



Progress in *Advanced Materials and Nanotechnology* for Photovoltaics: from Laboratory to the Market.

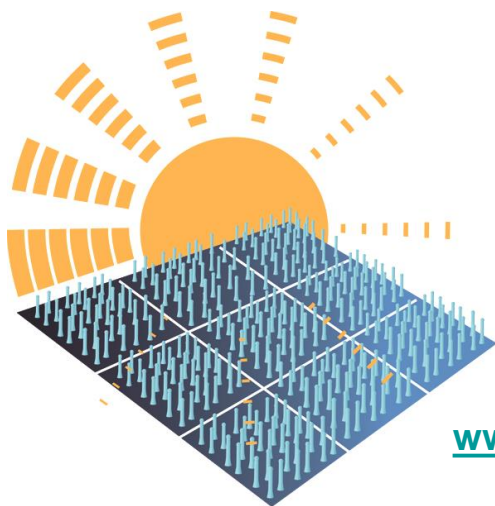
A central pillar for the European PV innovation strategy

The EU PV Clusters 3rd Workshop and General Assembly

*in association with a MatHero Workshop on Industrial
Perspectives and Standardization for Organic Photovoltaics*

25th - 27th May 2016

LEITAT Technological Center (LEITAT)
Barcelona - Spain



www.eupvclusters.eu



OBJECTIVES

The third **EU PV Clusters Workshop and General Assembly** will take place in Barcelona (Spain) from 25th to 27th May 2016, hosted by MATHERO, a European project funded by the NMP Programme under the EU 7th Framework Programme for Research and Technological Development (FP7). This event takes place every three years. The 2016 edition intends to build on the success of the two first Workshops (October 2010 and November 2013) to:

1. Highlight key results of the research and innovation (R&I) projects supported by various programmes of FP7 and Horizon 2020 (the current EU Framework Programme for Research and Innovation 2017-2020) in the field of Photovoltaics (PV) and review their technology readiness level (TRL) in a value-chain approach.
2. Give an updated overview of the portfolio of projects in the PV field to bring forward the global picture of PV R&I in Europe and highlight the impact of advanced materials and nanotechnology on the European PV industry.
3. Identify common R&I priorities for bridging the gap between advanced materials and nanotechnology-based innovation and the successful commercialisation of innovative products and industrial technologies.
4. Provide a forum for discussion, problem solving and planning of R&I activities in Europe and give key recommendations on future R&I needs in the PV domain, including cross-cutting topics (engineering and upscaling, characterisation, modelling, standardisation, safety and pilot lines for PV)
5. Enable the materials, nanotechnology & PV communities in Europe to develop strategic collaborations and industrial partnerships.
6. Review the existing materials, nanotechnology and PV roadmaps to support the development of European PV industry, and to implement them in Horizon 2020.

THE EU PV CLUSTERS

The 2016 event will gather more than 40 European projects that make up **EU PV Clusters**, a unique initiative of its kind in Europe, launched in 2010 to provide a forum for all EU-funded projects, European, national and regional initiatives and industrial stakeholders to support industrial technologies for PV: www.eupvclusters.eu. It has seven individual clusters:

Cluster 1: Wafer-based PV cells

First generation semiconductor PV cells: crystalline, wafer-based solar cells mainly made from silicon materials, i.e. semiconductor wafer-based Si PV technologies.

Cluster 2: Thin-film PV cells

Second generation PV cells: thin film solar cells, such as amorphous or microcrystalline silicon, CIGS, cadmium telluride, etc.

Cluster 3: Third generation PV cells

PV cells obtained through the application of advanced concepts and materials, such as various nanomaterials, including quantum dots, super lattices, nanoparticles, nanowires, dyes, organic/polymer materials, hybrid organic-inorganic concepts, biomimetic materials, combinations of these, etc.

Sub-cluster 3.1: Nanostructures

Sub-cluster 3.2: Organic PV cells or dye-sensitized PV cells

Sub-cluster 3.3: Novel concepts

Cluster 4: Concentration & tracking

PV cells based on optical concentration and tracking.

Cluster 5: Innovative installations

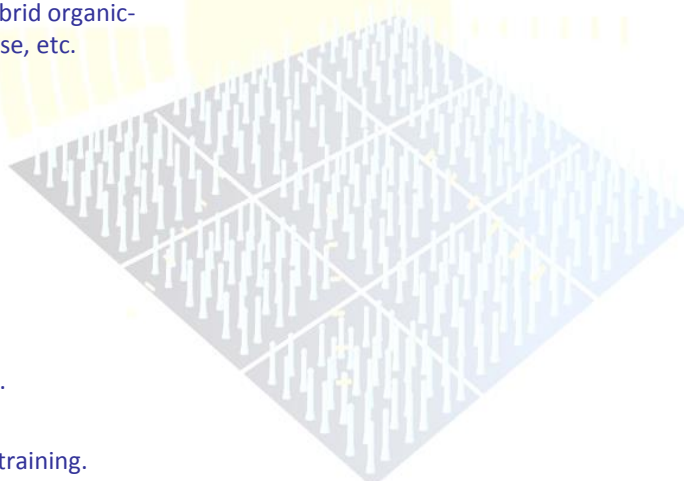
Photovoltaics for distribution systems.

