

# Lifeng Zhang

## Work address:

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## ACADEMIC EXPERIENCE

- Ph.D. Metallurgical Engineering, March 1998, University of Science and Technology Beijing  
B.S. Metallurgical and Materials Engineering, July 1993, Chongqing University, China

## WORK EXPERIENCE

- 07/16-08/16 Visiting Professor, Department of Materials Science and Engineering, Carnegie Mellon University  
01/16-02/16 Royal Academy of Engineering (RAEng) Distinguished Visiting Fellow (DVF1516\3\36) at Warwick Manufacturing Group (WMG) of University of Warwick  
12/11 – now Dean and Professor, Department of Metallurgical and Ecological Engineering, University of Science and Technology Beijing (USTB)  
01/14 – now Coordinator of the International Collaboration Base of Green Recycling and Extraction of Metals  
10/13 – now Coordinator of the Beijing Key Laboratory of Green Recycling and Extraction of Metals  
09/11 – 12/11 Associate Professor (Tenured), Department of Materials Science and Engineering, Missouri University of Science and Technology  
01/08 – 08/11 Assistant Professor, Department of Materials Science and Engineering, Missouri University of Science and Technology  
10/05 – 12/07 Professor, Department of Materials Science & Engineering, Norwegian University of Science & Technology (NTNU), Norway  
03/01 – 10/05 Research Associate / Scientist, Department of Mechanical & Industrial Engineering, University of Illinois at Urbana-Champaign  
08/00 – 02/01 Postdoctoral Researcher, Institute für Metallurgy, Technical University of Clausthal, Germany  
08/98 – 07/00 Postdoctoral Fellow of Japan Science Promotion Society at Tohoku University, Japan

## PROFESSIONAL HONORS AND AWARDS

- 2017 Outstanding Contribution Award, Journal of Iron and Steel Research International, China

2017	China National Funds for Distinguished Young Scientists, National Natural Science Foundation of China (NSFC), China
2017	Richard J. Fruehan <b>Award Award</b> , Association for Iron & Steel Technology (AIST)
2016	Guaghua Engineering Scientific Award, Chinese Academy of Engineering, China
2014	National Innovation Young Leader, Ministry of science and technology, China
2014	Yangtze River Scholars - Distinguished Professor, Ministry of education, China
2012	The Honorable Mention – Early Career Faculty Fellow Award of TMS
2012	The Recruitment Program of Global Experts: Receiver of Thousand Youth Talents Plan, the Central Organization Department, China
2010	Missouri S&T 2010 Faculty Research Award
2010	Jerry Silver Best Paper Award, Association for Iron & Steel Technology (AIST)
2009	Continuous Casting Award Best Paper, AIST
2007	TMS Young Leader in Light Metals, TMS Society
2001	Steelmaking Conference Best Paper Award, Iron and Steel Society

## RESEARCH FIELDS

1. Clean steel and inclusions
2. Modeling for process metallurgy of metals
3. Refining and recycling of aluminum and solar-grade silicon, Recycling of electronic wastes;

## PROFESSIONAL SERVICE AND SOCIETY MEMBERSHIPS

### Member of:

Cockerill Maintenance & Engineering (CMI Group)  
The Chemical Industry and Engineering Society of China (IESC)  
Chinese Society of Metals (CSM)  
Association for Iron and Steel Technology (AIST)  
The Minerals, Metals and Materials Society (TMS)  
The Iron and Steel Institute of Japan (ISIJ)  
Institute of Electrical and Electronics Engineers (IEEE)  
Association for Metallurgical Reaction Engineering of China Nonferrous Metals Society  
Association for Special metallurgy of China Nonferrous Metals Society

### Service for Societies:

- Chair of Process Technology and Modeling Committee of TMS, 2011-2012
- Vice Chair of Young Metallurgist Committee of CSM, 2012-now

### Conference Organizer/Co-organizer

- *Symposium of Electronic Recycling, TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.*

- *Symposium of Inclusions and Clean Steels*, Materials Science and Technology 2008, Pittsburgh, PA, October 25-29, 2009.
- *Jim Evans Honorary Symposium, TMS2010* - 139th Annual Meeting & Exhibition, Seattle, WA, February 14 - 18, 2010. (Co-organizer)
- *Introduction of R&D Group in Iron and Steel*, AISTech 2010, Pittsburgh, PA, May 3-6, 2010.
- *The Secondary Symposium on Electronic Wastes Recycling, TMS 2011 Annual Meeting*, San Diego, CA, February 27 - March 3, 2011.
- *Symposium of Sensors, Sampling, and Simulation for Process Control, TMS 2011 Annual Meeting*, San Diego, CA, February 27 - March 3, 2011. (Co-organizer)
- *Symposium on Inclusions and Clean Steel, AISTech 2011*, Indianapolis, IN, May 2-5 2011
- *Production, Recycling and Recovery of Rare Earth Metals, TMS 2012 Annual Meeting*, Orlando, FL, March 11-15, 2012. (Organizer)
- *CFD Modeling and Simulation in Materials Processing, TMS 2012 Annual Meeting*, Orlando, FL, March 11-15, 2012. (Co-organizer)
- *Materials Processing Fundamentals, TMS 2012 Annual Meeting*, Orlando, FL, March 11-15, 2012. (Organizer)
- *Production, Recycling and Recovery of Rare Earth Metals, TMS 2013 Annual Meeting*, San Antonio, TX, March 1-7, 2013. (Organizer)
- *Materials Processing Fundamentals, TMS 2013 Annual Meeting*, San Antonio, TX, March 1-7, 2013. (Organizer)
- *Symposium of Inclusion Engineering and Clean Steels, AISTech 2013*, Pittsburgh, May 6-9, 2013
- *Symposium of Fundamentals of Materials Processing, TMS 2014 Annual Meeting*, San Diego, Feb. 16-21, 2014
- *Symposium of Fundamentals of Materials Processing, TMS 2015 Annual Meeting*, Orlando, March 15-19, 2015
- *Symposium of Fundamentals of Materials Processing, TMS 2016 Annual Meeting*, Orlando, Feb. 14-18, 2016, Nashville,
- *CFD Modeling and Simulation in Materials Processing, TMS 2014 Annual Meeting*, Orlando, Feb. 14-18, 2016, Nashville,
- *Applications of Solidification Fundamentals, TMS 2017 Annual Meeting*, San Diego, , USA, Feb.26-Mar.2, 2017, CA

