2nd International Symposium on Solar Fuels and Solar Cells

August 28-31, 2010, Conference Center of DICP, Dalian, China

Scientific Program

(PL: Plenary Lecture, 40min; IL: Invited Lecture, 30min; OP: Oral Presentation, 20min)

Date	Time	Program
08/28	13:00-18:00	**Registration**
	18:00-20:00	**Reception**
08/29 Morning Session	08:00-08:30	**Opening Ceremony**
	Session 1: Challenges and Opportunities for Solar Energy Conversion **Chairs: Haruo Inoue Baolian Su**	
	08:30-09:10 **(PL1)**	**James Barber,** *Imperial College London, UK* Can We Build an Artificial Leaf for Solar Fuel Production?
	09:10-9:40 **(IL1)**	**Can Li,** *Dalian Institute of Chemical Physics, CAS, China* Challenges and Opportunities for Photocatalytic Production of Solar Fuels
	9:40-10:00	**Photos & Coffee Break**
	10:00-10:30 **(IL2)**	**Stenbjörn Styring,** *Uppsala University, Sweden* Molecular Science for Solar Fuels−Hydrogen Form Solar Energy and Water
	10:30-11:00 **(IL3)**	**Leif Hammarström,** *Uppsala University, Sweden* Controlling Coupled Electron Transfers in Artificial Photosynthesis for Solar Fuel Production
	11:00-11:30 **(IL4)**	**Shunichi Fukuzumi** , *Osaka University, Japan* Bioinspired Artificial Photosynthesis
	11:30-11:50 **(OP1)**	**Peng Kang ,** *Stanford University, USA* Probing the Active Oxidant in Tyrosinase Enzyme: A Mechanistic Study from Synthetic Models
	11:50-13:30	**Lunch & Noon Break**

08/29 Afternoon Session	**Session 2: CO_2 Reduction** **Chairs: Leif Hammarström Licheng Sun**	
	13:30-14:00 **(IL5)**	**Osamu Ishitani,** *Tokyo Institute of Technology, Japan* Architecture of Efficient Photocatalysts for CO_2 Reduction Using Transition Metal Complexes
	14:00-14:30 **(IL6)**	**Etsuko Fujita,** *Brookhaven National Laboratory, USA* Redox Catalysis for Solar Fuel Generation
	14:30-15:00 **(IL7)**	**Baolian Su,** *The University of Namur, Belgium* Leaf-like Materials Capable of Energy Conversion and CO_2 Assimilation
	15:00-15:30 **(IL8)**	**Yong Zhou,** *Nanjing University, China* Artificial Photosynthesis: Visible Light-Driven Conversion of CO_2 into Renewable Hydrocarbon Fuels over Structured Nanomaterials
	15:30-15:50 **(OP2)**	**Jian Yuan,** *Shanghai Jiao Tong University, China* Pt-CdS/TiO_2 Nanotube Catalyst for Photocatalytic CO_2 Conversion under Visible Light Irradiation
	15:50-16:10	**Coffee Break**
	Session 3: Water Oxidation **Chairs: Etsuko Fujita Jae Sung Lee**	
	16:10-16:40 **(IL9)**	**Licheng Sun,** *Dalian University of Technology, China & Royal Institute of Technology, Sweden* Highly Efficient Molecular Catalysts for Visible Light Driven Water Oxidation—Towards Solar Energy Conversion into Fuels
	16:40-17:10 **(IL10)**	**Haruo Inoue,** *Tokyo Metropolitan University, Japan* How Can We Get through the Bottle-Neck of Water Oxidation in Artificial Photosynthesis: Another Route of Two-Electron Conversion Process
	17:10-17:40 **(IL11)**	**Gary W. Brudvig,** *Yale University, USA* Development of High Potential Photoanodes for Light Induced Water Oxidation
	18:00-20:00	**Dinner**