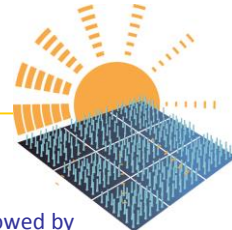
Cluster 6: Production equipment & processes

Demonstration of high performance equipment and processes.

Cluster 7: Industry support

Infrastructure, market, quality, legal perspectives and specific training.





OUTLINE OF PROGRAMME

25th May - EU PV Clusters WS & General Assembly

- Welcome and opening (10:30 – 11:00)

Enric Casassas Room

The opening session will be followed by two parallel sessions:

- Session 1: Presentation of the Clusters and Projects with introductions by each Cluster Representative **Graus Aulari Room (11:00 - 18:15)**

- Cluster 3: Third Generation PV cells / Nanostructures
- Cluster 3: Third generation PV cells/Organic PV cells or dye-sensitized PV cells

- Session 2: Presentation of the Clusters and Projects with introductions by each Cluster Representative **Eduard Fontseré Room (11:00 - 18:15)**

- Cluster 1: Wafer-based PV cells
- Cluster 2: Thin-film PV cells
- Cluster 4: Concentration & Tracking

8.00 PM - Gala Dinner

26th May - EU PV Clusters WS & General Assembly

- Session 3: Presentation of Clusters and Projects with introductions by each Cluster Representative (continued)

Graus Aulari Room (09:00 - 16:30)

- Cluster 3: Third generation PV cells/Novel Concepts
- Cluster 6: Production equipment & processes
- Cluster 5: Innovative installations
- Cluster 7: Industry support

- Conclusions and Round Table (16:30-18:00): **Advanced Materials and Nanotechnology for Photovoltaics: a central pillar for the European PV innovation strategy**

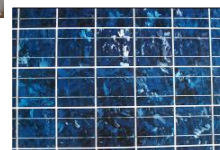
Stakeholders in the strategic debate will include:

- EU PV Clusters projects closing in 2016
- EPIA (European PV Industrial Association)
- European PV Technology & Innovation Platform
- NANOFutures (European Technology Integrating and Innovation Platform on Nanotechnology)
- KIC (Knowledge & Innovation Community) InnoEnergy
- EMIRI (Energy Materials Industrial Research Initiative)
- EERA (European Energy Research Alliance)

27th May – OPV Workshop

MatHero project workshop on Industrialization and Standardisation.

The Workshop and General Assembly will take place on Wednesday 25th May and Thursday 26th May. This will be followed by a MATHERO session on Friday 27th May, that will focus on industrial and standardisation perspectives for organic photovoltaics.



The Clusters are invited to come together to the third General Assembly and Workshop to share views and meet the key European PV industrial and research stakeholders. The overall goal is to present and discuss innovative solutions to foster the integration of PV for cost-reduction and industrial uptake of new efficient technological options, considering the whole value-chain for innovative technologies, including consumer and market factors.

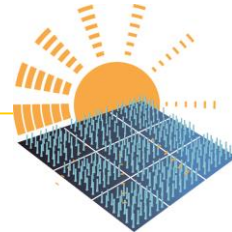
The Opening Session will be followed by technical sessions dedicated to each Cluster, to address the different PV technologies.. Projects from various Programmes will be represented.

In the sessions, the projects of each Cluster will be introduced, with focus on advanced materials and nanotechnology and the benefits and barriers of the technological approaches used towards higher TRLs and industrial uptake. Each session will be followed by a discussion to help the exchange of information at all levels.

The expected results in terms of innovative industrial technologies, industrial bottlenecks and perspectives, patents and industrial impact in the short and longer term will be identified and debated on the last day to contribute to the set-up of a European strategy for PV innovation for 2020 and beyond.

To meet this objective, it is planned to conclude the event with a cross-cutting session on advanced materials and nanotechnology-based innovation, with the participation of all the key European initiatives, including the European Technology Integrating and Innovation Platform on Nanotechnology (NANOFutures) and EMIRI (Energy Materials Industrial Research Initiative).

The MATHERO project will hold a workshop dedicated to standardisation and industrial application of organic photovoltaics. All members of the EU PV Clusters initiative are welcome to attend this session.



PARTICIPATION

The Workshop can be attended upon invitation only by the Steering Committee of the EU PV Clusters initiative and there is no attendance fee.

It is addressed to:

- Partners of EU-funded projects active advanced materials & nanotechnology for PV at different TRLs
- PV national representatives from the Member States
- PV technical experts from Europe
- EC Project Officers from the Programmes supporting the projects of the EU PV Clusters initiative
- Representatives of the European Photovoltaic Technology and Innovation Platform
- Representatives of NANO Futures, EMIRI and other and Industrial Initiatives
- Any other PV stakeholder and project – upon invitation by the Steering Committee of the EU PV Clusters.



VENUE

The event will be hosted by the Physics Faculty of the University of Barcelona:
Diagonal, 647
08028 Barcelona
Spain

For more information about the event and for registration, contact the organising team at: eupvclusters@leitat.org



SCIENTIFIC COMMITTEE of the 3rd Workshop and General Assembly of the EU PV Clusters

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