



## 分1 绿色化学科学与工程国际高端研讨会2011

### International High-end Forum on Green Chemical Science & Engineering 2011

**Organizer:** Chemical Industry and Engineering Society of China

**Co-organizer:** Tianjin University, Nankai University

**Chairman:** **Cao Xianghong** (President of Chemical Industry and Engineering Society of China, Director of Division of Chemical, Metallurgical and Materials Engineering, Academician of Chinese Academy of Engineering, Foreign Member of the National Academy of Engineering, China)

**Chairman of Academic Committee:**

**Gan Yong** (Vice-president of Chinese Academy of Engineering, Academician of Chinese Academy of Engineering, China)

**The Members :** **Alan J. Heeger K.Barry Sharpless Hartmut Michel Stephen Z.Cheng W.S.Winston Ho Ronald G.Larson Francois Mathey Teruo Okano Julian R.H. Ross Cao yong Li Zhengming Shang Yongfeng Wang Jingkang Yu Guozong Zhang Chunting Zhou Qilin Zou jing**

## PROGRAM

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### Sep. 21

**15:30-17:00 Poster Session**

**18:00-20:00 Welcome Reception Chinese Restaurant**

### Sep. 22 Site: No.1 Conference Room, Tianjin Grand View Hotel

**08:30-09:00 Opening Ceremony**

**Opening Address**

**09:00-09:30 Photo Taken and Tea Break**

**09:30-11:45 Chair:**

**Cao Xianghong** (President of Chemical Industry and Engineering Society of China, Director of Division of Chemical, Metallurgical and Materials Engineering, Academician of Chinese Academy of Engineering, Foreign Member of the National Academy of Engineering, China)

**Presentations** (Each Report: 40 mins, Questions: 5 mins)

1. Charge Recombination and Transport Dynamics in Organic Solar Cells  
**Alan J. Heeger** (Nobel Prize Laureate 2000, University of California Santa Barbara, USA)

