陈艳霞

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出生: 1971年9月，中国湖南

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学习和工作经历：

1. 1989.9 – 1993.7，厦门大学化学系，学士学位 无机化学专业；

2. 1993.9 – 1998.10，厦门大学化学系，博士学位，物理化学专业；

3. 1999.3 – 2000.12，德国杜塞尔多夫大学表面和凝固态材料研究所（A. Otto教授），洪堡学者；

4. 2001.1 - 2001.12，慕尼黑工业大学物理系界面和能量转换研究所（U. Stimming教授），博士后；

5. 2002.1 - 2002.3，日本北海道大学催化研究中心界面和光谱电化学实验室（M. Osawa教授），日本北海道大学文部省中核机构COE研究员；

6. 2002.4 - 2006.12，德国乌尔姆大学表面化学和催化研究所 (R. J. Behm教授)博士后+洪堡学者；

7. 2007.1 – 至今，中国科技大学化学物理系，合肥微尺度物质科学国家实室，教授，博士生导师。

获奖情况：

1. 电化学青年奖，中国电化学会，2011.10

2. 青年学者奖学金，德国洪堡基金会, 1999. 7- 2000.12，2002.7 - 2002.9

3. 日本文部省COE奖学金

研究方向:

表面电化学、光谱电化学和电催化，着重于电化学界面结构、燃料电池以及生物电化学相关的电催化反应机理和动力学的基础研究以及相关研究技术的开发。

在研项目:

1. Pt单晶/质子导体固体电解质模型界面的结构、物质输运以及氧还原动力学研究，国家自然基金委面上项目(编号:21972131, 2020-2023)

2. 氧电催化体系表界面结构及过程的动态谱学与理论模拟解析，国家自然基金委重点项目(编号:21832004, 2019-2023)

3. 质子电子转移反应的pH效应研究，国家自然基金委面上项目(编号:21872132, 2019-2022)

4. 协同增强效应在酸性氧还原反应中的应用，国家自然基金委海外合作项目(编号:21828201, 2019-2020)

已完成的项目：

1. 基于气体扩散电极的电化学原位红外光谱与微分质谱联用技术及其在CO2电催化还原中的应用, 国家自然基金委重大项目培育项目(编号:91545124, 2016-2018)

2. 面向车用燃料电池的纳米-介观-宏观多级结构的电催化体系的研究, 973 重大科学研究计划子课题: 结构明确的高活性电催化剂纳米结构基元的合成(编号2015CB932301，2014-2019)

3. Pt系单晶电极上氧还原反应超电势的起源研究, 国家自然基金面上项目 (编号：21473175, 2015-2018)

4. 等离子基元增强拉曼光谱仪器的研发与应用子课题，PERS在电化学基础研究中的应用，国家重大科学仪器设备开发专项(编号：2011YQ03012416 2012-2016)

5. 电化学微分质谱与红外光谱联用技术及其在燃料电池电催化中的应用, 国家自然基金面上项目 (编号：21273215，2013-2016)

6. 基于同步辐射光源的电化学红外光谱研究甲醇的电催化氧化, 同步辐射国家实验室联合项目,2015-2017.

7. 基于分子和分子体系的量子调控子课题,电极过程的量子调控, 973 重大科学研究计划 (编号2010CB923302，2009-2014)

8. 中国科技大学海外优秀留学人才启动基金(2007-2009)

9. 在可控的温度及传质下甲醇氧化的电化学原位红外光谱研究, 国家自然科学基金委面上项目(项目批准号：20773116, 2008-2010)。

10. 低铂担载甲醇氧化电催化剂结构-性能关系研究, 德国洪堡基金会回国后续支持项目(2007-2009)）

11. 用于甲醇阳极氧化的低维纳米复合电催化剂的制备及性能表征, 厦门大学固体表面物理国家重点实验室开放课题 (2008-2009)

12. 中国科院人才计划(2009-2011)

13. 石墨烯上金属钠米粒子的构筑及其电催化活性研究, 厦门大学固体表面物理国家重点实验室开放课题（2010-2011）

14. 谱学电化学在电催化中的应用, 教育部留学回国人员启动基金(2010-2012)

15. 铂基氧还原催化剂性能改善机理研究, 国家自然科学基金委面上项目(项目批准号：21073176，2011-2013).

