: Manifestations of the physical basis of globalization*
- 17.10 Sylvie JOUSSAUME: *Past and future climate changes with a focus on the Mediterranean Region*
Chair: Venice K. Gouda
- 18.00 Coffee Break
- 18.20 José Luis SANCHEZ GOMEZ: *Storm activity and precipitation from different points of view: microphysics, radar meteorology, mesoscale modeling, hail climatology and trends*
- 19.10 Franco PRODI: *Climate changes: natural and anthropic causes*
Chair: Manuel R. Llamas
- 20.00 - 22.00 Dinner

SATURDAY MAY 3rd

Morning session:

Climate changes II

- 09.00 Hervé LE TREUT: *The mechanism of climate science in response to greenhouse increase and the associated uncertainties*
- 09.50 HRH Princess Sumaya BINT EL HASSAN: *El Hassan Science City; making a change to adapt for climate change*
- 10.30 Euripides STEPHANOU: *Eastern Mediterranean: a crossroad of toxic pollutants*
Chair: Sylvie Joussaume
- 11.20 Coffee Break
- 11.40 Giorgio FIOCCO: *Brief survey of modern instruments for the study of the atmosphere*
- 12.20 Tatiana DI IORIO: *Transport of desert dust in the Mediterranean basin*
- 12.40 Alcide G. DI SARRA: *Radiative effects of desert dust*
Chair: Hervé Le Treut
- 13.00 Lunch

Afternoon Session:

Climate changes III - Water shortage I

- 15.00 Jos LELIEVELD: *Air quality and climate change in the Mediterranean basin*
- 15.50 Gideon DAGAN: *Modelling of Water flow and pollutant transport by groundwater*
Chair: Costas Papanicolas
- 16.40 - 17.00 Coffee Break
- 17.00 Andrea RINALDO: *River networks and ecological corridors*
- 17.50 Guido VISCONTI: *Hydrological and meteorological changes related to the land uses variations in the Mediterranean Region*
Chair: Franco Prodi
- 18.30 ROUND TABLE - CLIMATE: Joshua Jortner, Sylvie Joussaume, Franco Prodi, Costas Papanicolas, Jos Lelieveld, Dweik Hasan Salah
- 20.00 Banquet

SUNDAY MAY 4th

Morning session

Water shortage II

- 09.00 Venice K. GOUDA: *The role of chemistry in mitigating water shortage threats*
09.50 Manuel R. LLAMAS: *The role of the advances of Science and Technology to solve the water problems*
10.40 Dweik HASAN SALAH: *The water crises in Palestine. Health and environmental impact*
Chair: Christos Flytzanis
- 11.10 Coffee Break
- 11.30 Marcello BENEDINI: *Availability of the water resources in the Mediterranean countries*
12.20 Mohamed SABRY ABDEL-MOTTALEB: *Field solar photocatalytic decontamination and disinfection of drinking water using low cost compound parabolic collector and paper supported nanostructured TiO₂.*
Chair: Gideon Dagan

13.00

Lunch

Afternoon session:

Water shortage III - Energy I

- 15.00 Manuel R. LLAMAS: *The groundwater development silent revolution in the EU Southern Member States*
15.50 Gregoris STEPHANOPOULOS: *Combining the chemistry of life with the chemistry of man to generate new sources of liquid transportation fuels*
Chair: Marcello Benedini
- 16.40 Coffee Break
- 17.00 Costas VAYENAS: *Climate changes, fuel cells and our energy future*
17.40 Omar FASSI-FEHRI: *The question of the energy in Morocco*
18.20 Felix TELLEZ: *Status and perspectives of concentrating Solar Power (CSP) technology and market development*
Chair: Ugo Romano

20.00

Dinner

- 21.30 ROUND TABLE - WATER: Christos Flytzanis, Marcello Benedini, Venice K. Gouda, Manuel R. Llamas, Gideon Dagan.

MONDAY MAY 5th

Morning session:

Energy II

- 09.00 Jean-Luc DUPLAN: *Fuels from biomass: Prospects and R&D Challenges*
09.50 Sergio CARRA': *The role of chemistry in the incoming energy scenario*
10.40 Maria FLYTZANI-STEPHANOPOULOS: *Nanocatalysis for Clean Energy and Sustainability*
Chair: Joshua Jortner
- 11.30 Coffee Break
- 11.50 Francesca FERRAZZA: *Photovoltaic technology: current status and future perspectives*
12.20 Vincenzo BALZANI: *The Future of Energy Supply: Challenges and Opportunities*
Chair: Sergio Carrà
- 13.00 Lunch

Afternoon Session:

Energy III

- 15.00 Ugo ROMANO: *Future Trends in the Oil & Gas Industry: New Production and Upgrading Technologies*
15.50 Iakovos VASALOS: *The role of catalysis for a sustainable environment*
16.40 Presented papers
Chair: Maria Flytzani-Stephanopoulos
- 17.30 Coffee Break
- 17.50 Sultan T. ABU-ORABI: *The necessity for Nuclear power to Jordan*
18.30 Giorgio Mario GIACOMETTI: *Bio-production of hydrogen by photosynthetic water splitting*
Chairman: Jean-Luc Duplan
- 19.30 Dinner
- 21.30 ROUND TABLE - ENERGY & ECOLOGY: U. Romano, S. Carrà, G. Stephanopoulos, J.L. Duplan, O. Fassi-Fehri, Hervé le Treut, Euripides Stephanou

TUESDAY MAY 6th

Morning session:

Conclusions

- 09.00 ROUND TABLE - INTERNATIONAL SCIENCE TECHNOLOGY COLLABORATIONS IN THE MEDITERRANEAN AREA: Joshua Jortner, Venice K. Gouda, HRH Princess Sumaya Bint El-Hassan, Christos Flyzanis, Manuel R. Llamas, Salvatore Califano
11.00 Conclusions and Farewell greetings
- 13.00 - 15.00 Lunch