



Meeting Minutes

Subject : 3rd MC Meeting, 2nd WG Meeting, 2nd Conference of COST Action no. MP1307

Conference Name: E-MRS symposium E: Materials Design and Processing Concepts for Efficient and Stable Organic, Hybrid, Perovskite and Dye Solar Cells.

Action Title: “Stable Next-Generation Photovoltaics: Unraveling degradation mechanisms of Organic Solar Cells by complementary characterization techniques (StableNextSol)”

Lille (France), from 11th to 12th May 2015.

Venue: Congress Center (Grand Palais)

1 Boulevard des Cités-Unies
F-59777 EURALILLE, Lille (France)

1. Welcome to participants
2. Adoption of agenda
3. Approval of minutes and matters arising of last meeting
4. Update from the Action Chair
 - a. Status of Action, including participating countries
 - b. Action budget status
 - c. STSM status and new applications
5. Promotion of gender balance and of Early Stage Researchers (ESR)
6. Update from the Grant Holder
7. Update from the COST Association
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 - a. Progress report of working groups
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 - c. Long-term planning (including anticipated locations and dates of future activities)
 - d. Dissemination planning (Publications and outreach activities)
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1. Welcome of participants

The meeting started at 9 a.m. with the Action Chair, Dr Monica Lira-Cantu (MLC), welcoming all participants. MLC briefly presented the current status of the Action. The number of participating countries has increased to 27 COST countries and 3 non-COST countries.

2. Update from the COST Office and general remarks

A presentation from the COST Office was shown by MLC on behalf of Dr Maria Moragues, Scientific Officer (SO) of the Action, who could not attend the meeting. COST Office encourages the participation of Early Stage Researchers (ESR) in their activities, gender balance, geographical balance, as well as the organization of activities in Inclusiveness Countries.

Remarks:

- MC Members are reminded to approve online the Work and Budget Plan for the 2nd Grant Period of the Action with celerity. The urgency comes from the closeness of the first activity of the 2nd year (the ESOS Training School) taking place at the beginning of June 2015.
- Monitoring Progress and Scientific Reporting: Progress Report 1 is due at month 18 of the Action (November 2015). A Rapporteur will be appointed by the SO. The Progress Report will monitor the status of the Action in aspects such as: MoU objectives and deliverables, publications, joint project proposals, management, and budget and participation.
- MC Members are reminded of the StableNextSol COST Action objectives and deliverables, as well as of the Action Working Groups.



- Dr Marta Fonrodona, Grant Manager, made some general remarks about problems encountered during the management of the 1st Grant Period and instructions about the Travel Reimbursement process for this meeting.

3. Status of the Action

MLC gave an update of the status of the MP1307 Action:

Organizational changes: since the last MC meeting, Dr. Tom Aernouts has substituted Dr. Eszter Voroshazi as coordinator of WG6 (New Device Engineering) and Dr. Koen Vandewal has substituted Dr. Lars Müller-Meskamp as Science and Technology Group coordinator and responsible of the Short Term Scientific missions (STSM).

Dr. Marta Fonrodona was proposed by the Action Chair to formally become Dissemination Group coordinator, taking care of task she was performing and interim while unoccupied. The MCs approved the nomination.

Participants: The number of participant countries has increased to a total of 27 COST countries, 1 NNC COST country (Russia) and 2 IPC COST countries (China, USA). Mexico and Brazil are in the process of becoming IPC COST countries. The number of participants has increased to almost 300 members, fact that has decreased the gender balance to 31.2%. Of the 27 COST countries, 13 are COST targeted inclusiveness countries, which were highly encouraged to organize the upcoming activities of the Action.

Objectives: Scientific and networking objectives were reviewed. Status of the Working Groups will be reviewed during the Working Groups Meeting.

4. Action Budget status

MLC summarized the budget status of the 1st Grant Period of the Action, forecast vs. current status and expenses till the end of the period. She also showed the budget proposal for the 2nd Grant Period. MCs are kindly requested to give their online approval in short notice (e-COST emails sent the week before).

