

RESUME / BIOGRAPHY

Professor Can Li

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I. Research Interests and Achievements

Prof. Can Li has been working on both fundamental and applied research in catalysis and making efforts to reveal the essential relationship between catalytic performance and catalyst structure, and try to understand catalysis at various levels including atomic, molecular as well as nanometer scales and to apply these understandings to the designs and the development of practical applications in energy (solar fuels), fine chemicals (chiral synthesis) and environmental sciences (ultra-deep desulfurization of fuels). In particular to understand the fundamental of catalysis by developing in situ spectroscopy (e.g., UV Raman, Time resolved vibrational and electronic spectroscopy) to characterize the catalyst structure, and catalytic reactions.

In the last decade, Can Li has made significant contribution to the solar fuels production via photocatalytic and photoelectrocatalytic water splitting and CO₂ reduction by developing new concepts in photocatalysis (such as photogenerated charge separation with phase junction, between different facets, and dual co-catalysts strategy). Can Li has over 800 publications, ~ 34000 citations, an H-index ~ 85, ~ 80 granted patents and over 100 plenary and keynote lectures at international conferences.

Can Li has been the Director of the Dalian National Laboratory for Clean Energy since 2011, and the Director of the State Key Laboratory, Dalian Institute of Chemical Physics, Chinese Academy of Sciences between 1998 and 2015, and the former Chairman of the Catalysis Society of China (2005-2012), and the former President of International Association of Catalysis Societies (2008-2012), and the President of The Asia-Pacific Association of Catalysis Societies (2013-2017). Can Li was elected a Member of the Chinese Academy of Science in 2003, a Member of The Academy of Science for Developing Countries (TWAS) in 2005,

and a Foreign Member of Academia Europea in 2008, a Fellow of the Royal Society of Chemistry in 2008.

Can Li has received numerous awards and honors for his contributions to the advancement of the catalysis sciences and technology. Among the prestigious ones include the International Catalysis Award for his outstanding contributions to catalysis in micro- and mesoporous in general, and of UV Raman identification of active sites and confinement effects in chiral synthesis in particular; National Natural Science Prize for his contribution to the UV Resonance Raman Spectroscopy for characterizing catalysts particularly of semiconductor based photocatalysts and transition metal containing zeolites for selective oxidations. Ho Leung Ho Lee Prize (HLHL Foundation from Hong Kong) for his contribution to the development of chiral synthesis in nanoreactors by bridging the heterogeneous and homogenous catalysis, and National Petrochemical Prize for his contribution to the development and commercialization of ultra deep desulfurization with emulsion catalysis and layered bulk catalysts in China. Can Li was awarded the National Catalysis Achievement Award of China for his outstanding contribution to catalysis in 2014. Afterwards, Can Li was awarded the Japanese Photochemistry Association Elsevier Lectureship Award for his contribution to the development of photocatalysis and photoelectrocatalysis in solar energy conversion. In 2018, Can Li was honored the Achievement Award in Spectrum of China. Very recently, Can Li was awarded the Advance of Catalysis Award 2019 of the Asian-Pacific Association of Catalysis Societies for his outstanding contributions in the field of photocatalysis.

II. Curriculum Vitae

Personal Data:

Name	Can Li
Date of Birth	January 23, 1960
Place of Birth	Gansu Province, China
Sex	Male
Marital Status	Married with one child
Foreign Languages	English and Japanese
Nationality	Chinese
Title	Professor, PhD
Position	Director of Dalian National Laboratory for Clean Energy
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Education:

1986-1988	PhD., Physical/Catalysis Chemistry Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China (A jointed education program with Tokyo Institute of Technology, Japan, awarded a UNESCO research fellowship)
1983-1985	MSc, Physical/Catalysis Chemistry Dalian Institute of Chemical Physics, China
1978-80/81-83	BSc, Chemistry, Zhangye Normal College/Shanxi Normal University, China (A chemistry teacher during 1980-1981)

Work Experiences:

2011-	Director, Dalian National Laboratory for Clean Energy
02-03/2007	Visiting Professor, the University of Queensland, Australia
2007-2012	Deputy Director, Dalian Institute of Chemical Physics

2007 Director of Joint Energy Innovation Laboratory (between BP and DICP)

03-04/2003 Invited Professor, Université Pierre et Marie Curie, Paris VI, France

01-03/2002 Visiting Professor, Lehigh University, USA

11-12/2000 JSPS Visiting Professor, the University of Tokyo, Waseda University
Tokyo Institute of Technology, Hokkaido University, and Institute of
Materials Science, Tsukuba, Japan

2000- Director of Joint Laboratory of France-China on Catalysis

01-03/1999 Visiting Professor, the University of Liverpool, UK

1998-2015 Director, State Key Laboratory of Catalysis, Dalian Institute of Chemical
Physics, China

1994-1996 Post-doc/Visiting Professor, Northwestern University, USA

1993-9- Full Professor, Dalian Institute of Chemical Physics, China

1990-1993 Associate Professor, Dalian Institute of Chemical Physics, China

10-12/1990 Visiting Scholar, Louvain-la-Neuve Catholique University, Belgium

1989-1990 Assistant Professor, Dalian Institute of Chemical Physics, China

Professional Societies and Activities:

2013-2017 President of Asian-Pacific Association of Catalysis Society

2008-2012 President of the International Association of Catalysis Societies

2008- Chairman of the Molecular Spectroscopy Society of China

2005-2012 Chairman of the Catalysis Society of China

2005-2009 Chairman of the Light Scattering Society of China

2004-2008 Vice President of the International Association of Catalysis Societies

2004- Chairman of Advisory Board of the State Key Laboratory of Oxo
Synthesis and Selective Oxidation, Lanzhou Institute of Chemical
Physics

1998-2004 Council Member of the International Association of Catalysis Societies

Editorial Boards of Journals:

International Journals:

2012- “Energy Technology” (Editorial Board)

2010- “Chemical Communications” (Associate Editor)

2008- “Journal of Raman Spectroscopy” (Editorial Advisory Board)

2007- “ChemSusChem” (International Advisory Board)

- 2007- “ChemCatChem” (International Advisory Board)
- 2006- “Journal of Physical Chemistry” (International Advisory Board)
- 2005- “Chemistry: An Asian Journal” (Editorial Board)
- 2005-2008 “Physical Chemistry Chemical Physics” (Advisory Board)
- 2005- “Journal of Catalysis” (Editorial Board)
- 2004- “International Journal of Applied Chemistry” (Editorial Board)
- 2003- “Platinum Metals Review” (Editorial Board)
- 2003- “Research on Chemical Intermediates” (Editorial Board)
- 2002- “Journal of Molecular Catalysis A: Chemical” (Editorial Board)
- 2002- “Catalysis Surveys from Asia” (Editorial Board)
- 1998-2004 “Applied Catalysis A: General” (Editorial Board)

Domestic Journals:

- 2005- “Chinese Journal of Fuel Chemistry” (Vice Editor-in-Chief)
- 2004- “Chinese Journal of Chemical Engineering”
- 2003- “Chinese Journal of Chemical Physics”
- 2003- “Spectroscopy and Spectroscopic Analysis” (Vice Editor-in-Chief)
- 2002-2008 “Science in China, B, Chemistry”
- 2002-2008 “Progress in Chemistry”
- 2002- “Chinese Journal of Catalysis” (Vice Editor-in-Chief)
- 2002- “Petrochemical Application and Technology”
- 2001- “Journal of Natural Gas Chemistry”
- 1999- “Chinese Journal of Catalysis”
- 1999-2006 “Chemistry in Chinese”
- 1998- “Petrochemical Technology” (Steering Committee)

Awards and Honors

- 2019 Advance of Catalysis Award 2019 of the Asian-Pacific Association of Catalysis Societies
- 2018 Achievement Award in Spectrum of China
- 2017 Elsevier Lectureship Award of the Japanese Photochemistry Association
- 2016 National Science and Technology Award of China (Top 10)
- 2014 National Catalysis Achievement Award of China
- 2011 National Award for Natural Sciences of China
- 2008 Elected to the Foreign Member of Academia Europaea

