

*The 7<sup>th</sup> Chemical Sciences and Society Summit (CS3)*

# Solar Energy & Photonics for a Sustainable Future

*The 7<sup>th</sup> CS3*

***Program***

**Dalian, China**  
**September 5-8, 2017**



# I

## Sub-topics

1

Artificial Photosynthesis and CO<sub>2</sub> Reduction

2

New PV Materials with Abundant Elements

3

Photonic Materials and Photon Upconversion

4

Photofunctional Materials and Structures for Light Manipulation

※ Meeting Room: 1F Peony Room

※ Breakfast & Lunch: 1F restaurant



**Tuesday, September 5, 2017**

**Afternoon**      Arrival and Registration (airport pick-up service for delegates)

**18:30-**            Welcome Reception (1F Peony Room)



Wednesday, September 6, 2017

**07:30-08:30** Breakfast

**08:45-09:00** **Opening Remarks**  
**Chaired by Prof. Zhigang Shuai, Tsinghua University**

Prof. Xi Zhang, Vice-President of Chinese Chemical Society/  
Director of Department of Chemistry, National Natural Science  
Foundation of China

Prof. Yongjun Chen, Executive Deputy Director of Department of  
Chemistry, National Natural Science Foundation of China

### **Session 1** **Artificial Photosynthesis and CO<sub>2</sub> Reduction**

*Each presentation or position statement includes 5 minute discussion*

**09:00-10:20** **Chaired/Organized by Prof. Xi Zhang, Tsinghua University**

09:00-09:35 Keynote Presentation by Prof. Wolfgang Lubitz, Max-Planck-Institut für  
Chemische Energiekonversion

09:35-09:50 Position Statement by Prof. Ryu Abe, Graduate School of Engineering,  
Kyoto University

09:50-10:05 Position Statement by Prof. Andy Cooper, University of Liverpool

10:05-10:20 Position Statement by Prof. Jerry Meyer, University of North Carolina

**10:20-10:45** Coffee Break

**10:45-12:30** **Chaired/Organized by Prof. Kazunari Domen, The University of  
Tokyo**

10:45-11:00	Position Statement by Prof. Wolfram Jaegermann, Technische Universität Darmstadt
11:00-11:15	Position Statement by Prof. Suljo Linic, University of Michigan
11:15-11:30	Position Statement by Prof. Lizhu Wu, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences
11:30-12:30	Additional Position Statements and Discussion
<b>12:30-14:00</b>	Lunch Break

## Session 2 New Photovoltaic Materials with Abundant Elements

*Each presentation or position statement includes 5 minute discussion*

<b>14:00-15:20</b>	<b>Chaired/Organized by Prof. Suljo Linic, University of Michigan</b>
14:00-14:35	Keynote Presentation by Prof. Jenny Nelson, Imperial College London
14:35-14:50	Position Statement by Prof. Vivian Ferry, University of Minnesota
14:50-15:05	Position Statement by Prof. Fei Huang, South China University of Technology
15:05-15:20	Position Statement by Prof. Bernd Rech, Helmholtz-Zentrum Berlin für Materialien und Energie Institute Silicon Photovoltaics
<b>15:20-15:50</b>	Coffee Break
<b>15:50-17:35</b>	<b>Chaired/Organized by Prof. Martin Heeney, Imperial College London</b>
15:50-16:05	Position Statement by Prof. Hiroko Yamada, Nara Institute of Science and Technology

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16:05-16:20	Position Statement by Prof. Jianhui Hou, Institute of Chemistry, Chinese Academy of Sciences
16:20-16:35	Position Statement by Prof. Susanne Siebentritt, University of Luxembourg
16:35-17:35	Additional Position Statements and Discussion
<b>18:20</b>	Departure from the hotel for dinner (Lobby)
<b>19:00-21:00</b>	Dinner

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## Thursday, September 7, 2017

**07:30-08:30** Breakfast

### Session 3 Photonic Materials and Photon Upconversion

*Each presentation or position statement includes 5 minute discussion*

**09:00-10:05** **Chaired/Organized by Prof. Ferdi Schueth, Max-Planck-Institut für Kohlenforschung**

09:00-09:35 Keynote Presentation by Prof. Harry Atwater, California Institute of Technology (CalTech)

09:35-09:50 Position Statement by Prof. Yongsheng Zhao, Institute of Chemistry, Chinese Academy of Sciences

09:50-10:05 Position Statement by Prof. Nobuhiro Yanai, Kyushu University

**10:05-10:35** Coffee Break

**10:35-11:50**      **Chaired/Organized by Prof. Lizhu Wu, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences**

10:35-10:50      Position Statement by Prof. Hugo Bronstein, University College London

10:50-11:50      Additional Position Statements and Discussion

**12:00-14:00**      Lunch Break

## **Session 4**      **Photofunctional Materials and Structures for Light Manipulation**

*Each presentation or position statement includes 5 minute discussion*

**14:00-15:20**      **Chaired/Organized by Prof. Susanne Siebentritt, University of Luxembourg**

14:00-14:35      Keynote Presentation by Prof. Shu Seki, Kyoto University

14:35-14:50      Position Statement by Prof. Julia Weinstein, University of Sheffield