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Educational Background and Work Experience:

1. 1989.9 – 1993.7: Bachelor’s Degree in Inorganic Chemistry from the Department of Chemistry of Xiamen University

2. 1993.9 – 1998.10: Ph.D. in Physical Chemistry from the Department of Chemistry of Xiamen University

3. 1999.3 – 2000.12: Humboldt Scholar at the Institute of Surface and Solid State Materials Research (Prof. A. Otto), University of Düsseldorf

4. 2001.1 - 2001.12: Postdoctoral Researcher at the Institute of Interface and Energy Conversion (Prof. U. Stimming), Department of Physics, Technical University of Munich

5. 2002.1 - 2002.3: COE Researcher at the Laboratory of Interface and Spectroelectrochemistry (Prof. M. Osawa), Catalysis Research Center, Hokkaido University

6. 2002.4 - 2006.12: Postdoctoral Researcher and Humboldt Scholar at the Institute of Surface Chemistry and Catalysis (Prof. R. J. Behm), University of Ulm

7. 2007.1 – Present: Professor and Doctoral Supervisor at Hefei National Laboratory for Physical Sciences at the Microscale, Department of Chemical Physics, University of Science and Technology of China

Awards:

1. Young Electrochemist Award, Chinese Society of Electrochemistry, October 2011

2. Humboldt Research Fellowship for Young Scholars, Alexander von Humboldt Foundation, July 1999 - December 2000, July 2002 - September 2002

3. COE Fellowship, Ministry of Education, Japan

Research Directions:

Surface Electrochemistry

Spectroelectrochemistry and Electrocatalysis

Structure of electrochemical interfaces

Mechanisms and dynamics of electrocatalytic reactions related to fuel cells and bioelectrochemistry

Development of relevant research techniques

Current Projects:

1. Study on the structure, material transport, and oxygen reduction dynamics of Pt single crystal/proton conductor solid electrolyte model interfaces, General Project of the National Natural Science Foundation of China (Grant No. 21972131, 2020-2023)

2. Dynamic spectroscopy and theoretical simulation analysis of surface interface structures and processes in oxygen electrocatalytic systems, Key Project of the National Natural Science Foundation of China (Grant No. 21832004, 2019-2023)

3. Study on the pH effect of proton-electron transfer reactions, General Project of the National Natural Science Foundation of China (Grant No. 21872132, 2019-2022)

4. Application of synergistic enhancement effect in acidic oxygen reduction reactions, Overseas Cooperation Project of the National Natural Science Foundation of China (Grant No. 21828201, 2019-2020)

Completed Projects:

1. Development and application of an in-situ electrochemical infrared spectroscopy and differential mass spectrometry technique based on gas diffusion electrodes for the electrocatalytic reduction of CO2, Major Project of the National Natural Science Foundation of China (Grant No. 91545124, 2016-2018)

2. Research on electrocatalytic systems with multi-level structures for automotive fuel cells, Sub-project of the National Basic Research Program of China (973 Program): Synthesis of high-activity electrocatalyst nanostructure elements with clear structures (Grant No. 2015CB932301, 2014-2019)

3. Study on the origin of overpotential for oxygen reduction reactions on Pt single crystal electrodes, General Project of the National Natural Science Foundation of China (Grant No. 21473175, 2015-2018)

4. Development and application of a Raman spectrometer enhanced by plasmonic elements in electrochemical fundamental research, National Key Scientific Instrument and Equipment Development Project (Grant No. 2011YQ03012416, 2012-2016)

5. Electrochemical infrared spectroscopy and differential mass spectrometry technique and its application in fuel cell electrocatalysis, General Project of the National Natural Science Foundation of China (Grant No. 21273215, 2013-2016)

6. Synchrotron radiation-based electrochemical infrared spectroscopy study of methanol electro-oxidation, Joint Project of the National Synchrotron Radiation Laboratory, 2015-2017

7. Quantum control of electrode processes, sub-project of quantum control of molecular and molecular systems, National Basic Research Program of China (973 Program) (Grant No. 2010CB923302, 2009-2014)

8. Startup Fund for Outstanding Overseas Returnees, University of Science and Technology of China (2007-2009)

9. In-situ electrochemical infrared spectroscopy study of methanol oxidation under controlled temperature and mass transfer conditions, General Project of the National Natural Science Foundation of China (Grant No. 20773116, 2008-2010)

10. Study on the structure-performance relationship of low-platinum methanol oxidation electrocatalysts, Follow-up Support Project of the Alexander von Humboldt Foundation (2007-2009)

11. Preparation and performance characterization of low-dimensional nanocomposite electrocatalysts for methanol anode oxidation, Open Project of the State Key Laboratory of Physical Chemistry of Solid Surfaces, Xiamen University (2008-2009)

12. Talent Program of Chinese Academy of Sciences (2009-2011)

13. Construction and electrocatalytic activity study of metal nanoparticles on graphene, Open Project of the State Key Laboratory of Physical Chemistry of Solid Surfaces, Xiamen University (2010-2011)

14. Application of spectroelectrochemistry in electrocatalysis, Startup Fund for Returnees, Ministry of Education (2010-2012)

15. Study on the mechanism of performance improvement of platinum-based oxygen reduction catalysts, General Project of the National Natural Science Foundation of China (Grant No. 21073176, 2011-2013)