- 2005 Outstanding Achievement Prize of the Chinese Academy of Sciences
(Only one in chemistry science field)
- 2005 Elected to the Member of TWAS (The Academy of Sciences for Developing Countries)
- 2005 HLHL (Ho Leung Ho Lee) Prize (Only 4 scientists in chemistry awarded in China)
- 2005 Fellow of Royal Society of Chemistry, FRSC
- 2004 International Catalysis Award (One award is conferred every four years)
- 2003 Elected to the Academician of the Chinese Academy of Sciences
- 2003 Invited Professorship, Université Pierre et Marie Curie, Paris VI, France
- 2003 National Award for Outstanding Scientists Returned from Overseas
- 2001 Japan Science Promotion Society Visiting Professorship
- 1999 National Technology Innovation Prize of China
- 1999 National Award for Excellent Scientists in China
- 1998 National Award for Outstanding Young Scientists in China (One award is granted every three years in the chemistry field)
- 1997 Hong Kong “Qiu-Shi” Award for Outstanding Young Scientists (Five were awarded in chemistry field)
- 1996 NSF Fund for Outstanding Young Scientists of China
- 1994 National Award for Excellent Young Researchers in China
- 1993 Outstanding Young Scientist Awarded by the Chinese Academy of Sciences
- 1993 Natural Science Prize of the Chinese Academy of Sciences

Honorary, Guest Professorships and visiting scholars:

- 2014- Hong Kong Baptist University (Distinguished Professor)
- 2010- South China University of Technology (Honorary Professor)
- 2009- Sun Yat-sen University
- 2009- Herbin Institute of Technology (Honorary Professor)
- 2008- Nanjing University
- 2008- Hunan University
- 2007- The University of Queensland, Australia (Honorary Professor)
- 2006- Tsinghua University
- 2006- Beijing Institute of Technology (Beijing University of Science and Technology)
- 2005- Northwestern Normal University (Honorary Professor)

2005-	Shanxi University
2005-	Peking University
2005-	Inner Monguli University
2004-	Institute of Chemistry, Chinese Academy of Sciences
2004-	Hexi College (Honorary Professor)
2004-	Liaoning Normal University
03-04/2003	Invited Professor, Université Pierre et Marie Curie, Paris VI, France
2002-	Yantai University
2002-	Zhejiang Normal University
2000-	Northeastern Normal University (Honorary Professor)
2001-	University of Science and Technology of China
2000-	Dalian University of Technology
1999-	Guizhou University
1999-	Shanxi Normal University
1998-	Lanzhou University

III. List of Publications

International Journals

1. Establishing inorganic-biological hybrid photoelectrochemical platform towards sustainable conversion of α -chitin, Hefeng Zhang, Yong Zhao, Huiyan Zhang, Haichuan Zhou, Hong Wang, Xu Zong, Heng Yin, **Can Li***, *Applied Catalysis B: Environmental*, **2019**, 265, 118558.
2. Advanced space- and time-resolved techniques for nanoparticle photocatalysts studies, Yuying Gao, Wei Nie, Xiuli Wang, Fengtao Fan, **Can Li***, *Chemical Communications*, **2019**, DOI: 10.1039/C9CC07128H.
3. Efficient hydrogen peroxide synthesis by metal-free polyterthiophene via photoelectrocatalytic dioxygen reduction, Wenjun Fan, Bingqing Zhang, Xiaoyu Wang, Weiguang Ma, Deng Li, Zhiliang Wang, Michel Dupuis, Jingying Shi, Shijun Liao, **Can Li***, *Energy & Environmental Science*, **2019**, DOI: 10.1039/c9ee02247c.
4. Carbon nitride embedded with transition metals for selective electrocatalytic CO₂ reduction, Chunmei Ding, Chengcheng Feng, Yuhua Mei, Fengyuan Liu, Hong Wang, Michel Dupuis, **Can Li***, *Applied Catalysis B: Environmental*, **2019**, DOI: 10.1016/j.apcatb.2019.118391.
5. Surface polarity - induced spatial charge separation boosting photocatalytic overall water splitting on GaN nanorod arrays, Zheng Li, Liang Zhang, Yong Liu, Chenyi Shao, Yuying Gao, Fengtao Fan, Junxi Wang, Jinmin Li, Janchang Yan, Rengui Li, **Can Li***, *Angewandte Chemie International Edition*, **2019**, DOI: 10.1002/anie.201912844.
6. High-performance MaZrO_x (Ma = Cd, Ga) solid-solution catalysts for CO₂ hydrogenation to methanol, Jijie Wang, Chizhou Tang, Guanna Li, Zhe Han, Zelong Li, Hailong Liu, Feng Cheng, **Can Li***, *ACS Catalysis*, **2019**, 9, 10253-10259.
7. Water oxidation catalysts for artificial photosynthesis, Sheng Ye, Chunmei Ding, Mingyao Liu, Aoqi Wang, Qinge Huang, **Can Li***, *Advanced Materials*, **2019**, DOI: 10.1002/adma.201902069.
8. Carboxylation of toluene with CO₂-derived dimethyl carbonate over amorphous Ti-Zr mixed-metal oxide catalysts, Hailong Liu, Zelong Li, Jijie Wang, Shengmei Lu, Mengmeng Wang, Yan Liu, **Can Li***, *ChemCatChem*, **2019**, DOI: 10.1002/cctc.201901276.
9. Stereostructural elucidation of glucose phosphorylation by raman optical activity, Yuxuan Tang, Feng Cheng, Zhaochi Feng, Guoqing Jia, **Can Li***, *The Journal of*

Physical Chemistry B, **2019**, 123, 7794-7800.

10. Integrating large-area perovskite solar module with thermoelectric generator for enhanced and stable power output, Ping Fu, Wei Qin, Shengqiang Bai, DongYang, Lidong Chen, Xin Guo, **Can Li***, *Nano Energy*, **2019**, 65, 104009.
11. An unusual charge distribution on the facet of SrTiO₃ nanocube under light irradiation, Linchao Mu, Bin Zeng, Xiaoping Tao, Yue Zhao, **Can Li***, *The Journal of Physical Chemistry Letters*, **2019**, 10, 1212-1216.
12. Optimizing both the CoMo/Al₂O₃ catalyst and the technology for selectivity enhancement in the hydrodesulfurization of FCC gasoline, Cen Zhang, Xinyi Liu, Tiefeng Liu, Zongxuan Jiang, **Can Li***, *Applied Catalysis A: General*, **2019**, 575, 187-197.
13. Heterostructure of 1D Ta₃N₅nanorod/BaTaO₂N nanoparticle fabricated by a one - step ammonia thermal route for remarkably promoted solar hydrogen production, Beibei Dong, Junyan Cui, Yuying Gao, Yu Qi, Fuxiang Zhang, **Can Li***, *Advanced Materials*, **2019**, 31, 1808185.
14. Interfacial charge modulation: an efficient strategy for boosting spatial charge separation on semiconductor photocatalysts, Xiaoping Tao, Yuying Gao, Shengyang Wang, Xiaoyu Wang, Yang Liu, Yue Zhao, Fengtao Fan, Michel Dupuis, Rengui Li, **Can Li***, *Advanced Energy Materials*, **2019**, 9, 1803951.
15. Integrating a redox flow battery into a Z-scheme water splitting system for enhancing the solar energy conversion efficiency, Zhen Li, Wangyin Wang, Shichao Liao, Mingyao Liu, Yu Qi, Chunmei Ding, **Can Li***, *Energy & Environmental Science*, **2019**, 12, 631-639.
16. An organic-base catalyzed asymmetric 1,4-addition of tritylthiol to in situ generated aza-o-quinone methides at the H₂O/DCM interface, Xianghui Liu, Kai Wang, Wengang Guo, Yan Liu, **Can Li***, *Chemical Communications*, **2019**, 55, 2668-2671.
17. Sr- and Co-doped LaGaO₃- δ with high O₂ and H₂ yields in solar thermochemical water splitting, Zhenpan Chen, Qingqing Jiang, Feng Cheng, Jinhui Tong, Min Yang, Zongxuan Jiang, **Can Li***, *Journal of Materials Chemistry A*, **2019**, 7, 6099-6112.
18. Giant defect-induced effects on nanoscale charge separation in semiconductor photocatalysts, Ruotian Chen, Shan Pang, Hongyu An, Thomas Dittrich, Fengtao Fan, **Can Li***, *Nano Letters*, **2019**, 19, 426-432.
19. Promoting photocatalytic H₂ evolution on organic-inorganic hybrid perovskite nanocrystals by simultaneous dual-charge transportation modulation, Hong Wang, Xiaomei Wang, Ruotian Chen, Hefeng Zhang, Xiuli Wang, Junhui Wang, Jing