5. StableNextSol COST Action activities

Two MC meetings and one WG meeting will take place each Action year plus the approved specific activities (training schools, topic meetings) for each year.

MLC summarized the activities carried out during Grant Period 1 (June 2014 – May 2015): the 2nd MC Meeting, 1st WG Meeting, ISOS-7 that took place in Barcelona (ES) in October 2014 and the 3rd MC Meeting, 2nd WG Meeting, E-MRS Symposium E, object of these minutes.

For Grant Period 2 (June 2015 – May 2016), the first activity will take place in June 2015. The ESOS training School + Industrial Days will take place 4th – 11th June 2015 in Cargèse (Corsica, FR) and is co-organized with ITN Establis. Economical support to trainees from StableNextSol labs that submitted an abstract has been granted, keeping the limit at one trainee per lab to ensure balance of beneficiaries. A new location will be needed for the second activity of GP2, the 4th MC Meeting and 3rd WG Meeting, as Dr. Granek in Poland won't be able to host it. MLC will inform COST about this fact. Anyone wishing to host an activity in autumn 2015 is encouraged to make a proposal.



Following this summary, proposals for future activities were presented and submitted for MC approval. Inclusiveness countries' participation has been encouraged.

The following proposals for activities were presented (they will be uploaded in our web page at <http://stabilenextsol.eu/activities/meetings/5-3rd-mc-meeting-2nd-wg-meeting-e-mrs-symposium-e-11-15-may-2015-lille-france/>):

GP2

Bratislava (SK), April 2016 – MLC, on behalf of Dr Maria Omastova, presented the activity proposal: topical workshop, MC Meeting and WG Meeting. Tentative dates: 19th – 21st April 2016. Dr Karol Vegso presented the two groups of the Slovak Academy of Sciences that will organize the meeting (people, research lines, facilities, expertise) as they are new StableNextSol members. The MCs approved the activity.

GP3

Two proposals will be presented to host an activity in summer 2016 in Greece. The one in Thessaloniki is presented 11th May in the morning and the one in Crete is presented 12th May, as the presenter could not be in time in Lille May 11th at 11h. MCs will decide by email voting after the meeting.

Thessaloniki (GR), July 2016 – Dr. Spyros Kassavetis presented the activity proposal, MC Meeting and WG meeting that would take place together with the Nanotechnology conference.

Lisbon (PT), April 2017 – Dr. Ana Charas proposed to hold the 7th MC Meeting and 2nd WG Meeting together with an industrial day in Lisbon, 5th – 7th April 2017. She presented the proposed meeting location and the Organic Electronics Group at Instituto Superior Técnico (expertise, people, facilities, etc.). The MCs approved the activity.

GP4

Malta (MT), September/October 2017 – MLC presented, on behalf of Prof. Brian Azzopardi, his proposal to hold the 8th MC Meeting, 7th WG Meeting together with a conference (ISOS is the primary target) in autumn 2017 at MCAST in Malta. The organizing group's expertise and facilities were also presented. The MCs approved the activity.

There is a training school forecasted for the 4th grant period and that should take place preferably between January and April 2018. There is no formal proposal to host this event yet.

Barcelona (ES), final MC Meeting – MLC proposed to host the last MC Meeting of the Action, around May 2018, in Barcelona. The MCs approved the proposal.

After all future activities were presented, Dr. Christian Müller presented a Summer School that will take place in Sweden in June 2016 organized by Chalmers University of Technology. The Summer School will be mostly financed by Chalmers and will last for 3 days. They can only finance Swedish students, not those coming from other EU countries and asked whether COST would be able to finance that. MLC will



translate his question to COST.

6. StableNextSol webpage

The new version of the StableNextSol webpage (www.StableNextSol.eu) was presented. Its image has been renovated together with the information contained. Some aspects are still ongoing and will be updated when the corresponding data is available (ex. news).