2. Naturally Green: Click Chemistry Works Best with Water

**K.Barry Sharpless** (Nobel Prize Laureate 2001, Scripps Research Institute, USA)



3. Membrane Proteins - Importance, Functions, Crystallization, and Conclusions on the Usage of Biofuels

**Hartmut Michel** (Nobel Prize Laureate 1988, Max Planck Institute of Biophysics, Germany)

**12:00-13:00 Lunch Western Restaurant, Tianjin Grand View Hotel**

### Technical Session 1

**Theme Design/Synthesis of Functional Molecules and Green Synthetic Chemistry**

**Sep. 22 Site: No.1 Conference Room, Tianjin Grand View Hotel**

**13:30-15:15 Chair:**

**Yuan Xigang** (Tianjin University, China)

**Ronald G. Larson** (Academician of National of Engineering, University of Michigan, USA)

**Presentations** (Each Report: 30mins, Questions: 5mins)

1. Giant Molecules Based on Nano-atoms: Size Amphification, Function Diversification, and Self-Assembly Manipulation

**Stephen Z. Cheng** (Academician of National Academy of Engineering, University of Akron, USA)

2. Molecular Modeling of Polymer Rheology: an Ultra-Sensitive Characterization Tool

**Ronald G. Larson** (Academician of National of Engineering, University of Michigan, USA)

3. Last Developments in Phosphinine Chemistry

**Francois Mathey** (Academician of Franch Academy of Engineering, Nanyang Technological University, Singapore)

**15:15-15:30 Tea Break**

**15:30-17:55 Presentations** (Each Report: 20-30 mins, Questions: 5 mins)

4. The New World of Organic Chemistry Using Water as Solvent

**Shu Kobayashi** (University of Tokyo, Japan)

5. Designing of a Chemistry Beyond Chlorine

**Pietro Tundo** (University Venice, Italy)

6. The Use of Biocatalysis for the Production of Flavours and Fragrances

**Jiang Biao** (Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, China)



7. One-pot Multistep Strategy for the Asymmetric Construction of Chiral Fluorine-Containing Molecules

**Ma Junan** (Tianjin University, China)

8. General Strategy Toward Bridged Skeletons in Natural Products

**Wang Zhongwen** (Nankai University, China)

**18:00-19:00 Dinner Western Restaurant, Tianjin Grand View Hotel**

**Theme New Materials, Renewable Energy and Environmental Technology**

**Sep. 23 Site: No.1 Conference Room, Tianjin Grand View Hotel**

**08:30-10:15 Chair:**

**Chen Zhijian** (Tianjin University, China)

**Sohrab Rohani** (University of Western Ontario, Canada)

**Presentations** (Each Report: 30 mins, Questions: 5 mins)

1. Fabrication, Modification and Environmental Applications of TiO<sub>2</sub> Nanoparticles and Nanotube Arrays

**Sohrab Rohani** (University of Western Ontario, Canada)

2. Innovations in Coating Technologies Using Laser Sustained Plasma

**Judith A. Todd** (Pennsylvania State University, USA)

3. Preparation and Characterization of Metal Silicides Used for Semiconductor Integrated Circuits

**Tu Hailing** (Academician of Chinese Academy of Engineering, General Research Institute for Nonferrous Metals, China)

**10:15-10:30 Tea Break**

**10:30-12:10 Presentations** (Each Report: 20 mins, Questions: 5 mins)

4. Study on Mg Based Energy Materials

**Ding Wenjiang** (Shanghai Jiao Tong University, China)

5. CdZnTe Crystal Growth and Its Application for Radiation Detectors

**Jie Wanqi** (Cheung Kong Distinguished Professor, Northwest Polytechnical University, China)

6. Synthesis and Properties of Liquid Crystalline Monomers and Polymers Containing Tartaric Acid Derivative

**Zhang Baoyan** (Northeastern University, China)

7. An Effective Red Fluorescent Marker for Live-cell DNA Imaging and Quantification

**Peng Xiaojun** (Cheung Kong Distinguished Professor, Dalian University of Technology, China)



**12:10-13:10 Lunch Western Restaurant, Tianjin Grand View Hotel**

**Theme Design/Synthesis of Functional Molecules and Green Synthetic Chemistry**

**Sep. 23 Site: No.1 Conference Room, Tianjin Grand View Hotel**

**13:30-16:05 Chair:**

**Feng Yakai** (Tianjin University, China)

**Andreas Lendlein** (Institute of Polymer Research, Helmholtz-Zentrum Geesthacht, Germany)

**Presentations** (Each Report: 20-30 mins, Questions: 5 mins)

1. Under Pressure and in Hot Water: Converting Algal Biomass to Biofuels  
**Philip E. Savage** (University of Michigan, USA)

2. Green Chemistry-A Path Towards Future Sustainability  
**Chao-Jun Li** (McGill University, Canada)

3. Highly Efficient Asymmetric Catalytic Hydrogenation  
**Zhou Qilin** (Academician of Chinese Academy of Sciences, Nankai University, China)

4. Can Green Fuel Chemistry Have a Future?  
**Liu Changjun** (Cheung Kong Distinguished Professor, Tianjin University, China)

5. CO<sub>2</sub> Chemistry: Catalytic Transformation of Carbon Dioxide into Fuels and Chemicals Based on Its Activation  
**He Liangnian** (Nankai University, China)

## **Technical Session 2**

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**Theme Catalysis Science and Engineering**

**Sep. 22 Site: No.2 Conference Room, Tianjin Grand View Hotel**

**13:30-15:15 Chair:**

**Li Yongdan** (Tianjin University, China)

**Julian RH Ross** (Member of the Charles Parsons Initiative and Royal Irish Academy, University of Limerick, Ireland)

**Presentations** (Each Report: 30 mins, Questions: 5 mins)

1. Green Catalysis—Some Examples of the Applications of Catalysis in Improving Process Efficiency and Reducing Environmental Impact  
**Julian RH Ross** (Member of the Charles Parsons Initiative and Royal Irish Academy, University of Limerick, Ireland)