08/30 Morning Session	**Session 4: Water Splitting** **Chairs: Gary W. Brudvig Akihiko Kudo**	
	08:00-08:30 **(IL12)**	**Jae Sung Lee,** ***Pohang*** *University of Science and Technology, Korea* Heterojunction Semiconductor Photocatalysts for Efficient Visible Light Water Splitting
	08:30-09:00 **(IL13)**	**Ryu Abe,** *Hokkaido University, Japan* A Two-Step Photoexcitation System for Photocatalytic Water Splitting into H_2 and O_2 under Visible Light Irradiation
	09:00-09:30 **(IL14)**	**Yoshihisa Sakata,** *Yamaguchi University, Japan* Achievement of Highly Photocatalytic Performance on the Overall Splitting of H_2O over a Modified Ga_2O_3 Photocatalyst
	09:30-09:50 **(OP3)**	**Gang Liu,** *Institute of Metal Research, CAS, China* Modulating Intrinsic/Hetero-Atom Structures for Efficient Photo-Water Splitting
	09:50-10:10	**Coffee Break**
	Session 5: Photocatalytic Production of Hydrogen **Chairs: Yoshihisa Sakata Lianzhou Wang**	
	10:10-10:40 **(IL15)**	**Akihiko Kudo,** *Tokyo University of Science, Japan* Development of Photocatalysts for Solar Hydrogen Production
	10:40-11:10 **(IL16)**	**Ken Sakai,** *Kyushu University, Japan* Photochemical Hydrogen Evolution from Water Catalyzed by Platinum(II)-Based Molecular Catalysts
	11:10-11:40 **(IL17)**	**Lizhu Wu,** *Technical Institute of Physics and Chemistry, CAS, China* Photocatalytic Hydrogen Evolution from [FeFe] Hydrogenases Mimics
	11:40-13:30	**Lunch & Noon Break**

08/30 Afternoon Session	**Session 6: Development of Photocatalysts** **Chairs: Ken Sakai Lizhu Wu**	
	13:30-14:00 **(IL18)**	**Lianzhou Wang,** *University of Queensland, Australia* Band-Gap Engineering and Structural Modifications of Layered Transition Metal Oxides Enabling Visible Light Photocatalysis
	14:00-14:30 **(IL19)**	**Gongxuan Lu,** *Lanzhou Institute of Chemical Physics, CAS, China* Hydrogen Generation *via* Photosensitization of Alternate Bi-Crystalline TiO_2
	14:30-14:50 **(OP4)**	**Weixin Huang,** *University of Science and Technology of China, China* Bifunctional TiO_2 Catalysts and Their Photocatalytic Activity
	14:50-15:10 **(OP5)**	**Jianghong Zhao,** *Institute of Coal Chemistry, CAS, China* Photocatalytic Hydrogen Production over Pt/TiO_2 Nanoparticles: Selectively Converting Sacrificial Ethanol to Valuable 2,3-Butanediol by Modulating TiO_2 Structures
	15:10-15:30 **(OP6)**	**Yanping Sun,** *CSIRO Energy Technology, Australia* The Development of Novel Technology for Production of Solar Fuels
	15:30-18:30 **（P01-P22）**	**Poster Section (Lobby of the Conference Center of DICP)**
	18:30-20:30	**Banquet**

