

## Prof. Kevin Huang, Ph.D



SmartState Chair  
Director of SmartState Center for Solid Oxide Fuel Cells  
Department of Mechanical Engineering  
University of South Carolina  
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### EDUCATION:

Ph.D. in Physical Chemistry (1992), University of Science and Technology Beijing  
M.S. in Physical Chemistry (1989), Northeastern University, Shenyang, P. R. China  
B. S. in Physical Chemistry (1986), Northeastern University, Shenyang, P. R. China

### EXPERIENCE:

- 12/2017-present: **SmartState Chair Professor**, Director of Solid Oxide Fuel Cell Center of Excellence, **University of South Carolina**
- 1/2015-present: **Professor**, Department of Mechanical Engineering, **University of South Carolina**
- 1/2010-12/2014: **Associate professor**, Department of Mechanical Engineering, University of South Carolina
- Research Interest: Solid oxide fuel cells (SOFCs) materials; storage batteries; gas separation membranes; solid-state electrochemistry; defect chemistry; multiscale computational modeling
- 1/2009-12/2009: **Fellow engineer**, Cells and Bundles Technology, **Siemens Energy**
- 1/2005-12/2008: **Principal Engineer**, Cells and Bundles Technology, Siemens Power Generation
- 9/2000-12/2004: **Senior engineer**, Cells and Bundles Technology, **Siemens Westinghouse Power Generation**
- Research Interest: Product development of cathode-supported HPD tubular SOFCs; advanced SOFC materials; SOFC component cost-effective fabrication; cell power enhancement through advanced materials and geometries; zero emission SOFC power plants
- 4/1995-8/2000: **Postdoctoral fellow** in Texas Materials Institute, **The University of Texas at Austin**

Research Interest: Intermediate-temperature oxide-ion conductors and mixed oxide-ion/electron conductors; oxygen transport membranes; metallic interconnects

9/1993-4/1995: **Assistant and Associate Professor**, Laboratory for Solid State Ionics, University of Science and Technology Beijing  
Research Interest: Oxygen sensors for steelmaking process; environmental sensors for SO<sub>x</sub>, NO<sub>x</sub> and CO<sub>x</sub>

1/1989-6/1992: **Ph.D. student**, University of Science and Technology Beijing  
Research Interest: Fundamentals and applications of direct electrochemical oxygen determination in gases and melts

### ACHIEVEMENTS:

- Recipient of 2018 Breakthrough Leadership in Research Award
- Recipient of 2017 Educational Foundation Award for Research in Science, Mathematics and Engineering
- Recipient of 2015 College of Engineering and Computing Research Achievement Award
- Recipient of 2014 University of South Carolina Breakthrough Stars
- Siemens Special Employee Recognition Award 2007
- Siemens SFC, Employee of the Year Award 2006
- Siemens Spot Awards 2005-2007
- Science and Technology Achievement Award, 2<sup>nd</sup> prize, State Education Committee of China, 1994
- Excellent Ph. D. Thesis Award, University of Science & Technology Beijing, 1992
- Best Scientific Paper Award, Chinese Ceramic Society, 1991

### PROFESSIONAL ACTIVITIES:

- Associate editor of Journal of Electrochemical Energy Conversion and Storage, 2015-present
- Associate editor of RSC Advances, 2015- 2017
- Chair of Seminar Committee, Department of Mechanical Engineering, University of South Carolina, 9/2014 – present
- Member of College of Engineering Scholarship Committee, 1/2014 – 3/2016
- College of engineering library liaison, 1/2013 – present
- Member of Advisor Board of Electron Microscopy, 9/2012 – present
- Member of Lab Safety Committee, Department of Mechanical Engineering, 2013-present
- Session chair of Symposium on Advances in Materials Science, Processing and Engineering for Fuel Cells and Electrolyzers, 2014 MRS Fall Meeting & Exhibit, Boston, December 1-5, 2014
- Panel moderator and co-organizer of Alternative Applications of Natural Gas workshop, sponsored by AIChE and DOE, Washington DC, October 8-9, 2014
- Session chair of Symposium of Multifunctional Oxides, MS&T, Pittsburgh, October 12-16, 2014