- Zhang, Linchao Mu, Kaifeng Wu, Fengtao Fan, Xu Zong, **Can Li***, *ACS Energy Letters*, **2019**, 4, 40-47.
20. Novel conjugated organic polymers as candidates for visible-light-driven photocatalytic hydrogen production, Jian Chen, Xiaoping Tao, Lin Tao, He Li, Chunzhi Li, Xiuli Wang, **Can Li***, Rengui Li, Qihua Yang, *Applied Catalysis B: Environmental*, **2019**, 241, 461-470.
 21. One-pot synthesis of BaMg_{1/3}Ta_{2/3}O_{3-x}Ny/Ta₃N₅ heterostructures as H₂-evolving photocatalysts for construction of visible-light-driven Z-scheme overall water splitting, Junyan Cui, Yu Qi, Beibei Dong, Linchao Mu, Qian Ding, Gang Liu, Mingjun Jia, Fuxiang Zhang, **Can Li***, *Applied Catalysis B: Environmental*, **2019**, 241, 1-7.
 22. Dion-jacobson phase 2D layered perovskites for solar cells with ultrahigh stability, Sajjad Ahmad, Ping Fu, Shuwen Yu, Qing Yang, Xuan Liu, Xuchao Wang, Xiuli Wang, Xin Guo, **Can Li***, *Joule*, **2019**, 3, 889-890.
 23. Highly selective conversion of carbon dioxide to aromatics over tandem catalysts, Zelong Li, Yuanzhi Qu, Jijie Wang, Mingrun Li, Shu Miao, **Can Li***, *Joule*, **2019**, 3, 570-583.
 24. CoMo/Al₂O₃ catalysts prepared by tailoring the surface properties of alumina for highly selective hydrodesulfurization of FCC gasoline, Cen Zhang, Michael Brorson, Ping Li, Xinyi Liu, Tiefeng Liu, Zongxuan Jiang, **Can Li***, *Applied Catalysis A: General*, **2019**, 570, 84-95.
 25. Artificial photosynthesis systems for catalytic water oxidation (Feature Article, Front Cover Art), Sheng Ye, Chunmei Ding, **Can Li***, *Advances in Inorganic Chemistry*, **2019**, 74, 3-59.
 26. Homophase junction for promoting spatial charge separation in photocatalytic water splitting, Yu Bai, Yueer Zhou, Jing Zhang, Xuebing Chen, Yonghui Zhang, Jifa Liu, Jian Wang, Fangfang Wang, Changdong Chen, Chun Li, Rengui Li, **Can Li***, *ACS Catalysis*, **2019**, 9, 3242-3252.
 27. *In-situ* fabrication of atomic charge transferring path for constructing heterojunction photocatalysts with hierarchical structure, Dongxu Liu, Jing Zhang, Chun Li, Xun Zhang, Xuebing Chen, Fangfang Wang, Ming Shi, Rengui Li, **Can Li***, *Applied Catalysis B: Environmental*, **2019**, 248, 459-465.
 28. Boosting photocatalytic water splitting by tuning built-in electric field at phase junction, Jing Zhang, Xuebing Chen, Yu Bai, Chun Li, Ying Gao, Rengui Li, **Can Li***, *Journal of Materials Chemistry A*, **2019**, 7, 10264-10272.
 29. Effect of facet - selective assembly of cocatalyst on BiVO₄ photoanode for solar water oxidation, Deng Li, Ruotian Chen, Pengpeng Wang, Zhen Li, Jian Zhu,

- Fengtao Fan, Jingying Shi, **Can Li***, *ChemCatChem*, **2019**, 11, 1-8.
30. Advances in solar energy conversion, Jinlong Gong, **Can Li***, Michael R. Wasielewski, *Chemical Society Reviews*, **2019**, 48, 1862-1864.
 31. Simultaneous photoelectrocatalytic water oxidation and oxygen reduction for solar electricity production in alkaline solution, Bingqing Zhang, Lihue He, Tingting Yao, Wenjun Fan, Xiangtian Zhang, Sheng Wen, Jingying Shi, **Can Li***, *ChemSusChem*, **2019**, 12, 1026-1032.
 32. Stable potential windows for long - term electrocatalysis by manganese oxides under acidic conditions, Ailong Li, Hideshi Ooka, Nadège Bonnet, Toru Hayashi, Yimeng Sun, Qike Jiang, **Can Li***, Hongxian Han, Ryuhei Nakamura, *Angewandte Chemie International Edition*, **2019**, 58, 1-6.
 33. Crystallographic-orientation-dependent charge separation of BiVO₄ for solar water oxidation, Deng Li, Yong Liu, Wenwen Shi, Chenyi Shao, Shengyang Wang, Chunmei Ding, Taifeng Liu, Fengtao Fan, Jingying Shi, **Can Li***, *ACS Energy Letters*, **2019**, 4, 825-831.
 34. PTB7:PC61BM bulk heterojunction-based photocathodes for efficient hydrogen production in aqueous solution, Wenwen Shi, Wei Yu, Deng Li, Doudou Zhang, Wenjun Fan, Jingying Shi, **Can Li***, *Chemistry of Materials*, **2019**, 31, 1928-1935.
 35. Bandgap engineering of dual acceptor-containing naphthalene diimide polymers for all-polymer solar cells, Dandan Tu, Xuan Liu, Jing Zhang, Qing Yang, Shuwen Yu, Xin Guo, **Can Li***, *ACS Sustainable Chemistry & Engineering*, **2018**, 6, 16005-16010.
 36. Development of novel perovskite - like oxide photocatalyst LiCuTa₃O₉ with dual functions of water reduction and oxidation under visible light irradiation, Beibei Dong, Junyan Cui, Taifeng Liu, Yuying Gao, Yu Qi, Deng Li, Fengqiang Xiong, Fuxiang Zhang, **Can Li***, *Advanced Energy Materials*, **2018**, 8, 1801660.
 37. Visible-light driven overall conversion of CO₂ and H₂O to CH₄ and O₂ on 3D-SiC@2D-MoS₂ heterostructure, Ying Wang, Zizhong Zhang, Lina Zhang, Zhongbin Luo, Jinni Shen, Huaxiang Lin, Jinlin Long, Jeffrey C. S. Wu, Xianzhi Fu, Xuxu Wang, **Can Li***, *Journal of the American Chemical Society*, **2018**, 140, 14595-14598.
 38. Quasi - amorphous metallic nickel nanopowder as an efficient and durable electrocatalyst for alkaline hydrogen evolution, Doudou Zhang, Jingying Shi, Yu Qi, Xiaomei Wang, Hong Wang, Mingrun Li, Shengzhong Liu, **Can Li***, *Advanced Science*, **2018**, 5, 1801216.

39. Fluorescence spectroscopic insight into the supramolecular interactions in DNA - based enantioselective sulfoxidation, Yu Cheng, Dr. Mingpan Cheng, Jingya Hao, Dr. Guoqing Jia, **Can Li***, *ChemBioChem*, **2018**, 19, 2233-2240.
40. Water oxidation on a mononuclear manganese heterogeneous catalyst, Jingqi Guan, Zhiyao Duan, Fuxiang Zhang, Shelly D. Kelly, Rui Si, Michel Dupuis, Qinge Huang, John Qianjun Chen, Chunhua Tang, **Can Li***, *Nature Catalysis*, **2018**, 1, 870-877.
41. Photothermally promoted cleavage of β -1,4-glycosidic bonds of cellulosic biomass on Ir/HY catalyst under mild conditions, Bao Zhang, Jun Li, Lin Guo, Zhenpan Chen, **Can Li***, *Applied Catalysis B: Environmental*, **2018**, 237, 660-664.
42. Tandem one-pot CO₂ reduction by PMHS and silyloxycarbonylation of aryl/vinyl halides to access carboxylic acids, Kumaraswamy Paridala, ShengMei Lu, MengMeng Wang, **Can Li***, *Chemical Communications*, **2018**, 54, 11574-11577.
43. The synthesis of chiral trispirocyclic oxindoles via organic-base/Au(I)-catalyzed sequential reactions, Wengang Guo, Lu Li, Qian Ding, Xiangfeng Lin, Xianghui Liu, Kai Wang, Yan Liu, Hongjun Fan, **Can Li***, *ACS Catalysis*, **2018**, 8, 10180-10189.
44. Bifunctional donor polymers bearing amino pendant groups for efficient cathode interlayer-free polymer solar cells, Xuan Liu, Ping Fu, Dandan Tu, Qing Yang, Shuwen Yu, Xin Guo, **Can Li***, *Journal of Materials Chemistry A*, **2018**, 6, 19828-19833.
45. Visible-light-responsive 2D cadmium-organic framework single crystals with dual functions of water reduction and oxidation, Yejun Xiao, Yu Qi, Xiuli Wang, Xiaoyu Wang, Fuxiang Zhang, **Can Li***, *Advanced Materials*, **2018**, 30, 1803401.
46. Amorphous multi-elements electrocatalysts with tunable bifunctionality towards overall water splitting, Xiaomei Wang, Weiguang Ma, Chunmei Ding, Zhiqiang Xu, Hong Wang, Xu Zong, and **Can Li***, *ACS Catalysis*, **2018**, 8, 9926-9935.
47. Roles of phase-junction in photocatalysis and photoelectrocatalysis, Xiuli Wang, and **Can Li***, *The Journal of Physical Chemistry C*, **2018**, 122, 21083-21096.
48. An Operando-Raman study on oxygen evolution of manganese oxides: roles of phase composition and amorphization, Hongyu An, Zheng Chen, Jingxiu Yang, Zhaochi Feng, Xiuli Wang, Fengtao Fan, **Can Li***, *Journal of Catalysis*, **2018**, 367, 53-61.
49. Improving catalytic hydrogenation performance of Pd nanoparticles by electronic modulation using phosphine ligands, Miao Guo, He Li, Yiqi Ren, Xiaomin Ren, Qihua Yang, and **Can Li***, *ACS Catalysis*, **2018**, 8, 6476-6485.

