

CHAIRMAN'S MESSAGE



Dear Member of the PV Solar Community,

It is my great honour and pleasure to invite you to participate in the 27th European Photovoltaic Solar Energy Conference and Exhibition which will be held for the first time in Frankfurt, Germany. Following what has become a tradition and a must for many in the sector, the European and the world photovoltaic community will meet, discuss and debate about the most recent scientific progresses, technological successes, industrial developments, cost reductions, financial and policy issues or market deployment results. The unique feature of this conference is the fact that it represents a "melting pot" where all the "hot" subjects around photovoltaic technology are being addressed.

Times are indeed hot these days with major challenges ahead of us. Private and public economies, countries and whole continents are facing situations they have never encountered before. Traditional values and certainties are changing rapidly; calling for flexibility, new solutions and often completely new mind-sets. Energy topics have gained much importance within this overall demanding development. As evidenced by the IEA's recent World Energy Outlook, we have not yet managed to steer our ship in the right direction. "Governments need to introduce stronger measures to drive investment in efficient and low-carbon technologies. The Fukushima nuclear accident, the turmoil in parts of the Middle East and North Africa and a sharp rebound in energy demand in 2010 which pushed CO2 emissions to a record high, highlight the urgency and the scale of the challenge," said the IEA Executive Director Maria van der Hoeven.

As we all know, photovoltaics can and will be part of the solution, if we manage to deliver on the technical and economic promises on the one hand and if we can answer the critical questions and overcome the scepticisms that the sector is facing on the other hand. This will not be an easy task, especially in these days where painful consolidation takes place in the industry and public support needs to be well justified. But I am convinced that it is a doable task.

Frankfurt has a combination of attributes which will hopefully open our minds in searching for new solutions. The pulsating feature of a major financial market place, important industrial manufacturing activities, a European hub for international air and train travel, as well as a prominent conference and exhibition center: These facets will help us to position photovoltaics in the real world and to make sure that it stays there. Frankfurt has a long history and cultural tradition. It's also the famous German poet Johann Wolfgang von Goethe's birthplace. Surely this is the perfect inspirational setting for us to think beyond science and technology.

I would therefore encourage and invite all of you to think out of the box, go beyond the short term, advance your ideas and take part in the discussions which will take place at the 27th EUPVSEC in Frankfurt. Together, we can manage to make photovoltaics part of the solutions we are looking for in our everyday lives; the sooner, the better.

I look forward to welcome you in Frankfurt!

Dr. Stefan Nowak
Chairman IEA PVPS, International Energy Agency
Photovoltaic Power Systems Programme
Conference General Chairman

The trend-setting platform for the world's PV specialists

Institutional support:

European Commission
UNESCO – United Nations Educational, Scientific and Cultural Organization – UNESCO's Natural Sciences Sector
WCRE – World Council for Renewable Energy
IPVEA – International Photovoltaic Equipment Association

Institutional PV Industry Cooperation:

EPIA – European Photovoltaic Industry Association

Coordination of the Technical Programme:

European Commission DG Joint Research Centre

The EU PVSEC 2012 is associated with the
International Year of Sustainable Energy for All



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
Joint Research Centre



With the support of UNESCO's
Natural Sciences Sector



WCRE – World Council
for Renewable Energy



International Photovoltaic
Equipment Association



European Photovoltaic
Industry Association

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www.photovoltaic-conference.com
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Call for Papers

abstracts to be submitted by 15 February 2012

EU PVSEC 2012

27th European Photovoltaic Solar Energy Conference and Exhibition

The most inspiring Platform for the global PV Solar Sector

Messe Frankfurt
Frankfurt, Germany

Conference 24 - 28 September 2012
Exhibition 25 - 28 September 2012

www.photovoltaic-conference.com



EU PVSEC 2011

Conference General Chairman:

Dr. Stefan Nowak
Chairman IEA PVPS, International Energy Agency
Photovoltaic Power Systems Programme

