



SEMINAR

organized by **Pr Jean-Marie Tarascon**
 Chair in Sustainable Development – Environment, Energy and Society
 and Dr Jennifer Peron, Dr Olivier Fontaine, M. Guillaume Muller
 Associate Researchers and PhDs at Collège de France

Energy: socio-economical stakes and technological challenges

June 6th and 7th, 2011

Energy is definitely the lifeblood of modern societies, electricity being the vector with the kiloWatt-hour that could become our next monetary system. This energy field is getting high press coverage so that it had become quite difficult to sort out dreams from reality. What is the true story behind all of this? The aim of this 2-day seminar is to bring an answer to this question by reuniting speakers of various nationalities and fields of expertise. The topics to be addressed are research organization and funding as well as fundamental and applied aspects related to the production, conversion and storage of renewable energies issued from biomass, solar, as well as the use of nuclear energy or fossil energies with CO₂ sequestration. The general context of the recycling process will be discussed too. The impact of these new means of producing decarbonated energies in the domain of electric transportation and network applications will be described by industrial experts in the field as well as economists and philosophers. Due to its informative and scientific aspects, this seminar is aimed at a diverse audience; its ultimate purpose being to enrich discussions about future energies stakes, foster exchanges and even collaborations between participants coming from different but fascinating horizons. ■

6 june - Monday

- 9h00 Welcome, J-M. Tarascon
Recalling the challenges
- 9h15 Harriet KUNG, Associate Director of the Office of Science, Office of Basic Energy Sciences, USA
Financing and research issues on energies within the US
- 10h00 Donald Sadoway, Massachusetts Institute of Technology
Batteries: the key enablers towards a carbon-free Economy

- 10h45 Coffee break

- 11h00 Peidong Yang, University of California, Berkeley
Semiconductor nanostructures for solar fuel generation
- 11h45 Jean Francois Guillemoles, Institut de recherche et développement sur l'énergie photovoltaïque
Photovoltaics in the XXIst century: achievements and challenges

- 12h30 Lunch break

- 14h15 Patrice Geoffron, Université Paris Dauphine - Centre de Géopolitique de l'Energie et des Matières Premières
Economical and political issues in relation with energy
- 15h00 Yves Bréchet, Institut Polytechnique de Grenoble
Materials for nuclear energy: looking ahead

- 15h45 Tea break

- 16h00 Daniel Thomas, Université Technologique de Compiègne
Biomass and Biorefinery: what can be really expected?
- 16h45 Francois Guyot, Université Paris Diderot
CO₂ underground storage, fossil fuels and hydrogen: expected and unexpected connections

7 june - Tuesday

- 9h00 Didier Houssin, International Energy Agency
Role of renewable energies in long term energy prospects
- 9h45 Marc Fontecave, Collège de France
Artificial photosynthesis: from basic concepts to recent developments

- 10h30 Coffee break

- 10h45 Florence Lefebvre-Joud, Commissariat à l'Energie Atomique, Grenoble
Fuel cells technology: which may be the winners?
- 11h30 Anna Teyssot, Renault
Electric vehicles: the impact of the battery on their usage

- 12h15 Lunch break

- 14h00 Dominique Bourg, Université de Lausanne, Institut de politiques territoriales et d'environnement humain
Which energy for which society? Not a single solution
- 14h45 Farouk Tedjar, Société Recupyl, Institut Polytechnique de Grenoble
The world of reincarnation of materials

- 15h30 Tea break

- 15h45 Jacques Saint-Marc, Groupe Interministériel Mobilités
Sustainable development and tomorrow's cities
- 16h30 Round table / Closing remarks
What solutions to the energy challenges?
Animated by Vincent Dusastre, Nature Publishing Group

Seminars will be given in English on Monday morning and French on Monday afternoon and Tuesday, with simultaneous translation.

