



Xinhe Bao

PERSONAL INFORMATION

Name: Bao, Xinhe
Nationality: China
Date of birth: 26 August 1959
Web site: <http://www.fruit.dicp.ac.cn>

EDUCATION AND PROFESSIONAL PREPARATION

1989–1991 Alexander von Humboldt Research Fellow in the Fritz-Haber-Institut der MPG, Germany
1987 Ph.D., Chemistry Department, Fudan University, China
1982 Bachelor's Degree, Chemistry Department, Fudan University, China

CURRENT POSITION(S)

2017– President, University of Science and Technology of China
2003– Dean, Department of Chemical Physics, University of Science and Technology of China
1995– Professor in the State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China

PREVIOUS POSITIONS

2015–2017 Executive Vice President, Fudan University, China
2009–2014 President of Shenyang Branch of Chinese Academy of Sciences, China
2000–2007 Director of Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China
1991–1995 Guest scientist at the Fritz-Haber- Institut der MPG, Germany
1987–1989 Lecturer in the Chemistry Department, Fudan University, China

FELLOWSHIPS AND AWARDS

2018 Tan Kah Kee Science Awards
2017 Alwin Mittasch Prize of the German Catalysis Society
2016 Honorary Fellow of the Royal Society of Chemistry
2016 Award for Excellence in Natural Gas Conversion
2016 5th Chemistry Contribution Prize of of Chinese Chemical Society-China Petroleum & Chemical Corporation
2015 Outstanding Science and Technology Achievement Prize of the Chinese Academy of Sciences
2015 Award in Basic Science from Zhou Guang Zhao Foundation
2014 Top 10 Science and Technology News in China for the work on methane direct conversion
2014 Top 10 Science Progresses in China for the work on methane direct conversion
2014 Distinguished University Visiting Professor, Hong Kong Baptist University
2012 Prize for Scientific and Technological Progress in Chemistry of Ho Leung Ho Lee Foundation
2012 Visiting Professor of National University of Singapore
2011 Member of TWAS
2011 IMNI Distinguished Lecturer of Brown University
2009 Member of the Chinese Academy of Science
2009 Fellow of the Royal Society of Chemistry
2009 Natural Science award of Liaoning Province (1st class) for the work on nanoconfined catalysis
2006 Honorary Chair in Chemistry and Chemical Engineering of the Queen's University of Belfast, UK 2005
2005 National Natural Science Award (2nd class) for the achievements in methane aromatization
1996 Distinguished Young Scientist from QiuShi Foundation, Hong Kong
1995 Distinguished Young Scientist Award from National Nature Science Foundation of China
1989 Alexander von Humboldt Research Fellow, Alexander von Humboldt Foundation, Germany

MEMBERSHIPS OF SCIENTIFIC SOCIETIES AND APPOINTMENTS

2012–2020 Member of the International Association of Catalysis Societies
2011–2013 IUPEC CHEMRAWN Committee Member (National Representative)

- 2011– Vice President of Chinese Society of Chemistry
 2012–2017 President of Chinese Society of Catalysis
 1998-2004 Chief Scientist of National Basic Research Program “Catalytic basis on optimal utilization of natural gas and coal-based methane”
 2002-2011 Principal Investigator of the BP-CAS “Clean Energy Facing the Future” Program
 2000-2004 Head of the Partner Group on “Nano-technology in Catalysis” between Fritz-Haber-Institut der MPG and the Dalian Institute of Chemical Physics
 2007-2015 Member of the advisory committee of the National Basic Research Program, the Chinese Ministry of Science and Technology
 2011-2017 Member of the advisory committee of Chemical Sciences Division, National Natural Science Foundation of China

COMMISSIONS OF TRUST

- Editor-in-Chief (with Prof. Gabriele Centi) of the Journal of Energy Chemistry (Elsevier)
 Associate Editor-in-Chief of the Chinese Journal of Chemical Physics
 Editorial Board Member, Surface Science Reports (Elsevier)
 International Advisory Board Member, Angewandte Chemie International Edition (Wiley)
 Advisory Board Member, Energy & Environmental Science (RSC)
 Advisory Board Member, Nano Energy (Elsevier)
 Advisory Board Member, Nano Research (Qinghua & Springer)
 International Advisory Board Member, The Chemical Record (Wiley)
 Editorial board members, Catalysis Science & Technology (RSC)
 International Advisory Board Member, ChemCatChem (Wiley)
 Editorial Advisory Board Member, ChemPhyChem (Wiley)
 Advisory Board Member, Chemical Science (RSC)
 Advisory Board Member, Energy Technology(Wiley)
 Executive Editorial Board Member, Chinese Journal of Chemistry(Wiley)
 Scientific Advisory Board Member, Catalysis Letter (Springer)
 Scientific Advisory Board Member, Topics in Catalysis(Springer)
 Advisory Board Member, Chemical Engineering & Technology(Wiley)
 Advisory Editorial Board Member, Surface Science (Elsevier)
 Advisory Board Member, Acta Physico-Chimica Sinica
 Editorial Board Member, Science China in Chemistry