50. Redox-based visible-light-driven Z-scheme overall water splitting with apparent quantum efficiency exceeding 10%, Yu Qi, Yue Zhao, Yuying Gao, Deng Li, Zhen Li, Fuxiang Zhang, **Can Li***, *Joule*, **2018**, 2, 2393-2402.
51. Lowering molecular symmetry to improve the morphological properties of the hole-transport layer for stable perovskite solar cells, Xuchao Wang, Jing Zhang, Shuwen Yu, Wei Yu, Ping Fu, Xuan Liu, Xin Guo and **Can Li***, *Angewandte Chemie International Edition*, **2018**, 57, 12529-12533.
52. Investigating the coke formation mechanism of H-ZSM-5 during methanol dehydration using operando UV-Raman spectroscopy, Hongyu An, Fei Zhang, Zaihong Guan, Xuebin Liu, Fengtao Fan, **Can Li***, *ACS Catalysis*, **2018**, 8, 9207-9215.
53. Loop permutation affects the topology and stability of G-quadruplexes, Mingpan Cheng, Yu Cheng, Jingya Hao, Guoqin Jia, Jun Zhou, Jean-Louis Mergny and **Can Li***, *Nucleic Acids Research*, **2018**, 46, 9264-9275.
54. Imaging photogenerated charge carriers on surfaces and interfaces of photocatalysts with surface photovoltage microscopy, Ruotian Chen, Fengtao Fan, Thomas Dittrich and **Can Li***, *Chemical Society Reviews*, **2018**, 47, 8238-8262.
55. Charge separation via asymmetric illumination in photocatalytic Cu₂O particles, Ruotian Chen, Shan Pang, Hongyu An, Jian Zhu, Sheng Ye, Yuying Gao, Fengtao Fan and **Can Li***, *Nature Energy*, **2018**, 3, 655-663.
56. Bimodal hole transport in bulk BiVO₄ from computation, Taifeng Liu, Viswanath Pasumarthi, Christine LaPorte, Zhaochi Feng, Qiuye Li, Jianjun Yang, **Can Li***, Michel Dupuis, *Journal of Materials Chemistry A*, **2018**, 6, 3714-3723.
57. A novel synthetic strategy of Fe-ZSM-35 with pure framework Fe species and its formation mechanism, Xiaohua Ju, Fuping Tian, Yanli Wang, Fengtao Fan, Zhaochi Feng, **Can Li***, *Inorganic Chemistry Frontiers*, **2018**, 5, 2031-2037.
58. A sandwich - like organolead halide perovskite photocathode for efficient and durable photoelectrochemical hydrogen evolution in water, Hefeng Zhang, Zhou Yang, Wei Yu, Hong Wang, Weiguang Ma, Xu Zong, **Can Li***, *Advanced Energy Materials*, **2018**, 8, 1800795.
59. Dynamic interaction between methylammonium lead iodide and TiO₂ nanocrystals leads to enhanced photocatalytic H₂ evolution from HI splitting, Xiaomei Wang, Hong Wang, Hefeng Zhang, Wei Yu, Xiuli Wang, Yue Zhao, Xu Zong, **Can Li***, *ACS Energy Letters*, **2018**, 3, 1159-1164.
60. Photoelectrocatalytic materials for solar water splitting, Tingting Yao, Xiurui An, Hongxian Han, John Qianjun Chen, **Can Li***, *Advanced Energy Materials*, **2018**, 8,

1800210.

61. Hydrogen generation from formic acid decomposition on a highly efficient iridium catalyst bearing a diaminoglyoxime ligand, Sheng-Mei Lu, Zhijun Wang, Jijie Wang, Jun Li, **Can Li***, *Green Chemistry*, **2018**, 20, 1835-1840.
62. Metal phosphide catalysts anchored on metal-caged graphitic carbon towards efficient and durable hydrogen evolution electrocatalysis, Xiaomei Wang, Weiguang Ma, Zhiqiang Xu, Hong Wang, Wenjun Fan, Xu Zong, **Can Li***, *Nano Energy*, **2018**, 48, 500-509.
63. Transition-metal-based electrocatalysts as cocatalysts for photoelectrochemical water splitting: a mini review, Deng Li, Jingying Shi, **Can Li***, *Small*, **2018**, 14, 1704179.
64. Achieving simultaneous CO₂ and H₂S conversion via a coupled solar-driven electrochemical approach on non-precious-metal catalysts, Weiguang Ma, Hong Wang, Dr. Wei Yu, Xiaomei Wang, Zhiqiang Xu, Xu Zong, **Can Li***, *Angewandte Chemie International Edition*, **2018**, 57, 1-6.
65. Mimicking the key functions of photosystem II in artificial photosynthesis for photoelectrocatalytic water splitting, Sheng Ye, Chunmei Ding, Ruotian Chen, Fengtao Fan, Ping Fu, Heng Yin, Xiuli Wang, Zhiliang Wang, Pingwu Du, **Can Li***, *Journal of the American Chemical Society*, **2018**, 40, 3250-3256.
66. Using Pd as a cocatalyst on GaN-ZnO solid solution for visible-light-driven overall water splitting, Zheng Li, Fuxiang Zhang, Jingfeng Han, Jian Zhu, Mingrun Li, Bingqing Zhang, Wenjun Fan, Junling Lu, **Can Li***, *Catalysis Letters*, **2018**, 148, 1-7.
67. Photoelectrochemical regeneration of all vanadium redox species for construction of a solar rechargeable flow cell, Shichao Liao, Jingying Shi, Chunmei Ding, Mingyao Liu, Fengqiang Xiong, Nan Wang, Jian Chen, **Can Li***, *Journal of Energy Chemistry*, **2018**, 27, 278-282.
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IV. Keynotes and Plenary Lectures at International Conferences

1. “Photocatalysis and photoelectrocatalysis for artificial photosynthesis: frontier and challenge”, *Annual Meeting on Photochemistry 2017*, Sendai, Japan, September 4-6, 2017 (Plenary Lecture)
2. “Chemical energy conversion for sustainable development”, *13th International Conference on Chemistry and Its Role in Development*, Mansura-Sharm El Sheikh, Egypt, March 20-24, 2017 (Plenary Lecture)
3. “Photocatalysis and photoelectrocatalysis for artificial photosynthesis: frontier and challenge”, *50th German Catalysis Society Meeting*, Weimar, German, March 15-17, 2017 (Plenary Lecture)
4. “Photogenerated Charge Separation in Artificial Photosynthesis Systems”, *2017 international conference on artificial photosynthesis*, Kyoto, Japan, March 2-5, 2017 (Plenary Lecture)
5. “Photogenerated Charge Separation in Artificial Photosynthesis Systems”, *Asia-Pacific Congress on Catalysis (APCAT-7)*, Mumbai, India, January 17-21, 2017 (Plenary Lecture)
6. “Fundamental understanding of photocatalysis and photoelectrocatalysis for solar fuel production”, *Ernst Haage Symposium*, Munich, German, November 22-24, 2016 (Plenary Lecture)
7. “Photogenerated Charge Separation in Artificial Photosynthesis Systems”, *AIChE Annual Meeting*, San Francisco, November 13-18, 2016 (Invited Lecture)
8. “Artificial Photosynthesis: Frontier and Challenge”, *2016 Solar Energy Conversion Gordon Research Conference*, Hong Kong, July 17-22, 2016 (Plenary Lecture)
9. “Photogenerated charge separation in artificial photosynthesis systems”, *XXVIth IUPAC Symposium on Photochemistry*, Osaka, Japan, April 3-8, 2016 (Plenary Lecture)
10. “Fundamental understanding of photocatalysis and photoelectrocatalysis for solar fuel production”, *The Third International Conference on Advanced Complex Inorganic Nanomaterials*, Namur, Belgium, July 13-17m 2015 (Plenary Lecture)
11. “Homogeneous Catalysis in Heterogeneous Nanoreactors”, *The 17th Edition of the International Symposium on Relations between Homogeneous and Heterogeneous Catalysis*, Utrecht, The Netherlands, July 12-15, 2015 (Plenary Lecture)
12. “Artificial Photosynthesis for Solar Fuel Production”, *Theo Murphy International Scientific Meeting*, Milton Keynes, UK, July 8-10, 2014 (Invited