08/31 Morning Session	**Session 8A: Solar Cells** **Chairs: Masato Takeuchi Junwu Chen**	
	08:00-08:30 **(IL20)**	**Kazuhito Hashimoto,** *The University of Tokyo, Japan* Energy Conversion Using Natural Microbial Community: Microbial Fuel Cell and Microbial Solar Cell
	08:30-08:50 **(OP7)**	**Tatas H.P. Brotosudarmo,** *University of Glasgow, UK* Bio-Hybrid Solar Cells and Transducers: Learning from Photosynthesis
	08:50-09:20 **(IL21)**	**Yongfang Li,** *Institute of Chemistry, CAS, China* Conjugated Polymer and Fullerene Derivative Photovoltaic Materials for Polymer Solar Cells
	09:20-09:50 **(IL22)**	**Donghang Yan,** *Changchun Institute of Applied Chemistry, CAS, China* Organic photovoltaic solar cells using crystalline films
	09:50-10:10	**Coffee Break**
	Session 8B: Solar Cells **Chairs: Kazuhito Hashimoto Donghang Yan**	
	10:10-10:40 **(IL23)**	**Masato Takeuchi,** *Osaka Prefecture University, Japan* Development of Highly Functional TiO_2 Thin Film Materials by a RF Magnetron Sputtering Method and their Applications in the Constructions of Photo-induced Fuel Cells and Dye-Sensitizer-free Thin Film Solar Cells
	10:40-11:10 **(IL24)**	**Junwu Chen,** *South China University of Technology, China* Polymeric Solar Cells with Fullerene Derivatives and Nanocrystals as Electron Acceptors
	11:10-11:40 **(IL25)**	**Peng Wang,** *Changchun Institute of Applied Chemistry, CAS, China* Metal-Free Organic Dye in High-Performance Dye-Sensitized Solar Cells

End of Program

Poster Session

Time: 15:30-18:30, August 30th, 2010

Place: Lobby of the Conference Center of DICP

Poster Size: 0.9(W)×1.2(L) m

Poster Number	Author, Affiliation and Title of the Poster
P01	**Linlong Deng, Sulan Xie, Suyuan Xie, Rongbin Huang, and Lansun Zheng** *Xiamen University, China* Synthesis, Characterization and Photovoltaic Properties of Tetramethoxy-Iminofullerene: An Analogue of PCBM
P02	**Shunsuke Sato, Shu Saeki, Takeshi Morikawa, Tsutomu Kajino*, and Tomoyoshi Motohiro** *Toyota Central Research and Development Laboratories, Inc. Japan* Visible Light Induced Selective CO_2 Reduction Utilizing a Ru-Complex Electrocatalyst Linked with A P-Type N-Doped Ta_2O_5 Semiconductor
P03	**Simelys Hernandez, Stefano Bianco, Angelica Chiodoni, Marzia Quaglio, and Candido F. Pirri** *CSHR, Italian Institute of Technology, Italy* IIT Centre for Space Human Robotics: Nanotechnologies and New Materials for Energy Production and Storage
P04	**Xiaoxia Yan, Chaoqing Lu*, Aniruddh Mukherji, Gang Liu, Lianzhou Wang*, and Gaoqing Lu(Max)** *The University of Queensland, Australia* Synthesis of N-Doped Layered Tantalate and Niobate as Efficient Visible Light Active Photocatalysts
P05	**Xueqiang Li, Mei Wang*, Pan Zhang, Jingfeng Dong, and Licheng Sun*** *Dalian University of Technology, China* Photocatalytic Water Reduction to Molecular Hydrogen Catalyzed by Noble-Metal-Free Homogeneous Systems Containing Xanthene Dyes and Bioinspired $[Fe_2S_2]$ Models
P06	**Jingfeng Dong, Mei Wang* , Pan Zhang, Xueqiang Li, and Licheng Sun*** *Dalian University of Technology, China* Highly Efficient Noble-Metal-Free Molecular Catalyst Systems Composed of Rose Bengal and Cobalt Bipyridyl Complex for Photoinduced Hydrogen Production from Water