RESEARCH INTERESTS:

Research activity focuses mainly on the surface chemistry and energy-related catalysis, including:

- Activation and conversion of methane
- Conversion of syngas (CO/H₂)
- Selective oxidation of hydrocarbons
- Selective oxidation of CO
- Surface chemistry and catalysis with single crystal model catalysts
- Catalysis of nano-confined systems, e.g. nano particles and porous materials
- Fuel cell related catalysis

MAJOR COLLABORATIONS

- | | |
|---------------------------------------------|----------------------------------------------|
| G. Ertl, Fritz-Haber Institute, Berlin | R. Schloegl, Fritz-Haber Institute, Berlin |
| G. W. Searle, BP, London | K. Sanden, the Queen’s University of Belfast |
| P. J. Hu, the Queen’s University of Belfast | U. Mueller, BASF, Ludwigshafen |
| M. Muhler, Bochum University, Bochum | Y. Wang, PNNL, Richland |
| S. B. Zhang, NRNL, Denver | A. Wodtke, UCSB, Santa Barbara |
| M. Lu, University of Queensland, Brisbane | S. Scott, UCSB, Santa Barbara |
| J. G. Chen, Columbia University, New York | |

RESEARCH PUBLICATIONS

More than 600 research articles in peer reviewed Journals: 3 Science, 1 Nature Materials, 1 Nature Nanotechnology, 3 Nature Communications, 3 Proceedings of the National Academy of Sciences of the United States of America (PNAS), 3 Accounts of Chemical Research, with a citation over 14000 times..

List 20 of Most Significant Publications:

20. Selective conversion of syngas to light olefins
Feng Jiao, Jinjing Li, Xiulian Pan*, Jianping Xiao, Haobo Li, Hao Ma, Mingming Wei, Yang Pan, Zhongyue Zhou, Mingrun Li, Shu Miao, Jian Li, Yifeng Zhu, Dong Xiao, Ting He, Junhao Yang, Fei Qi, Qiang Fu, **Xinhe Bao***
Science, 351(2016) (6277) 1065-1068
19. Direct, Non-Oxidative Conversion of Methane to Ethylene, Aromatics, and Hydrogen
Xiaoguang Guo, Guangzong Fang, Gang Li, Hao Ma, Hongjun Fan, Liang Yu, Chao Ma, Xing Wu, Dehui Deng, Mingming Wei, Dali Tan, Rui Si, Shuo Zhang, Jianqi Li, Litao Sun, Zichao Tang, Xiulian Pan, **Xinhe Bao***
Science, 344(2014) 616-619
18. Interface-Confined Ferrous Centers for Catalytic Oxidation
Qiang Fu, WeiXue Li, Yunxi Yao, Hongyan Liu, HaiYan Su, Ding Ma, XiangKui Gu, Limin Chen, Zhen Wang, Hui Zhang, Bing Wang, **Xinhe Bao***
Science, 328(2010) 1141-1144
17. Catalysis with two-dimensional materials and their heterostructures
Dehui Deng, K. S. Novoselov*, Qiang Fu, Nanfeng Zheng, Zhongqun Tian*, **Xinhe Bao***
Nature Nanotechnology, 11(2016) 218–230
16. Enhanced ethanol production inside carbon-nanotube reactors containing catalytic particles
Xiulian Pan, Zhongli Fan, Wei Chen, Yunjie Ding, Hongyuan Luo, **Xinhe Bao***
Nature Materials, 6(2007)507-511
15. Silicon carbide-derived carbon nanocomposite as a substitute for mercury in the catalytic hydrochlorination of acetylene
Xingyun Li, Xiulian Pan*, Liang Yu, Pengju Ren, Xing Wu, Litao Sun, Feng Jiao, **Xinhe Bao***
Nature Communications, 5(2014) 1-7
14. Interface-confined oxide nanostructures for catalytic oxidation reactions
Qiang Fu*, Fan Yang, **Xinhe Bao***
Accounts of Chemical Research, 46(2013) (8) 1692-1701
13. The effects of confinement inside carbon nanotubes on catalysis
Xiulian Pan*, **Xinhe Bao***
Accounts of Chemical Research, 44(2011) (8) 553-562
12. Size-Dependent Electrocatalytic Reduction of CO₂ over Pd Nanoparticles
Dunfeng Gao, Hu Zhou, Jing Wang, Shu Miao, Fan Yang, Guoxiong Wang, Jianguo Wang, **Xinhe Bao**
Journal of the American Chemical Society, 137(2015) 4288–4291
11. Towards fundamentals of confined catalysis in carbon nanotubes
Jianping Xiao, Xiulian Pan, Shujing Guo, Pengju Ren, **Xinhe Bao**
Journal of the American Chemical Society, 137(2015) (1) 477-482
10. Enhanced Electron Penetration through a Ultrathin Graphene Layer for Highly Efficient Catalysis of Hydrogen Evolution Reaction
Jiao Deng, Pengju Ren, Dehui Deng*, **Xinhe Bao***
Angewandte Chemie-International Edition, 54(2015) (7) 2100–2104