- Lecture)
13. “Fundamental Understanding of Photocatalysis and Photoelectrocatalysis for Solar Fuel Production”, *The 3rd International Workshop on Solar Energy for Sustainability*, Singapore, June 11-14, 2014 (Invited Lecture)
 14. “Fundamental Understanding of Photocatalysis and Photoelectrocatalysis for Solar Fuel Production”, *The 7th Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT7)*, Kyoto, Japan, June 1-6, 2014 (Plenary Lecture)
 15. “Photocatalytic Evolution of Oxygen and Hydrogen on Cocatalysts”, *2014 Gordon Research Conference on Renewable Energy: Solar Fuels*, Ventura California, USA, January 19-24, 2014 (Discussion Leader)
 16. “Fundamental Understanding of Photocatalysis: Roles of Cocatalysts and Junctions”, *The 6th Asia-Pacific Congress on Catalysis (APCAT-6)*, Taipei, October 13-17, 2013 (Keynote)
 17. “Photocatalytic Evolution of Oxygen and Hydrogen on Cocatalysts”, *2013 Gordon Research Conference on Chemical Reactions at Surfaces*, Les Diablerets, Switzerland, April 28-May 3, 2013 (Invited Lecture)
 18. “Photocatalytic hydrogen production by utilizing solar energy roles of cocatalysts in photocatalysis”, *The 245th ACS National Meeting & Exposition*, New Orleans, Louisiana, USA, April 7-11, 2013 (Keynote)
 19. “The roles of cocatalyst and junctions in photocatalytic hydrogen production utilizing solar energy”, *The 15th International Congress on Catalysis*, Germany, July 1-6, 2012 (Keynote)
 20. “Photocatalytic Hydrogen Production Utilizing Solar Energy”, *International Conference on Hydrogen Production 2012*, Korea, June 24-27, 2012 (Keynote)
 21. “Understanding the Roles of Co-Catalysts and Junctions in Photocatalytic Hydrogen Production Utilizing Solar Energy”, *2012 Gordon Research Conference on Renewable Energy: Solar Fuels*, Lucca, Italy, May 13-18, 2012 (Invited Lecture)
 22. “UV Raman Spectroscopic Characterization of Catalytic Materials for Energy and Environment”, *22nd Canadian Symposium on Catalysis*, Canada, May 13-16, 2012 (Plenary lecture)
 23. “Photocatalytic Hydrogen Production by Utilizing Solar Energy Roles of Cocatalysts in Photocatalysis”, *Materials Research Society (MRS) 2012 spring meeting*, San Francisco, CA, April 9-13, 2012 (Invited Lecture)
 24. “Photocatalytic hydrogen production by utilizing solar energy roles of

- cocatalysts in photocatalysis”, *The 243rd ACS National Meeting & Exposition*, San Diego, California, March 25-29, 2012 (Invited Lecture)
25. “Homogeneous Catalysis in Heterogeneous Nanoreactors”, *The 5th International Symposium of Hokkaido University Global COE Program*, Sapporo, Japan, February 21-22, 2012 (Keynote)
 26. “Photocatalytic Hydrogen Production Utilizing Solar Energy”, *The 4th Catalysis Society Symposium of Singapore*, Singapore, June 19-20, 2011 (Plenary Lecture)
 27. “Rational Designing and Preparation of Photocatalytic Materials for Solar Fuel Production”, *The International Conference on Clean Energy Science*, Dalian, China, April 10-13, 2011 (Plenary Lecture).
 28. “The important roles of chemistry and chemical engineering in solar energy utilizations”, *The 21st International Symposium on Chemical Reaction Engineering*, Philadelphia, PA, USA, Jun 13-16, 2010 (Plenary Lecture)
 29. “Roles of co-catalysts and surface junctions played in photocatalytic hydrogen production”, *The workshop “Co-catalysts in Photochemical Fuel Production”*, Lyngby, Denmark, May 17-18, 2010 (Invited Lecture)
 30. “Photocatalytic hydrogen production on semiconductor-based catalysts: Roles of co-catalysts and surface junctions”, *The fourth “IDECAT Conference on Catalysis”*, Porquerolles, France, May 12-16, 2010 (Invited Lecture)
 31. “UV Raman spectroscopic characterization of catalytic materials”, *The ACS 239th National Meeting, San Francisco*, USA, March 21-25, 2010 (Invited Lecture)
 32. “The vital role of catalysis played in developing clean and renewable energy”, *Hokkaido University CRC International Symposium on “Innovation Driven by Catalysis-Past, Present and Future”-Dedicated to the 20th Anniversary of CRC*, Sapporo, Japan, December 7-9, 2009 (Invited Lecture)
 33. “The roles of surface junctions and co-catalysts played in photocatalytic hydrogen production”, *Symposium “Catalytic Materials for Energy, Green Processes and Nanotechnology (Symposium Y)” in the MRS 2009 Fall Meeting*, Boston, USA, November 29-December 4, 2009 (Invited Lecture)
 34. “The important roles of chemistry and chemical engineering in solar energy utilizations”, *The 5th Sino-US Joint Conference of Chemical Engineering*, Beijing, China, October 13-16, 2009 (Invited Lecture)
 35. “Using the sunlight to address the energy issues-sunlight to power the world”, *First Chemical Sciences and Society Symposium*, Kloster Seeon, Germany,

- July 22-26, 2009 (Invited Lecture)
36. “The role of co-catalysts and surface junctions played in photocatalytic hydrogen production”, *Nanostructured Catalysts Symposium*, Seoul, Korea, October 21-23, 2009 (Invited Lecture)
 37. “UV Raman spectroscopic studies on surface phase transformation and photocatalytic performance of TiO₂”, *21st NAM*, San Francisco, USA, June 7-12, 2009 (Invited Lecture)
 38. “Fundamental understanding of photocatalytic hydrogen production”, *International Symposium on Solar Cells and Solar Fuels*, Dalian, China, December 10-12, **2008** (Keynote Lecture)
 39. “Ultra-deep desulfurization of fuels using emulsion catalysis”, *The 5th International Conference on Environmental Catalysis*, Belfast, UK, August 31-September 3, 2008 (Plenary Lecture)
 40. “Photocatalytic hydrogen production utilizing solar energy”, *International Hyforum*, Changsha, China, August 16-19, 2008 (Invited Lecture)
 41. “Chiral catalysis on surfaces, in nanoreactors and with emulsions”, *The 14th International Congress on Catalysis*, Seoul, Korea, July 13-18, 2008 (Invited Lecture)
 42. “Emulsion catalysis for ultra-deep desulfurization and chiral synthesis”, *The Post-Conference of the 14th ICC, Catalysis for Clean Fuels*, Dalian, China, July 21-24, 2008 (Plenary Lecture)
 43. “Fundamental understanding of photocatalytic hydrogen production”, *Post-Conference of the 14th ICC, Catalysis for Hydrogen Energy Production and Utilization*, Gyeongju, Korea, July 19-23, 2008 (Keynote Lecture)
 44. “Photocatalytic hydrogen production utilizing solar energy”, *Raw Materials for the Future: from Black to Green Gold?*, Lyon, France, December 6-7, 2007 (Invited Lecture)
 45. “Surface phase transformation of TiO₂ and its photocatalytic significance studied by UV Raman spectroscopy”, *International Conference Catalysis: Fundamentals and Application*, Novosibirsk, Russia, July 4-8, 2007 (Keynote Lecture)
 46. “UV Raman spectroscopic studies on transition metal-containing microporous and mesoporous materials: Active sites and synthesis mechanism”, *15th International Zeolite Conference*, Beijing, China, August 12-17, 2007 (Invited Lecture)
 47. “Catalysis on surface”, *Learning Organic Synthesis Tremendously*, Namur,