2. On the Basic Science Behind R&D of Advanced Rechargeable Batteries  
**Doron Aurbach** (Bar-Ilan University, Israel)



3. Catalytic Biomass Conversion to Fuels and Value-Added Chemicals

**Johannes Schwank** (University of Michigan, USA)

**15:15-15:30 Tea Break**

**15:30-17:55 Presentations** (Each Report: 20-30 mins, Questions: 5 mins)

4. Design and Synthesis of Nanostructured Materials for Syngas Conversion

**Levi T. Thompson** (University of Michigan, USA)

5. Microwaves, Materials, Solvents and Catalysis: Green Chemistry at York

**Mark Gronnow** (University of York, UK)

6. Transition Metal-Catalyzed Oxidation of Unsaturated Hydrocarbons with Molecular Oxygen

**Jiang Huanfeng** (South China University of Technology, China)

7. Mn-based Nanooxides as Catalysts for Electrochemical Oxygen Reduction

**Chen Jun** (Cheung Kong Distinguished Professor, Nankai University, China)

8. A High Efficiency Energy Conversion System Based on Methane Decomposition Reaction and Two Fuel Cells

**Li Yongdan** (Cheung Kong Distinguished Professor, Tianjin University, China)

**18:00-19:00 Dinner Western Restaurant, Tianjin Grand View Hotel**

**Theme Green Chemical Engineering and Process Intensification and Process Systems Engineering**

**Sep. 23 Site: No.2 Conference Room, Tianjin Grand View Hotel**

**08:30-10:15 Chair:**

**Liu Changjun** (Cheung Kong Distinguished Professor, Tianjin University, China)

**Philip E. Savage** (University of Michigan, USA)

**Presentations** (Each Report: 30 mins, Questions: 5 mins)

1. Strategies in Designing Innovative Drug Delivery Systems

**Victor C. Yang** (Tianjin Medical University, China, University of Michigan, USA)

2. Three-dimensional Nonlinear Optical Endomicroscopy Observation System for Deep Biological Tissues

**Zhao Liancheng** (Academician of Chinese Academy of Engineering, Herbin Institute of Technology, China)

3. Inherently Safer Design: A New Trend for Design Towards Sustainability in Chemical Engineering

**Chen Bingzhen** (Academician of Chinese Academy of Engineering, Tsinghua University, China)



**10:15-10:30 Tea Break**

**10:30-12:10 Presentations** (Each Report: 20 mins, Questions: 5 mins)

4. Lignocellulose Modified Polyurethane Micropowder Preparation Technique and Industrialization

**Zhang Jianchun** (Institute of Logistic Equipment in China People's Liberation Army, China)

5. A Modified ACHP System for Water and Energy Saving in Natural Draft Cooling Tower

**Zhu Jiahua** (Sichuan University, China)

6. Nanostructured Semiconductors: Preparation via Mircoreaction and Application in Hybrid Solar Cell

**Luan Weiling** (East China University of Science and Technology, China)

7. Rational Design of Catalyst for Bio-ethanol Steam Reforming

**Gong Jinlong** (Tianjin University, China)

**12:10-13:10 Lunch Western restaurant, Tianjin Grand View Hotel**

**Theme Modern Green Technologies for Refinement, Separation and Purification**

**Sep. 23 Site: No.2 Conference Room, Tianjin Grand View Hotel**

**13:30-16:10 Chair:**

**Huang Yaodong** (Tianjin University, China)

**Chang Ji Young** (Seoul National University, Korea)

**Presentations** (Each Report:20- 30 mins, Questions: 5 mins)

1. Membrane Science and Technology: CO<sub>2</sub> Separation and Water Purification

**W. S. Winston Ho** (Academician of National Academy of Engineering, Ohio State University, USA)

2. Green Chemistry and Green Engineering in Chinese Isocyanate Industry

**Ding Jiansheng** (Yantai Wanghua Polyurethanes Co., Ltd., China)

3. Systematic Engineering Optimization of Phosphate Processing

**He Haoming** (Wengfu (Group) Co., Ltd., China)

4. Going Green:The Role of Process Analytical Technology(PAT) Green Chemistry

**Liu Huiming** (Mettler Toledo Company, Switzerland)

5. Performance Improvement of Ultrafiltration Membrane Using Well-dispersed PANI-PVP Nanorods as The Additive

**Wang Zhi** (Tianjin University, China)



6. Study of Particle Process and Polymorphism Studies

**Wang Jingtao** (Tianjin University, China)

**Technical Session 3**

**Theme Modern Pharmaceuticals and Green Pesticides**

**Sep. 22 Site: No.388 Conference Room, Tianjin Grand View Hotel**

**13:30-15:15 Chair:**

**Sun Yan** (Cheung Kong Distinguished Professor, Tianjin University, China)

**Teruo Okano** (Tokyo Women's Medical University, Japan)

**Presentations** (Each Report: 30 mins, Questions: 5 mins)

1. Will Biotechnology Replace Chemistry in Crop Protection and Food Production?

**Leonard G. Copping** (Pest Management Science, UK)

2. Intelligent Surfaces for Cell Sheet Tissue Engineering

**Teruo Okano** (Tokyo Women's Medical University, Japan)

3. Effects of CPA Loading and Removal Protocols on MNC Vitrification, J of Biomedical Engineering

**Cui Zhanfeng** (Oxford University, UK)

**15:15-15:30 Tea Break**

**15:30-17:55 Presentations** (Each Report: 20-30 mins, Questions: 5 mins)

4. Stereoselective Construction of Quaternary Carbon-Containing Drug and Natural Product Molecules via the Semipinacol Rearrangement Strategy