9. Graphene cover promoted metal catalyzed reactions
Yunxi Yao, Qiang Fu*, Yuyang Zhang, Xuefei Weng, Huan Li, Mingshu Chen, Li Jin, Aiyi Dong, Rentao Mu, Peng Jiang, Li Liu, Hendrik Bluhm, Zhi Liu, Shengbai Zhang, **Xinhe Bao**
Proceedings of the National Academy of Sciences of the United States of America, **111(2014)**
(48) 17023-17028
8. Highly active and durable non-precious-metal catalyst encapsulated in carbon nanotubes for hydrogen evolution reaction
Jiao Deng, Pengju Ren, Dehui Deng*, Liang Yu, Fan Yang, **Xinhe Bao***
Energy & Environmental Science, **7(2014) 1919-1923**
7. Tuning the redox activity of encapsulated metal clusters via the metallic and semiconducting character of carbon nanotubes
Fan Zhang, Xiulian Pan*, Yongfeng Hu, Liang Yu, Xiaoqi Chen, Peng Jiang, Hongbo Zhang, Shibin Deng, Jin Zhang, Trudy B. Bolin, Shuo Zhang, Yuying Huang, **Xinhe Bao***
Proceedings of the National Academy of Sciences of the United States of America, **110(2013)**
14861-14866
6. Iron encapsulated within Pod-like carbon nanotubes for oxygen reduction reaction
Dehui Deng, Liang Yu, Xiaoqi Chen, Guoxiong Wang, Li Jin, Xiulian Pan*, Jiao Deng, Gongquan Sun, **Xinhe Bao***
Angewandte Chemie-International Edition, **52(2013) (1) 371-375**
5. Visualizing chemical reactions confined under graphene
Rentao Mu, Qiang Fu, Li Jin, Liang Yu, Guangzong Fang, Dali Tan, **Xinhe Bao***
Angewandte Chemie-International Edition, **51(2012) 4856-4859**
4. Toward N-doped graphene via solvothermal synthesis
Dehui Deng, Xiulian Pan, Liang Yu, Yi Cui, Yeping Jiang, Jing Qi, Wei-Xue Li, Qiang Fu, Xucun Ma, Qikun Xue, Gongquan Sun, **Xinhe Bao***
Chemistry of Materials, **23(2011) 1188-1193**
3. Effect of the confinement in carbon nanotubes on the activity of Fischer-Tropsch iron catalyst
Wei Chen, Zhongli Fan, Xiulian Pan, **Xinhe Bao***
Journal of the American Chemical Society, **130(2008) (29) 9414-9419**
2. Tuning of redox properties of iron and iron oxides via encapsulation within carbon nanotubes
Wei Chen, Xiulian Pan, **Xinhe Bao***
Journal of the American Chemical Society, **129(2007) (23) 7421-7426**
1. Towards Monodispersed Silver Nanoparticles with Unusual Thermal Stability
Junming Sun, Ding Ma, He Zhang, Xiumei Liu, Xiuwen Han, **Xinhe Bao***, Gisela Weinberg, Norbert Pfaender, Dangsheng Su
Journal of the American Chemical Society, **128(2006) (49) 15756-15764**