- Belgium, May 21-23, 2007 (Invited Lecture)
48. "UV Raman spectroscopic studies on catalytic materials: Active sites and active phases", ***2007 Meeting of the DOE/BES Catalysis and Chemical Transformations Program***, Wintergreen, USA, May 23-26, 2007 (Invited Lecture)
 49. "Emulsion catalysis: An environmentally benign and green chemistry approach", ***The 4th Asia-Pacific Congress on Catalysis (APCAT 4)***, Singapore, December 6-8, 2006 (Plenary Lecture)
 50. "UV Raman spectroscopic study on phase transformation of metal oxides", ***The 20th International Conference on Raman Spectroscopy***, Yokohama, Japan, August 2006 (Keynote Lecture)
 51. "Hydrogen production by utilizing solar energy", ***Emerging Energy Summit***, Santa Barbara, USA, March 2006 (Invited Lecture)
 52. "Phase transformation at surface region and its catalytic significance studied by UV Raman spectroscopy", ***Annual Meeting of the Pacific Coast Catalysis Society***, Berkeley, USA, March 11, 2005 (Invited Lecture)
 53. "Structure of active site and α -Oxygen formation on Fe/ZSM-5", ***American Chemical Society Meeting***, San Diego, USA, 2005, (Invited Lecture)
 54. "Chiral synthesis in the pores of mesoporous materials", ***ICMAT & IUMRS-ICAM***, Singapore, July 3-8, 2005 (Invited Lecture)
 55. "Design, synthesis and catalysis of recoverable catalysts assembled in emulsion and its application in deep desulfurization of fuel oil", ***Seventh European Congress on Catalysis, Europacat-7***, Sofia, Bulgaria, August 28, 2005 (Invited Lecture)
 56. "UV Raman spectroscopy and its applications in catalysis and materials science", ***The 40th IUPAC Congress***, Beijing, China, August 14-19, 2005 (Invited Lecture)
 57. "Transition metal nitrides, carbides and phosphides: Possible catalysts for hydrodesulfurizations", ***The 2005 International Chemical Congress of Pacific Basin Societies (Pacifichem)***, Hawaii, USA, 2005 (Invited Lecture)
 58. "UV resonance Raman spectroscopic characterization of transition metal ions/oxides incorporated in the nanoporous materials", ***The 2005 International Chemical Congress of Pacific Basin Societies (Pacifichem)***, Hawaii, USA, December 15-20, 2005 (Invited Lecture)
 59. "Photocatalytic production of hydrogen from biomass reforming", ***The 2005 International Chemical Congress of Pacific Basin Societies (Pacifichem)***,

- Hawaii, USA , December 15-20, 2005 (Invited Lecture)
60. “Catalysis in micro- and meso-Pores: UV Raman identification of active sites and confinement effects in chiral synthesis”, *The 13th International Congress on Catalysis*, Paris, France, June 11-16, 2004 (Plenary Lecture)
 61. “Heterogeneous catalysis for chiral synthesis”, *The 2nd International Conference on Catalysis and Fine Chemicals*, Hong Kong, China, December 12-14, 2004, (Plenary Lecture)
 62. “Frontiers of heterogeneous catalysis in the early 21st century”, *The 12th National Congress on Catalysis*, Beijing, China, December 2004 (Plenary Lecture)
 63. “Chiral synthesis in mesopores of heterogeneous catalysts”, *International Symposium on Chemicals and Pharmaceuticals*, Guangzhou, China, December 16-18, 2004 (Plenary Lecture)
 64. “Applications of modern spectroscopy in chemistry and biology”, *National Conference for Celebrating the 10th Anniversary of Outstanding Young Scientist Fund*, Beijing, China, September, 2004 (Invited Lecture)
 65. “Photocatalysis for Hydrogen Production” *Gordon Research Conference*, New Hampshire, USA, June 27-July 2, 2004, (Invited Lecture)
 66. “Highly isolated transition metal ions in zeolites characterized by UV resonance Raman spectroscopy”, *The 13th National Conference on Light Scattering*, Dalian, China, October, 2003 (Invited Lecture)
 67. “Chiral synthesis on heterogeneous catalysts”, *The 9th National Conference on Homogeneous Catalysis*, Dalian, China, October, 2003 (Plenary Lecture)
 68. “Chirality on surface and in pore, and heterogeneous chiral catalysis”, *Annual Symposium on Physical Chemistry*, Changchun, China, December, 2003 (Invited Lecture)
 69. “Advances in catalyst characterization using UV Raman spectroscopy”, *The 4th Tokyo Advanced Catalytic Science and Technology (TOCAT 4)*, Tokyo, Japan, July14-19, 2002 (Keynote Lecture)
 70. “Asymmetric catalysis on chirally modified heterogeneous catalysts”, *The 10th National Conference on Catalysis*, Hangzhou, China, October, 2002 (Keynote Lecture)
 71. “Progress on UV Raman spectroscopy”, *Chemistry Department, Northwestern University*, USA, December, 2002 (Colloquium Lecture)
 72. “Epoxidation of olefins on the catalysts synthesized by ion beam implantation and chemical grafting”, *International Workshop on Catalysis for Young*

- Scientists*, Beijing, China, September, 2001 (Keynote Lecture)
73. “Catalytic materials and frontier in catalysis”, *The 4th USA-China Conference on Frontier Sciences*, Beijing, China, September, 2001 (Plenary Lecture)
 74. “Advances in catalyst characterization using UV Raman spectroscopy”, *Annual Conference of Japanese Society of Catalysis*, Tokyo, Japan, December, 2001 (Invited Lecture)
 75. “Application of UV resonance Raman spectroscopy in catalysis and materials science”, *The 17th International Conference on Raman Spectroscopy*, Beijing, China, August, 2000 (Keynote Lecture)
 76. “UV Raman spectroscopy of catalysts and other solid surface”, *International Symposium on Surface Raman Spectroscopy*, Xiamen, China, August, 2000 (Invited Lecture)
 77. “Highly isolated and dispersed transition metal ions and oxides studied by UV resonance Raman spectroscopy”, *International Conference on Colloid and Surface Science*, Tokyo, Japan, November, 2000 (Keynote Lecture)
 78. “Transition metal nitrides catalysts, preparation, characterization and catalysis” *International Symposium on Nanostructured Materials and Advanced Functions*, Sapporo, Japan, November, 2000 (Invited Lecture)
 79. “Catalytic oxidation destruction of chlorinated aromatic pollutants”, *Waseda University, School of Science & Engineering*, Tokyo, Japan, November, 2000 (Colloquium Lecture)
 80. “Application of UV Raman spectroscopy in catalysis”, *Leverhulme Center for Innovative Catalysis, The University of Liverpool*, Liverpool, UK, January, 1999 (Colloquium Lecture)
 81. “Applications of Raman spectroscopy in surface chemistry”, *Conference of American Vacuum Society*, Chicago, USA, June, 1996 (Invited Lecture)
 82. “UV Raman spectroscopy applied in chemistry and materials science”, Lawrence Laboratory, University of California at Berkeley, June, 1996 (Colloquium Lecture)
 83. “A new technique for catalyst characterization: UV Raman spectroscopy”, *Chicago Catalysis Club*, Argonne National Laboratory, USA, May, 1995 (Invited Lecture)

V. List of Selected Exemplary Publications

A UV Raman Spectroscopic Identification of active sites in Zeolites and Zeolite Synthesis