**Tu Yongqiang** (Academician of Chinese Academy of Sciences University, China)

5. Stabilized Metallic Nanoparticle Catalysts and Their Applications in High-temperature Catalytic Reaction

**Yang Yanhui** (Nanyang Technological University, Singapore, China)

6. Green Pesticides and Process of Preparation

**Liu Changling** (Shenyang Research Institute of Chemical Industry, China)

7. Miniaturization of Biomedical Assays Could Make Them Greener

**Jiang Xingyu** (Research Fellow, National Center for Nanoscience and Technology, China)

8. Approaches to High-Performance Protein Refolding

**Sun Yan** (Cheung Kong Distinguished Professor, Tianjin University, China)



**18:00-19:00 Dinner Western Restaurant, Tianjin Grand View Hotel**

**Theme New Materials, Renewable Energy and Environmental Technology**

**Sep. 23 Site: No.388 Conference Room, Tianjin Grand View Hotel**

**08:30-10:15 Chair:**

**Shi Linqi** (Nankai University, China)

**Akira Harada** (Osaka University, Japan)

**Presentations** (Each Report: 30 mins, Questions: 5 mins)

1. Shape-memory Polymers Based on Biodegradable Polymers

**Andreas Lendlein** (Institute of Polymer Research, Helmholtz-Zentrum Geesthacht, Germany)

2. Cyclodextrin-based Supramolecular Architectures, Dynamics, and Functions

**Akira Harada** (Osaka University, Japan)

3. Porous Covalent Organic Frameworks for Molecular Recognition and Storage

**Chang Ji Young** (Seoul National University, Korea)

**10:15-10:30 Tea Break**

**10:30-12:10 Presentations** (Each Report: 20 mins, Questions: 5 mins)

4. DNA-Regulated Synthesis of Catalytically Active Pd Nanoparticles

**Li Wei** (Tianjin University, China)

5. Polymeric Micelles with Tunable Channels for Drug Delivery

**Shi Linqi** (Nankai University, China)

6. A Promising Polymer for Disposable Plastic Products

**Wang Yuzhong** (Sichuan University, China)

7. Metal-Organic Frameworks for Capillary Gas Chromatography

**Yan Xiuping** (Cheung Kong Distinguished Professor, Nankai University, China)

**12:10-13:10 Lunch Western Restaurant, Tianjin Grand View Hotel**

**Theme Chemical Biology and Biochemical Technology**

**Sep. 23 Site: No.388 Conference Room, Tianjin Grand View Hotel**

**13:30-15:45 Chair:**

**Gong Jinglong** (Tianjin University, China)

**Johannes Schwank** (University of Michigan, USA)





**Presentations** (Each Report: 20-30 mins, Questions: 5 mins)

1. Effects of Mutational Spt15 Gene to Xylose Utilization of *Saccharomyces Cerevisiae*

**Ouyang Pingkai** (Academician of Chinese Academy of Engineering, Nanjing University of Technology, China)

2. Production of Bio-based Chemicals from Biomass by Biocatalysis and Microbial Fermentation

**Tan Tianwei** (Beijing University of Chemical Technology, China)

3. Aldolases Catalyzed Large Scale Preparation of Rare Sugars?

**Wang Peng** (Cheung Kong Distinguished Professor, Nankai University, China)

4. Multifunctional Biodegradable Polymers for Gene and Drug Delivery

**Dong Anjie** (Tianjin University, China)

5. Efforts Towards “Greener” Total Synthesis-Case Studies of Agelastatins and Isatisines

**Liang Guangxin** (Nankai University, China)

**Sep. 23 Site: No.1 Conference Room, Tianjin Grand View Hotel**  
**16:10-16:30 Closing Ceremony**  
**17:00-18:00 Dinner Western Restaurant, Tianjin Grand View Hotel**