- Organizer and session chair of Symposium on Materials and Processes for CO<sub>2</sub> Capture and Conversion, MS&T, Salt Lake City, October 26-28, 2016
- Organizer and session chair of Symposium on Materials and Processes for CO<sub>2</sub> Capture and Conversion, MS&T, Columbus, October 5-7, 2015
- Organizer and session chair of Symposium on Materials and Processes for CO<sub>2</sub> Capture and Conversion, MS&T, Pittsburgh, October 12-16, 2014
- Organizer and session chair of Symposium on Materials and Processes for CO<sub>2</sub> Capture and Conversion, MS&T, Montreal, October 27-31, 2013
- Session chair, 222<sup>th</sup> Electrochemical Society Meeting, Hawaii, October 7-12, 2012
- Session chair, 220<sup>th</sup> Electrochemical society meeting, Boston, October 10-14, 2011
- NSF proposal panelist, 2010-present
- Visiting professor, China University of Mining Technology Beijing, 2011-2015
- Visiting professor, Harbin Institute of Technology, 2013-now
- Visiting professor, Huazhong University of Science and Technology, 2012-now
- Active member of American Electrochemical Society
- Active member of American Ceramic Society
- Active member of American Chemical Society
- Active membrane of American Society of Mechanical Engineering

#### **GRADUATE AND POSTDOCTORAL ADVISORS:**

- Thesis advisor for graduate students:

##### **Current:**

Grace Fang (PhD), Jay Neutzler (PhD), Paul Wach (PhD), Tianrang Yang (PhD), Yeting Wen (PhD), Vicky Mattick (PhD)

##### **Graduated:**

Lingling Zhang (PhD) – Senior engineer at General Electric

Xuan Zhao (PhD) – Officer at Texas State Environmental Protection Office

Ray Xiong (PhD) – Engineer at Maik Technology, Shenzhen, China

Kevin Romito (MS) - Project Manager and Product Development at Nephros, Inc.

Farzana Yasmeen (MS) – PhD student at University of South Carolina

Ashan Uddin (MS) - PhD student at University of South Carolina

Nansheng Xu (exchange PhD) - Postdoctoral fellow at University of South Carolina

Jingjing Tong (exchange PhD) – Postdoc at University of South Carolina

- Sponsor for postdoctoral fellows:

##### **Current:**

Xinfang Jin, Peng Zhang, Nansheng Xu, Wei Fang, Kaiyue Zhu, Tao Wu, Jungu Xu

##### **Past:**

Xue Li- Project manager at Kuang-chi Institute of Technology, China

Zhengping Mao- Project manager at Sulzer-Metco

Qunwei Tang- Professor at China Ocean University, China

Tao Wei- Professor at Jinan University, China

Yunhui Gong- Postdoctoral fellow at University of Maryland

Yaoyu Ren - Postdoctoral fellow at University of Maryland

Fengzhan Si- Postdoctoral fellow at Benedict College

Youngseok Jee – Senior scientist at National Energy Technology Laboratory, Pittsburgh, PA

Xueling Lei – Professor at Jiangxi Normal University, Nanchang, China  
Jie Wang – Scientist at Beijing Institute of Nanomaterials, Beijing, China  
Cuijuan Zhang – Professor at Tianjin University, Tianjin, China  
Xingyan Xu – Professor at Beijing University of Chemical Technology, Beijing, China  
Zhixiang Xie – Professor at Jiangxi Jingdezhen Ceramic University, Jingdezheng, Chia

## **COURSES TAUGHT**

- **Undergraduate course:**  
Mechanical Engineering Laboratory II, EMCH362, core course of ME major, 2010-present, offered in both spring and fall semesters
- **New graduate courses created:**
  1. Dense ceramic gas separation membranes, EMCH791B, 2011 spring semester
  2. Defect chemistry, EMCH791C
  3. Energy storage, EMCH780
  4. Advanced engineering thermodynamics, EMCH794