Technical Programme Chairman:

Dr. Arnulf Jäger-Waldau
European Commission
DG Joint Research Centre

27th EU PVSEC

**The world's leading
science-to-science, business-to-business
and science-to-industry PV Solar Event**

PROGRAMME

The 27th EU PVSEC is the leading Conference and the trend-setting industry Exhibition in the field of Photovoltaics. The Conference comprises more than 1,500 presentations in plenary, oral and visual sessions. In addition, the 27th EU PVSEC offers a range of EU PVSEC Parallel Events:

- the 9th European PV Industry Summit, jointly organised with EPiA, the European Photovoltaic Industry Association
- the 3rd PV Production Forum 2012, jointly organised with IPVEA, the International Photovoltaic Equipment Association
- the EU PVSEC Business Forum 2012, focusing questions for the global PV industries
- the 2nd Forum Photovoltaics, Forms, Landscapes
- workshops with international organisations from the PV Solar sector like IEA PVPS, EU PV Technology Platform
- a dedicated area for Industry Presentations, accessible for all participants of the EU PVSEC

CONFERENCE SUBJECTS

SUBJECT 1: MATERIAL STUDIES, NEW CONCEPTS AND ULTRA-HIGH EFFICIENCY

1.1 Fundamental Material Studies

Theoretical studies and visions, new measurement techniques and equipment including standards, modelling and simulation, PV and hydrogen.

1.2 New Materials, Cells and Modules

Nanotechnologies and quantum effects, new cell and module concepts, new substrates, interconnections and encapsulation, thermophotovoltaics, LED-related issues.

1.3 Solar Cells, Modules and PV Systems for Space Applications

Materials and processing for space cells and modules, thin film alternatives, issues related to heat evacuation, stability and lifetime, reliability and performance.

1.4 Terrestrial Concentrator Systems

Materials and processing for cells and modules for terrestrial concentrator applications, alignment, measurements of cells, devices and system performance including standards, tracking and reliability.

SUBJECT 2: WAFER-BASED SILICON SOLAR CELLS AND MATERIALS TECHNOLOGY

2.1 Silicon Feedstock, Crystallisation and Wafering

Efficient production technologies for silicon and wafers, solar grade silicon properties and specs, testing, performance, costs.

2.2 Silicon Solar Cell Improvements

Device concepts and processes for wafers, sheets and ribbons.

2.3 Silicon Solar Cell Characterisation and Modelling

Measurements and modelling.

2.4 Manufacturing Issues and Processing

Handling and automation, in-line monitoring, safety, waste treatment, economies of scale.

SUBJECT 3: THIN FILM SOLAR CELLS

3.1 Thin Film Crystalline Silicon Solar Cells

Theoretical studies, process technologies for thin film crystalline silicon materials and solar cells, characterisation, manufacturing and up-scaling technologies, testing, performance.

3.2 Amorphous and Microcrystalline Silicon Solar Cells

Theoretical studies, process technologies for amorphous and microcrystalline silicon cells and modules, characterisation, aspects of high volume and large area manufacturing, testing, performance.

3.3 CdTe, CIS and Related Ternary and Quaternary Thin Film Solar Cells

Theoretical studies, process technologies for thin film CdTe, CIS and related solar cells and modules, characterisation of materials and devices, manufacturing and up-scaling technologies, testing, performance.

3.4 Organic-based PV

Polymer PV and hybrid approaches, dye-sensitised cells and modules, graphene and other use of organic materials, stability aspects.

SUBJECT 4: COMPONENTS FOR PV SYSTEMS

4.1 PV Modules

Module design and manufacturing technology, quality and safety, product life time, aging; Non-standardised measurements and testing, energy rating; Materials for PV modules.

4.2 Balance of System Components

Inverters and grid interfacing, batteries, charge regulators, mounting structures, trackers, cabling, measurements and testing, and regulations.