- A-1 UV resonance Raman spectroscopic identification of titanium atoms in the framework of TS-1 zeolite, **Can Li***, Guang Xiong, Qin Xin, Jianke Liu, Pinliang Ying, Zhaochi Feng, Jian Li, Wubin Yang, Yongzhong Yang, Guiru Wang, Xiyao Liu, Min Lin, Xieqing Wang and Enze Min, *Angewandte Chemie International Edition*, **1999**, 38: 2220-2222. (*citations: 127*)
- A-2 Characterization of iron atoms in the framework MFI-type zeolites by UV resonance Raman spectroscopy, Yi Yu, Guang Xiong, **Can Li*** and Fengshou Xiao*, *Journal of Catalysis*, **2000**, 194: 487-490. (*citations: 36*)
- A-3 Identifying the isolated transition metal ions/oxides in molecular sieves and on oxide supports by UV resonance Raman spectroscopy, **Can Li***, *Journal of Catalysis*, **2003**, 216: 203-212. (Invited paper for 40th Commemorative Issue) (*citations: 85*)
- A-4 Framework Fe ions in Fe-ZSM-5 zeolite studied by UV resonance Raman spectroscopy and density functional theory calculations, Keju Sun, Fengtao Fan, Haian Xia, Zhaochi Feng, Weixue Li and **Can Li***, *Journal of Physical Chemistry C*, **2008**, 112: 16036-16041. (*citations: 21*)
- A-5 In situ UV Raman spectroscopic study on the synthesis mechanism of AlPO-5, Fengtao Fan, Zhaochi Feng, Keju Sun, Meiling Guo, Qiang Guo, Yu Song, Weixue Li and **Can Li***, *Angewandte Chemie International Edition*, **2009**, 48, 8743-8747. (*citations: 25*)
- A-6 UV Raman spectroscopic studies on active sites and synthesis mechanisms of transition metal-containing microporous and mesoporous materials, Fengtao Fan, Zhaochi Feng and **Can Li***, *Accounts of Chemical Research*, **2010**, 43: 378-387. (*citations: 33*)
- A-7 UV Raman spectroscopic study on the synthesis mechanism and assembly of molecular sieves, Fengtao Fan, Zhaochi Feng and **Can Li***. *Chemical Society Reviews*, **2010**, 39: 4794-4801. (*citations: 18*)
- A-8 A Thorough Investigation on the Active Titanium Species in TS-1 Zeolite by In Situ UV Resonance Raman Spectroscopy, Qiang Guo, Keju Sun, Zhaochi Feng, Guanna Li, Meiling Guo, Fengtao Fan*, and **Can Li***, *Chemistry-A European Journal*, **2012**, 18: 13854-13860. (*citations: 10*)

B UV Raman Spectroscopic Characterization of Photocatalysts (phase junction)

- B-1 Phase transformation in the surface region of zirconia detected by UV Raman spectroscopy, Meijun Li, Zhaochi Feng, Guang Xiong, Pinliang Ying, Qin Xin, **Can Li***, *Journal of Physical Chemistry B*, **2001**, 105: 8107-8111. (*citations: 127*)
- B-2 UV Raman spectroscopic study on TiO₂. I. Phase transformation at the surface and in the bulk, Jing Zhang, Meijun Li, Zhaochi Feng, Jun Chen and **Can Li***, *Journal of Physical Chemistry B*, **2006**, 110: 927-935. (*citations: 312*)
- B-3 Surface phases of TiO₂ nanoparticles studied by UV Raman spectroscopy and FT-IR spectroscopy, Weiguang Su, Jing Zhang, Zhaochi Feng, Tao Chen, Pinliang Ying and **Can Li***, *Journal of Physical Chemistry C*, **2008**, 112: 7710-7716. (*citations: 54*)
- B-4 Importance of the relationship between surface phases and photocatalytic activity of TiO₂, Jing Zhang, Qian Xu, Zhaochi Feng, Meijun Li and **Can Li***, *Angewandte Chemie International Edition*, **2008**, 47: 1766-1769. (*citations: 343*)
- B-5 Enhancement of photocatalytic water oxidation activity on IrO_x-ZnO/Zn_{2-x}GeO_{4-x-3y}N_{2y} catalyst with the solid solution phase junction, Baojun Ma, Jinhui Yang, Hongxian Han, Jiantao Wang, Xiaohong Zhang and **Can Li***, *Journal of Physical Chemistry C*, **2010**, 114: 12818-12822. (*citations: 20*)
- B-6 Photocatalytic Overall Water Splitting Promoted with α - β Phase Junction on Ga₂O₃, Xiang Wang, Qian Xu, Mingrun Li, Shuai Shen, Xiuli Wang, Yaochuan Wang, Zhaochi Feng, Jingying Shi, Hongxian Han and **Can Li***, *Angewandte Chemie International Edition*, **2012**, 51, 13089-13092. (*citations: 41*)

C Co-catalysts in Photocatalysis

- C-1 Enhancement of photocatalytic H₂ evolution on CdS by loading MoS₂ as cocatalyst under visible light irradiation, Xu Zong, Hongjian Yan, Guopeng Wu, Guijun Ma, Fuyu Wen, Lu Wang, and **Can Li***, *Journal of the American Chemical Society*, **2008**, 130: 7176-7177. (*citations: 374*)
- C-2 Visible-light-driven hydrogen production with extremely high quantum efficiency on Pt-PdS/CdS photocatalyst, Hongjian Yan, Jinhui Yang, Guijun Ma, Guopeng Wu, Xu Zong, Zhibin Lei, Jingying Shi and **Can Li***, *Journal of Catalysis*, **2009**, 266: 165-168. (*citations: 232*)
- C-3 The synergistic effects of two co-catalysts on Zn₂GeO₄ on photocatalytic water splitting, Baojun Ma, Fuyu Wen, Hongfu Jiang, Jinhui Yang, Pinliang Ying and **Can Li***, *Catalysis Letters*, **2010**, 134:78–86. (*citations:*

38)

- C-4 Photocatalytic water oxidation on BiVO₄ with the electrocatalyst as an oxidation cocatalyst: Essential relations between electrocatalyst and photocatalyst, Donge Wang, Rengui Li, Jian Zhu, Jingying Shi, Jingfeng Han, Xu Zong, and **Can Li***, *Journal of Physical Chemistry C*, **2012**, 116: 5082-5089. (*citations: 54*)
- C-5 Roles of Cocatalysts in Photocatalysis and Photoelectrocatalysis, Jinhui Yang, Donge Wang, Hongxian Han, and **Can Li***, *Accounts of Chemical Research*, **2013**, 46, 1900-1909. (*citations: 60*)
- C-6 Spatial Separation of Photogenerated Electrons and Holes among {010} and {110} Crystal Facets of BiVO₄, Rengui Li, Fuxiang Zhang, Donge Wang, Jingxiu Yang, Mingrun Li, Jian Zhu, Xin Zhou, Hongxian Han and **Can Li***, *Nature. Communications*, **2013**, 4:1432. (*citations: 53*)
- C-7 Dual Cocatalysts Loaded Type I CdS/ZnS Core/Shell Nanocrystals as Effective and Stable Photocatalysts for H₂ Evolution, Lei Huang, Xiuli Wang, Jinhui Yang, Gang Liu, Jingfeng Han, and **Can Li***, *The Journal of Physical Chemistry C*, **2013**, 117 (22), 11584-11591. (*citations: 11*)

D Catalytic Reactions in Nanoreactors

- D-1 Enantioselective epoxidation of olefins catalyzed by Mn(salen)/MCM-41 synthesized with a new anchoring method, Song Xiang, Yiliang Zhang, Qin Xin and **Can Li***, *Chemical Communications*, **2002**, 2696-2697. (*citations: 122*)
- D-2 Asymmetric epoxidation of allyl alcohol on organic-inorganic hybrid chiral catalysts grafted onto the surface of silica and in the mesopores of MCM-41, Song Xiang, Yiliang Zhang, Qin Xin and **Can Li***, *Angewandte Chemie International Edition*, **2002**, 41: 821-824. (*citations: 72*)
- D-3 Chiral synthesis on catalysts immobilized in microporous and mesoporous materials, **Can Li***, *Cataysis Reviews*, **2004**, 46: 419-492. (*citations: 237*)
- D-4 Chiral catalysis in nanopores of mesoporous materials, **Can Li***, Huidong Zhang, Dongmei Jiang and Qihua Yang, *Chemical Communications*, **2007**, 547-558. (*citations: 128*)
- D-5 Enhanced cooperative activation effect in the hydrolytic kinetic resolution of epoxides on [Co(salen)] catalysts confined in nanocages, Hengquan Yang, Lei Zhang, Lin Zhong, Qihua Yang* and **Can Li***, *Angewandte Chemie International Edition*, **2007**, 46: 6861-6865. (*citations: 98*)
- D-6 Mesoporous organic-inorganic hybrid materials built using polyhedral oligomeric silsesquioxane blocks, Lei Zhang, Hendrikus C. L. Abbenhuis, Qihua Yang*, Yimeng Wang, Pieter C. M. Magusin, Brahim Mezari,

Rutger A. van Santen* and **Can Li***, *Angewandte Chemie International Edition*, **2007**, 46: 5003-5006. (*citations: 56*)