P07	**Caixia Li, Mei Wang*, Pan Zhang, Xueqiang Li, and Licheng Sun*** *Dalian University of Technology, China* Molecular Devices Comprising a Porphyrin Chromophore and a Pt(II)-Based Catalyst for Light-Driven Hydrogen Evolution
P08	**Fei Li, Yi Jiang, and Licheng Sun** *Dalian University of Technology, China* Trinuclear Ruthenium Supramolecue as Photocatalytic Assembly for Visible Light-Driven Water Oxidation
P09	**Lei Wang, Jianhui Liu*, Lele Duan, Fei Li, and Licheng Sun*** *Dalian University of Technology, China* New Ruthenium Complexes as High-Efficient Catalyst for Water Oxidation
P10	**Pan Zhang, Mei Wang*, Caixia Li, Jingxi Pan, Xueqiang Li, and Licheng Sun*** *Dalian University of Technology, China* Noble-Metal-Free Molecular Devices Containing Porphyrin and Cobaloxime Units for Photoinduced Hydrogen Production from Water
P11	**Jiazang Chen, Rongrong Jia, Jianfeng Zheng, Jianghong Zhao, and Zhenping Zhu*** *Institute of Coal Chemistry, CAS, China* N-Doped Carbon Nanostructure Counter Electrodes for Highly Efficient Dye-Sensitized Solar Cells
P12	**Jian Wang, Jinhong Yan, Jianfeng Zheng, Jianghong Zhao, and Zhenping Zhu*** *Institute of Coal Chemistry, CAS, China* MS (M=Ni,Co,Cu) Used as Co-Catalysts of CdS-Based Photocatalysts for Hydrogen Production from Water
P13	**Jiazang Chen, Jianfeng Zheng, Jianghong Zhao, and Zhenping Zhu*** *Institute of Coal Chemistry, CAS, China* Titania Nanoribbon-Enhanced Charge Collection of Titania Nanoparticles in Dye-Sensitized Solar Cells
P14	**Feng Lin, Yongna Zhang, Lu Wang, Yuliang Zhang, Dong'e Wang, Jinhui Yang, Boyu Zhang, Min Yang, Zongxuan Jiang, and Can Li*** *Dalian Institute of Chemical Physics, CAS, China* Photocatalytic Oxidation of Sulfur-Containing Organic Molecules with O_2 on Pt-RuO_2/TiO_2
P15	**Jinhui Yang, Hongjian Yan, Jingying Shi, Hongxian Han, and Can Li*** *Dalian Institute of Chemical Physics, CAS, China* The Effect of Cocatalysts on Photocatalytic Hydrogen Production over CdS Synthesized by Hydrothermal Method

P16	**Yi Ma, Qian Xu , and Can Li*** *Dalian Institute of Chemical Physics, CAS, China* Photocatalytic H_2 Production Activity of Phase Controlled TiO_2
P17	**Wei Zhang, Panwang Zhou, Jianyong Liu, Keli Han*, Guozhong He, Jianhui Liu*, Cheng He, Rong Zhang, and Licheng Sun*** *Dalian Institute of Chemical Physics, CAS, China* A Functional Model for the Electron Donor Side of Photosystem II and Photo-Induced Proton-Coupled Electron Transfer Study
P18	**Qinchao Sun, Jianyong Liu, Panwang Zhou, Peng song, Songqiu Yang, and Keli Han*** *Dalian Institute of Chemical Physics, CAS, China* A Study of the Photoisomerization of Two Types of π-Conjugated Dye Using Transient Absorption Spectroscopy and Quantum Chemical Calculation
P19	**Songqiu Yang, Jianyong Liu, Panwang Zhou, Peng Song, Keli Han*, and Guozhong He** *Dalian Institute of Chemical Physics, CAS, China* Efficient Electron Transfer from Antenna Group to TiO_2 Advance the Performance of Dye-Sensitized Solar Cell
P20	**Jindou Huang, Shuhao Wen, Keli Han*, and Guozhong He** *Dalian Institute of Chemical Physics, CAS, China* First-Principles Studies of Photoelectrochemical Activity of $Zn_xCd_{1-x}S$ and $Zn_xCd_{1-x}Se_xS_{1-x}$ Solid Solution Photocatalyst
P21	**Ping Niu, Gang Liu*, Gaoqing (Max) Lu, and Huiming Cheng** *Institute of Metal Research, CAS, China* Nitrogen Vacancies Enhancing Photocatalytic Activity of Graphitic Carbon Nitrides
P22	**Alastair T. Gardiner, Tatas HP Brotosudarmo, June Southall, Mamoru Nango, Leroy Cronin, and Richard J. Cogdell** *University of Glasgow, Scotland* Learning from Biology: Understanding the Dependence of Energy Transfer on Supramolecular Architecture to Aid Construction of an Artificial Solar Cell