4.3 Standardisation

Current standards for PV cells and modules: lifetime testing, power rating, design, measurement uncertainties, traceability; Prenormative standards; Solar radiation: solar radiation measurements, instrument calibration.

SUBJECT 5: PV SYSTEMS

5.1 Large PV Power Plants and Distributed PV: System Aspects and Grid Connection

Planning, installation, safety and grid interfacing, auxiliary grid services, monitoring and performance, cost analyses, success stories of projects and lessons learned.

5.2 PV and Architecture

PV in buildings and urban planning, landscaping, public acceptance and building regulations.

5.3 Off-grid Applications

Stand-alone and hybrid systems, minigrids, PV for communication, lighting, rural electrification.

SUBJECT 6: PV - A MAJOR ELECTRICITY SOURCE

6.1 Markets

Market assessment and projections (grid parity), financing and investment (from roof top to utility scale), economics and cost development.

6.2 PV in the Electricity Mix

Transmission and distribution systems, operator issues, infrastructure, storage, management and control systems; Combination with other renewable sources, national and European regulations and strategies.

6.3 Sustainability Aspects

Life cycle analyses, sustainability aspects of cells, modules, components and systems (e.g. energy payback time, raw materials availability and usage), recycling and waste management, water use.

6.4 PV Globalisation, Policies and Administrative Barriers

Awareness campaigns, communication methods and tools, education and training, job creation and globalisation. R&D strategies and programmes, international cooperation and partnerships, market stimulation policies.

REVIEW PROCEDURE

Papers will be presented in plenary, oral and poster sessions and all presented papers will be published in the Proceedings. Authors wishing to submit a contribution should read the following instructions carefully and send an abstract by using the Online Submission Form in the User Area on www.photovoltaiic-conference.com by 15 February 2012.

The abstract, single spaced and in English, should include:

- Applicable subject number (1 to 6) and subsection (e.g. 1.2)
- Full title
- Full name, affiliation, address, phone/fax/e-mail of one author for all correspondence
- For each author and co-author, full name and affiliation
- Short introductory summary (approx. 1,200 characters) for publication on the EU PVSEC Personal Programme Planner website
- Purpose of the work
- Approach
- Scientific innovation and relevance
- Results
- Conclusions

The abstract has to be one full page (size A4, 210 x 297mm) plus 1 to 3 explanatory pages. Each abstract will be reviewed by at least three independent members of the International Scientific Committee, made up of more than 180 leading experts from the global PV Community.

DEADLINE FOR RECEIPT OF ABSTRACTS: 15 FEBRUARY 2012

Only contributions complying with the above specifications will be considered. Please submit one copy of this complete information (abstract plus 1 to 3 explanatory pages) as a *.pdf file by using the Online Submission Form in the User Area on www.photovoltaiic-conference.com. You need to log-in as the person wishing to be corresponding author for the abstract submission (please use the corresponding author's user name and password, e.g. no secretary log-in), as the system automatically uses the personal data of the logged-in person as contact person. Please make sure that your abstract *.pdf file is not password protected.

For questions concerning abstract submission please contact:

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All authors will be notified of the decision of the Programme Committee. Authors of accepted abstracts will receive special guidelines for the preparation of the final papers for the Proceedings.

NEWS FOR AUTHORS

- **Citability of Papers:** All submitted final papers of plenary, oral and visual presentations will be published online and coded by a digital identifier (DOI code) provided by the German National Library of Science and Technology. This guarantees an unequivocal and permanent identification and citability of all papers of the EU PVSEC Conference Proceedings.
- **EU PVSEC Student Awards:** To encourage high-quality work amongst young researchers, the EU PVSEC Student Awards will be delivered on the occasion of the 27th EU PVSEC in recognition of the most remarkable and outstanding student research work in the field of PV.
- **Peer Review:** A selected number of submitted papers will be invited for a Peer Review Process for publication in a renowned scientific journal.