Organisation, objectives and partners list have been updated. Lists per working group will be made in the future. In the activities tab, presentations of the different meetings have been made available: the kick-off meeting (Brussels, March 2014), the MNPS 8th APC (Heraklion, September 2014) and the 2nd MC Meeting – 1st WG Meeting – ISOS-7 (Barcelona, October 2014). The Dissemination meeting (Thessaloniki, December 2014) attended by the MC Chair had the approval of the Vice Chair and the SO. Formal approval of the MCs was lacking and is granted. Presentations of the meeting object of these minute will be also uploaded.

MCs and project participants were asked to inform the MC Chair or the Dissemination Group coordinator of any publications achieved under the project, so they can be linked in the Action webpage. The first three publications resulting from joint effort of StableNextSol participants are already available online.

7. Additional comments and questions

MLC commented that the Action is a bit behind in dissemination aspects. Webinars are a cheap and useful tool and participants are encouraged to plan webinars (the webinar organized within WG1 was very successful).

Dr. Dan Sporea, from National Institute for Laser Plasma and Radiation Physics (RO), asked to present his lab expertise and research lines, seeking for scientific collaboration with other groups.

MLC encouraged Action participants to benefit from the tools and expertise of the groups within the Action to plan and organise experiments. Experiments already being planned will be commented during the Working Groups Meeting.

Prof. Vaidotas Kazukauskas asked for information (dates, meeting type, duration, process) regarding the meeting in autumn 2015 that has no venue.

It is agreed that the call for the 1st evaluation of the Short Term Scientific Missions (STSMs) for the 2nd Grant Period is extended to Tuesday 20th May 2015.

The MC Meeting is closed.

2nd WG Meeting – Monday 11th May 2015, afternoon

The afternoon session is focused on the STSMs. Dr. Koen Vandewal presents a summary of the STSMs approved and carried out during the first year, together with data on the geographical spread, gender balance and evaluation process. Emphasis is put in recurring issues encountered, like change in dates



once the STSM is approved.

A summary of the results achieved in the STSMs finished before this meeting is presented, either by the beneficiary or the host/home researchers:

- Prof. Eugene Katz presented the results of Dr. Jeff Kettle's STSM "*Application of LDS layers onto OPVs for enhanced performance and lifetime*".
- Dr. Iris Visoly-Fischer presented the results of Dr. Laura Ciammaruchi's STSM "*Stability and degradation studies of organic and hybrid PV devices by concentrated sunlight*".
- Dr. Vasily Trukhanov presented the results of his STSM "*Novel small-molecule bulk heterojunctions for high efficient and stable photovoltaics*".
- Dr. Josep Ferre-Borrull presented the results of Dr. Richard Winfield's STSM "*Reliability of textured OPVs*".
- Dr. Camilla Lindqvist presented the results of her STSM "*Photo-catalysed degradation of PC61BM*".
- Dr. Pavel Troshin presented the results of his STSM "*Outdoor stability of organic bulk heterojunction solar cells based on different photoactive material*" and those of Dr. Liana Inasaridze "*Outdoor stability of a series of conjugated polymers assessed using ESR and UV-VIS spectroscopy*" and Dr. Diana Susarova "*Investigation of photochemical stability of differently functionalized [60]fullerene derivatives*".
- Dr. Roland Roche presented the results of his STSM "*Implementation, validation and comparison of electrical AFM modes on organic photovoltaic solar cells*".
- Dr. Nieves Espinosa presented the results of Dr. Lucia Serrano's STSM "*Creating a degradation and stability database for organic photovoltaics*" and Mr. Yannick-Serge Zimmerman's STSM "*Implementation of OPV leaching data into LCA studies*".
- Dr. Eva Unger presented the results of Mr. Fadi Aldibaja's STSM "*Determination of trap states in hybrid-perovskite solar cell absorber materials using impedance spectroscopy*".
- Dr. Monica Lira-Cantu presented the results of Mr. Anderson Lima's STSM "*Solution processable oxides for perovskite solar cells*".

