PECDEMO is a Collaborative Project co-funded by FCH JU under the call SP1-JTI-FCH.2013.2.5. GA n°: 621252. Start date: April 1st, 2014. Duration: 36 months.

Deliverable title: Organization of an international conference and an international symposium by PECDEMO partners

Deliverable nature: Other
Dissemination level: Public
Lead beneficiary: HZB
Contracted date of delivery: Jul-16
Actual date of delivery: Jul-16
Author(s): Matthew Mayer (EPFL)

Photoelectrochemical Demonstrator Device for Solar Hydrogen Generation

Project Deliverable Report – D8.2
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1. EXECUTIVE SUMMARY

Two international research dissemination events were organized by the PECDEMO project, the 2014 IPS-20 Conference and the 2016 Fall MRS Symposium EC4. Focused on the topics of solar to fuels conversion, these events brought together hundreds of researchers from around the globe to present and discuss the latest progress in the field. The events also provided opportunities for dissemination of the research results of the PECDEMO project.
2. DETAILED REPORT ON THE DELIVERABLE

2.1. Background and Objectives

The aim of the deliverable D8.3 was to organize two international events, a conference and a symposium, on the topic of sunlight-driven water splitting. The goals were to bring together experts in the field from around the world to share ideas and progress toward solar fuels conversion, as well as to showcase the results of the PECDEMO project in front of the scientific community.

2.2. Results and Discussion

As already discussed in the Mid-Term Report for WP8, the first goal of organizing an international conference was successfully accomplished by the IPS-20 meeting in Berlin in 2014. The meeting, titled 20th International Conference on Photochemical Conversion and Storage of Solar Energy was organized by HZB and chaired by Prof. Roel van de Krol. The conference was a great success, attracting over 430 participants from 36 countries and featuring 14 plenary speakers, 19 keynote speakers, and hundreds of contributed talks and posters.

link: [http://www.helmholtz-berlin.de/events/ips20/](http://www.helmholtz-berlin.de/events/ips20/)

The second half of the deliverable was to organize a symposium on solar fuels conversion at a large international conference. To this end, members of the PECDEMO consortium are co-organizing Symposium EC4 – Materials, Devices and Systems for Sustainable Conversion of Solar Energy to Fuels, at the 2016 Materials Research Society Fall Meeting in Boston. The symposium program is presently in the planning stage, but the call for contributions was very successful with 135 abstracts submitted. The five-day symposium will take place November 28 – December 2, 2016, and will feature 21 invited speakers, 73 contributed oral presentations, and 21 poster presentations. The four co-organizers are Roel van de Krol (HZB), Avner Rothschild (Technion), Matthew Mayer (EPFL), and Todd Deutsch (NREL). The PECDEMO project will be well-represented within the symposium, with 16 oral presentations and 5 posters contributed by members of the project.

link: [http://www.mrs.org/fall-2016-call-for-papers-ec4/](http://www.mrs.org/fall-2016-call-for-papers-ec4/)

2.3. Conclusions and next steps

The D8.2 goals were accomplished by the organization of two international research conferences.
Appendix: MRS Fall 2016 Symposium EC4 Call for Papers

2016 MRS FALL MEETING & EXHIBIT
November 27 – December 2, 2016 | Boston, Massachusetts

CALL FOR PAPERS
Abstract Deadline: June 16, 2016
REMINDER: In fairness to all potential authors, late abstracts will not be accepted.
www.mrs.org/fall2016

Symposium EC4: Materials, Devices and Systems for Sustainable Conversion of Solar Energy to Fuels

While solar energy will undoubtedly play a dominant role in a sustainable future, the conventional photovoltaic approach of converting sunlight to electrical power faces limitations due to the diurnal and diffuse nature of sunlight. The conversion of solar energy to chemical fuels seeks to address the challenges of storage and distribution of this resource. By storing the energy in chemical bonds, stable fuels in the liquid or gaseous phase can be produced and utilized in widespread applications.

Numerous approaches to solar-to-fuels conversion have been postulated, each with the goals of efficient and stable energy conversion, ideally utilizing abundant and scalable materials. The main reactions of interest include the electrolysis of water to yield hydrogen fuel and the reduction of carbon dioxide to generate hydrocarbon fuels. This symposium will review the latest advances in solar-to-fuels conversion by photocatalyst, electrolyte, photoelectrochemical, and photovoltaic approaches, and various combinations thereof. It will also include special attention to electrode architectures, device design, and analyses of the feasibility and techno-economic aspects of complete solar-to-fuels conversion systems.

Topics will include:
- Photoelectrochemical water splitting
- Photocatalytic water splitting
- Photoelectrochemical reduction of carbon dioxide and nitrogen
- Solar charging redox flow batteries
- Experimental developments in electrocatalysts for water splitting
- Device design and novel architectures for PEC-PEC tandem cells and artificial leaves
- Integrated systems for solar-to-fuels conversion: modeling, construction, field tests
- Techno-economic and life cycle analyses of integrated systems for solar-to-fuels conversion
- Screening, simulation, and modeling of semiconductors and catalysts for solar-water splitting

Invited speakers include:

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<tr>
<th>Fatwa F. Abdı</th>
<th>Helmholtz Zentrum Berlin, Germany</th>
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<tr>
<td>Joel W. Ager</td>
<td>Lawrence Berkeley National Laboratory, USA</td>
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<td>Harry Awater</td>
<td>California Institute of Technology, USA</td>
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<td>James Barber</td>
<td>Imperial College London, United Kingdom</td>
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<td>Juan Bisquert</td>
<td>Universitat Jaume I, Spain</td>
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<td>Shanne Boeckner</td>
<td>University of Oregon, USA</td>
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<td>Myati Cepasy Torokker</td>
<td>Technion - Israel Institute of Technology, Israel</td>
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<tr>
<td>Ib Chorkendorff</td>
<td>Technical University of Denmark, Denmark</td>
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<td>Hen Dotan</td>
<td>Technion - Israel Institute of Technology, Israel</td>
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<td>Heinz Frei</td>
<td>Lawrence Berkeley National Laboratory, USA</td>
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<tr>
<td>Michael Graetzl</td>
<td>École Polytechnique Fédérale de Lausanne, Switzerland</td>
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<tr>
<td>Thomas Hamann</td>
<td>Michigan State University, USA</td>
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<tr>
<td>Sophia Haussemer</td>
<td>École Polytechnique Fédérale de Lausanne, Switzerland</td>
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| Takashi Hisatomi | University of Tokyo, Japan |
| Wolfram Jaegermann | Technische Universität Darmstadt, Germany |
| Thomas Jaramillo | Stanford University, USA |
| Song Jin | University of Wisconsin, USA |
| Matthew Kanan | Stanford University, USA |
| Yat Li | University of California, Santa Cruz, USA |
| Adelio Mendes | Universidade do Porto, Portugal |
| Thomas J. Meyer | University of North Carolina, USA |
| Eric Miller | US Department of Energy, USA |
| Nathan Neale | National Renewable Energy Laboratory, USA |
| Guido Saracco | Politecnico di Torino, Italy |
| Kevin Sivula | École Polytechnique Fédérale de Lausanne, Switzerland |
| Michael Wasielewski | Northwestern University, USA |

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