- D-7 Asymmetric ring-opening of epoxides on chiral Co(Salen) catalyst synthesized in SBA-16 through the “ship in a bottle” strategy, Hengquan Yang, Lei Zhang, Weiguang Su, Qihua Yang* and **Can Li***, *Journal of Catalysis*, **2007**, 248: 204-212. (*citations: 51*)
- D-8 Enhancement of the performance of a platinum nanocatalyst confined within carbon nanotubes for asymmetric hydrogenation, Zhijian Chen, Zaihong Guan, Mingrun Li, Qihua Yang and **Can Li***, *Angewandte Chemie International Edition*, **2011**, 50: 4913-4917. (*citations: 45*)
- D-9 Oxygen evolution from water oxidation on molecular catalysts confined in the nanocages of mesoporous silicas, Bo Li, Fei Li, Shiyang Bai, Zhijun Wang, Licheng Sun, Qihua Yang* and **Can Li***, *Energy & Environmental Science*, **2012**, 5: 8229-8233. (*citations: 9*)
- D-10 Hydration of Epoxides on [Co^{III}(salen)] Encapsulated in Silica-Based Nanoreactors, Bo Li, Shiyang Bai, Xuefeng Wang, Mingmei Zhong, Qihua Yang*, **Can Li***, *Angewandte Chemie International Edition*, **2012**, 51, 11517-11521. (*citations: 9*)

E Ultra Deep Desulfurization

- E-1 Ultra-deep desulfurization of diesel: Oxidation with a recoverable catalyst assembled in emulsion, **Can Li***, Zongxuan Jiang, Jinbo Gao, Yongxing Yang, Shaojun Wang, Fuping Tian, Fuxia Sun, Xiuping Sun, Pinliang Ying, Chongren Han, *Chemistry-A European Journal*, **2004**, 10: 2277-2280. (*citations: 139*)
- E-2 Ultra-deep desulfurization of diesel by selective oxidation with [C₁₈H₃₇N(CH₃)₃]₄[H₂NaPW₁₀O₃₆] catalyst assembled in emulsion droplets, Hongying Lü, Jinbo Gao, Zongxuan Jiang, Fei Jing, Yongxing Yang, Gang Wang and **Can Li***, *Journal of Catalysis*, **2006**, 239: 369-375. (*citations: 127*)
- E-3 Hydrodesulfurization of 4,6-DMDBT on a multi-metallic sulfide catalyst with layered structure, Lu Wang, Yongna Zhang, Yuliang Zhang, Peng Liu, Hongxian Han, Min Yang, Zongxuan Jiang* and **Can Li***, *Applied Catalysis A: General*, **2011**, 394: 18-24. (*citations: 7*)
- E-4 42 Granted Patents (see CV)

VI. List of Granted Patents

A. Environment

1. Zhaobin Wei, Qin Xin, **Can Li**, Xiuping Sun, A non-presulphurizing catalyst for hydrodesulfurization, Chinese ZL98114280.x (1998).
2. Zhaobin Wei, **Can Li**, Qin Xin, Changhai Liang, An ammonium decomposition catalyst with super high activity, Chinese ZL98114265.6 (1998).
3. **Can Li**, Yan Liu, Zhaobin Wei, Pinliang Ying, Xiuping Sun, Mengfei Luo, A metal oxide catalyst for the catalytic oxidation removal of aromatic halides, Chinese ZL00110236.2 (2000).
4. **Can Li**, Yan Liu, Zhaobin Wei, Qin Xin, A combustion catalyst for the removal of aromatic halide contaminants, Chinese ZL00122988.5 (2000).
5. **Can Li**, Fuping Tian, Zongxuan Jiang, Pinliang Ying, Changhai Liang, Xiuping Sun, Fuxia Sun, A molecular sieve adsorbent for ultra-deep desulfurization and its preparation method, Chinese ZL02160814.8 (2002).
6. **Can Li**, Chongren Han, Zongxuan Jiang, Yan Liu, Xiuping Sun, An adsorbent for ultra-deep desulfurization of distillates, Chinese ZL02109886.7 (2002).
7. **Can Li**, Zongxuan Jiang, Jinbo Gao, Yongxing Yang, Fuping Tian, Xiuping Sun, Pinliang Ying, A preparation method for ultra-low sulfur diesels, Chinese ZL03107599.1 (2003).
8. **Can Li**, Jinbo Gao, Shouguo Wang, Zongxuan Jiang, An emulsion catalyst for ultra-deep desulfurization of diesels, Chinese ZL041006722.4 (2004).
9. **Can Li**, Fuxia Sun, Shaofang Lu, Yuangen Yao, Canzhong Lu, A hydrodesulfurization catalyst with sulfur-containing transition metal clusters, Chinese ZL0410009977.6 (2004).
10. Zongxuan Jiang, **Can Li**, A bulk sulfide catalyst for hydrodesulfurization and hydrodenitrogenation, Chinese ZL200510062483.9 (2005).
11. **Can Li**, Fei Jing, Zongxuan Jiang, An oxidation catalyst for deodorization of paraffin oil, Chinese ZL200510075406.7 (2005).
12. **Can Li**, Hongying Lu, Jinbo Gao, An oxidation-extraction desulfurization method for production of ultra low sulfur diesel, Chinese ZL200510073771.4 (2005).
13. **Can Li**, Hongying Lu, Fei Jing, Zongxuan Jiang, Jinbo Gao, A preparation method for deodorization of paraffin oil, Chinese ZL200610001691.2 (2006).
14. **Can Li**, Fei Jing, Hongying Lu, Zongxuan Jiang, A desulfurization method for production of ultra low sulfur diesel, Chinese ZL200610001376X (2006).

15. **Can Li**, Hongying Lu, Fei Jing, Zongxuan Jiang, Jinbo Gao, A preparation method for ultra low sulfur gasoline, Chinese ZL200610011979.8 (2006).
16. **Can Li**, Fei Jing, Zongxuan Jiang, Hongying Lu, An ultra low sulfur gasoline, Chinese ZL200610012057.9 (2006).
17. Zongxuan Jiang, **Can Li**, Yongna Zhang, Hongying Lu, An oxidative catalyst for ultra-deep desulfurization through oxidation-distillation, Chinese ZL200710176267.6 (2007).
18. **Can Li**, Zongxuan Jiang, Yuliang Zhang, Min Yang, Lu Wang, Yongxing Yang, A desulfurization adsorbent for C₄ olefins and its preparation, Chinese ZL200810240367.5 (2008).
19. **Can Li**, Haian Xia, Keju Sun, Zhaochi Feng, An Fe/ZSM-5 catalyst for the decomposition of N₂O, Chinese ZL200710178779.6 (2007).
20. **Can Li**, Zongxuan Jiang, Yongna Zhang, Hongying Lu, An oxidative desulfurization catalyst for ultra-deep desulfurization of diesel fuels, Chinese ZL200810013565.8 (2008).
21. **Can Li**, Zongxuan Jiang, Lu Wang, A composite metal oxide catalyst and its preparation and applications, Chinese ZL200810010795.9 (2008).
22. **Can Li**, Zongxuan Jiang, Lu Wang, Yongna Zhang, Yuliang Zhang, A multimetallic bulk catalyst with layered structure and method for preparation thereof, and application thereof, Chinese ZL200910259499.7 (2009).
23. **Can Li**, Zongxuan Jiang, Lu Wang, Composite metal oxide catalysis and method for preparation and application, US8,377,289 (2009).
24. Zongxuan Jiang, **Can Li**, Yongna Zhang, Hongying Lv, Catalyst for ultra-deep desulfurization of diesel via oxidative distillation, its preparation and desulfurization method, US 8,394,735 (2009)
25. Zongxuan Jiang, **Can Li**, Yongxing Yang, Yuliang Zhang, Ling Lan, Yana Ju, A adsorbent for desulfurization of gasoline and preparation and use of said adsorbent, Chinese ZL 201010289532.3 (2010).
26. **Can Li**, Zongxuan Jiang, Yongna Zhang, Hongying Lv, Boyu Zhang, Catalyst for desulfurization and deodorization of gasoline and method for preparation of the same and use, US 8,501,657 (2011).

B. Fine Chemicals and Chiral Chemicals

27. **Can Li**, Qihua Yang, Pinliang Ying, Qin Xin, A selective oxidation catalyst with highly isolated transition metal ions, Chinese ZL98114450.0 (1998).

28. **Can Li**, Changhai Liang, Zhaobin Wei, Qin Xin, Xiuping Sun, An ammonium synthesis catalyst with high activity and its preparation, Chinese ZL99112843.5 (1999).
29. **Can Li**, Qihua Yang, Jiqing Lu, Suli Wang, Qin Xin, Chemacal grafting method for the preparation of a selective oxidation catalyst with highly isolated transition metals, Chinese ZL98112957.1 (1999).
30. Zhongmin Liu, Jianqiang Yu, **Can Li**, Qin Xin, Lei Xu, Chenglin Sun, Tao Huang, A Ti-Si zeolite and its preparation method and applications, Chinese ZL99126307.3 (1999).
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