2nd WG Meeting – Monday 12th May 2015, morning

Science and Technology: Invited talks

The morning started with the invited talks by experts. The session was chaired by Dr. Yulia Galagan.

- Dr. Sylvain Chambon – "*Interfacial thermal stability and degradation in OPV devices*".
- Dr. Michal Dusza – "*Light soaking issues in stability determination of organic solar cells and calcium test for low cost barrier layers*".
- Dr. Frederik Nehm – "*Water permeation through ultra-barriers in an extensive climate matrix*".
- Dr. Simon Züfle – "*Combined simulation and electrical characterization for OPV stability analysis*".
- Dr. Ana Charas – "*Effect of phenanthroline cathode interlayers on the performance of polymer solar cells*".



- Dr. Philippe Leclere – “Exploring the local photovoltaic processes in organic and hybrid photovoltaic devices by means of scanning probe microscopy”.

8. Science and Technology: Experimental

The session was chaired by Dr. Moritz Riede, who encouraged participants to propose new experiments. The coordinators presented the planned experiments for each Working Group.

In WG1 - Technology Monitoring, Dr. Nieves Espinosa presented the status of the OPV review, summarizing what has been done regarding the “Stability review OPV”: the database has been created, scanning of the papers is being carried out and planned until end of summer 2015. One or two review papers are expected as a result of this analysis, which will be written in autumn 2015. The webinar that served as presentation and introduction of the database and the procedure will be included in the StableNextSol webpage.

Similar work (database and analysis) is planned for perovskite solar cells. Planning is already in progress and scanning might start August 2015.

Dr. Harald Hoppe, coordinator of WG4 – Non-destructive characterization, presented the general information and guidelines for planning and managing experiments. He also presented “Experiment 1”, dealing with the stability of P3HT-based solar cells.

Dr. Sjoerd Veenstra, coordinator of WG3 – OPV degradation, presented “Experiment 3”, also called “Testing the test”. This experiment aims to compare degradation conditions using identical samples, i.e. apply all ISOS protocols to one device type. In order to ensure that all devices measured are as identical as possible, the devices chosen are mini-modules manufactured at DTU. Participants were encouraged to participate in the experiment volunteering to apply the ISOS conditions available within their lab.

Dr. Veenstra also presented, on behalf of ReraSolutions, their database, which is offered to the Action to analyse experimental results. A link to the database will be included in the StableNextSol webpage in due course.

Dr. Yulia Galagan, coordinator of WG2 – OPV fabrication, presented “Experiment 4”, dealing with PCDTBT solar cell stability. In this experiment, many producers of PCDTBT-based solar cells will be considered (participants can enrol to manufacture devices) and stability studies will be carried out in one single lab or in a very limited number.

9. Additional comments and presentations

Dr. Pavel Troshin and Dr. Janez Cerar gave each a brief presentation of their labs, facilities and expertise.

Prof. Vaidotas Kazukauskas presented a proposal to host the MC and WG meeting in autumn 2015 in Lithuania. The meeting would be the 4th MC Meeting and 3rd WG Meeting and would be hosted either in Vilnius or in another location in Lithuania September/October 2015. As it was a very preliminary proposal, exact location and dates were not defined and will be determined in the near future. The MCs approved the proposal.



Prof. Emmanuel Kymakis presented the second proposal for an activity in Crete (GR) in summer 2016. MC voting to decide between the two Greek proposals will be done by email.

10. Final remarks from the MC Chair

MLC made a final series of remarks before thanking all MCs and participants and closing the meeting:

- The need to include Early Stage Researchers in the Action activities, especially getting them to collaborate in Dissemination activities.
- MCs were reminded to approve the Work and Budget Plan for the 2nd Grant Period.
- All presentations will be uploaded in the StableNextSol website unless the author states otherwise.
- MCs were reminded to submit their travel expenses and send the TRRs before 25th May.

11. Closing