14:50-15:05      Position Statement by Prof. Gordana Dukovic, University of Colorado Boulder

15:05-15:20      Position Statement by Prof. Gang Liu, Institute of Metal Research, Chinese Academy of Sciences

**15:20-15:50**      Coffee Break

**15:50-17:20**      **Chaired/Organized by Prof. Vivian Ferry, University of Minnesota**

15:50-16:05      Position Statement by Prof. Ferdi Schueth, Max-Planck-Institut für Kohlenforschung

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16:05-16:20 Position Statement by Prof. Fengtao Fan, Dalian Institute of Chemical Physics, Chinese Academy of Sciences

16:20-17:20 Additional Position Statements and Discussion

**17:30-19:00 CS3 Management Meeting**  
✳ Only Representatives of Chemical Societies and Funding Agencies Need to Participate

19:00-21:00 Barbecue Dinner (Beach Restaurant within Walk Distance)



## Friday, September 8, 2017

07:30-08:30 Breakfast

09:00-09:30 **Brain Storming, Chaired/Organized by Prof. Can Li, Dalian Institute of Chemical Physics, Chinese Academy of Sciences**

09:30-10:30 **Round-Table Discussion for Subtopic Recommendations**  
(Four Parallel Sessions; 2-3 recommendations will be made by each group; Participants are free to join any group)

Organizer of Sub-topic 1: Prof. Kazunari Domen  
Organizer of Sub-topic 2: Prof. Martin Heeney  
Organizer of Sub-topic 3: Prof. Harry Atwater  
Organizer of Sub-topic 4: Prof. Ferdi Schueth

10:30-11:00 Coffee Break

11:00-11:20 **Conclusion by Session Organizers (5 minutes each)**

Organizer of Sub-topic 1: Prof. Kazunari Domen  
Organizer of Sub-topic 2: Prof. Martin Heeney  
Organizer of Sub-topic 3: Prof. Harry Atwater  
Organizer of Sub-topic 4: Prof. Ferdi Schueth

## II

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**11:20-12:00** Draft Discussion for Executive Summary (contents outline),  
Chaired by Prof. Can Li, Dalian Institute of Chemical Physics,  
Chinese Academy of Sciences

**12:00-14:00** Lunch Break

**15:00-17:30** Visit to the Dalian National Laboratory For Clean Energy, Dalian  
Institute of Chemical Physics (DICP), Chinese Academy of Sciences.

**18:30-20:30** DICP Dinner



**Saturday, September 9, 2017**

**All day** Departure (transportation to airport to be arranged)



**China**

Can Li (Chair)	Dalian Institute of Chemical Physics, Chinese Academy of Sciences
Jianhui Hou	Institute of Chemistry, Chinese Academy of Sciences
Lizhu Wu	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences
Gang Liu	Institute of Metal Research, Chinese Academy of Sciences
Fei Huang	South China University of Technology
Yongsheng Zhao	Institute of Chemistry, Chinese Academy of Sciences
Fengtao Fan	Dalian Institute of Chemical Physics, Chinese Academy of Sciences
Xi Zhang	National Nature Science Foundation of China/ Chinese Chemical Society/Tsinghua University
Yongjun Chen	National Nature Science Foundation of China
Zhigang Shuai	Chinese Chemical Society/Tsinghua University
Suping Zheng	Chinese Chemical Society

**Germany**

Ferdi Schueth (Co-chair)	Max-Planck-Institut für Kohlenforschung
Wolfgang Lubitz	Max-Planck-Institut für Chemische Energiekonversion
Wolfram Jaegermann	Technische Universität Darmstadt
Susanne Siebentritt	University of Luxembourg
Bernd Rech	Helmholtz-Zentrum Berlin für Materialien und Energie Institute Silicon Photovoltaics
Markus Behnke	German Research Foundation (DFG)
Hans-Georg Weinig	The German Chemical Society (GDCh)

**Japan**

Kazunari Domen (Co-chair)	The University of Tokyo
Ryu Abe	Graduate School of Engineering, Kyoto University
Hiroko Yamada	Nara Institute of Science and Technology
Nobuhiro Yanai	Kyushu University
Shu Seki	Kyoto University
Yoshinori Nishikitani	Waseda University
Tetsuya Ito	Japan Science and Technology Agency (JST)
Mitsuo Sawamoto	The Chemical Society of Japan/Chubu University

**UK**

Martin Heeney (Co-chair)	Imperial College London
Andy Cooper	University of Liverpool
Jenny Nelson	Imperial College London
Hugo Bronstein	University College London
Julia Weinstein	University of Sheffield
Sarah Thomas	The Royal Society of Chemistry

**USA**

Suljo Linic (Co-chair)	University of Michigan
Jerry Meyer	University of North Carolina
Vivian Ferry	University of Minnesota
Harry Atwater	California Institute of Technology (CalTech)
Gordana Dukovic	University of Colorado Boulder
Lin He	National Science Foundation
Christopher LaPrade	The American Chemical Society

**Other Participants**

Mark Peplow	Science Journalist, UK
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