Service for Conferences:

- Member of Recycling and Environmental Technologies Committee of TMS since 2009
- Member of Energy Committee of TMS since 2010
- Paper Chair, Metallurgy-Processing, Products and Applications Technology Committee of AIST, 2009-2010
- Member of Process technology and Modeling Committee of TMS since 2011
- Paper chair of Recycling and Environmental Technologies Committee of TMS, 2010-2011
- Paper chair of Energy Committee of TMS, 2010-2011

Committee Member for Conferences:

- A member of the International Program Committee (IPC) for *The IASTED (International Association of Science and Technology for Development) International Conference on Solar Energy(SOE 2009)*, Phuket, Thailand, March 16 – 18, 2009.
- Scientific Advisory Member for *The 2<sup>nd</sup> International Symposium on Cutting Edge of Computer Simulation of Solidification and Casting (CSSC2010)*, Hokkaido University, Sapporo, Japan, February 3-5, 2010.
- A member of the International Program Committee (IPC) for *the IASTED International Conference on Solar Energy (SOE 2010)*, Banff, Canada, July 15 – 17, 2010.
- Member of Conference Planning Committee, AISTech 2010, Pittsburgh, PA, May 3-6, 2010.
- Member of the International Program Committee of SIMULTECH 2011 - “1st International Conference on Simulation and Modeling Methodologies, Technologies and Applications”, Noordwijkerhout, the Netherland, July 29-31, 2011
- USA regional Chair, 10<sup>th</sup> International Conference on Eco-Materials (ICEM-10), Shanghai, November 21-24, 2011
- A member of the International Program Committee (IPC) for *The IASTED (International Association of Science and Technology for Development) on Power and Energy Systems and Applications - PESA 2011*, Pittsburgh, USA, November 7 – 9, 2011
- Scientific Advisory Member for the 3<sup>rd</sup> International Symposium on Cutting Edge of Computer Simulation of Solidification, Casting and Refining” (CSSCR2013), May 20 to 23, 2013, KTH, Stockholm, Sweden & Aalto University, Helsinki, Finland.
- Member of International Advisory Committee in International Conference on Processing of Lean Grade and Urban Ores (IC-LGO 2015), January 20-22, 2015, CSIR-NML, Jamshedpur, India. Web page <http://ic-lgo2015.nmlindia.org/>
- The 6th International Congress on the Science and Technology of Steelmaking (ICS2015), Beijing, China. May 12-14, 2015. Member of Technical Organizing Committee.
- Member of our International Advisory Committee (IAC). The 10th International Conference on Molten Slags, Fluxes and Salts (Molten16) will be held in Seattle, Washington on May 22–25, 2016.
- Member of International Advisory Board, SCANMET V-5th International Conference on Process Development in Iron and Steelmaking including 2nd International Process Integration Forum for the Steel Industry. June 12-15, 2016, Luleå, Sweden
- International Advisory Committee for the 10th International Conference on Molten Slags, Fluxes, and Salts, Seattle, Washington on May 22–25, 2016
- Scientific Advisory Members for the 4th International Symposium on Cutting Edge of Computer Simulation of Solidification, Casting and Refining (CSSCR2016), Xi'an, China, May 11 - 14, 2016.
- Scientific Committee for the 4th UK-China Steel Research Forum, Chongqing, China, April 22-24, 2016.
- Chair for the Technical Committee of STEELSIM2017, Qingdao, China, August 16-18, 2017
- Member of the International Advisory Board, the 3rd International conference on Science and Technology of Ironmaking and Steelmaking (STIS-2017), Kanpur, India, December 11th-14th , 2017.

- Member of scientific committee of the European Continuous Casting Conference (ECCC2017), June 26-29, 2017, Vienna, Austria
- Member of International Committee, 10th International Conference on Clean Steel, September 18 – 20, 2018, Budapest, Hungary
- Member of International Advisory Board, The 7th International Congress on Science and Technology of Steelmaking (ICS 2018). June 13-15, 2018, Venice – Italy
- Member of Scientific Program Committee, The 8th International Congress on the Science and Technology of Ironmaking (ICSTI 2018), September 25-27, 2018 in Vienna, Austria.

#### Session Chair at International Conferences:

- Session: Process Technology-Computer Modeling III, *ISS Tech 2003 Technology Conference*, Indianapolis, IN, April 27-30, 2003.
- Session: Metallurgical Fundamentals, *CFD 2005- Fourth International Conference on Computational Fluid Dynamics in the Oil and Gas, Metallurgical & Process Industries*, Trondheim, Norway, June 6-8, 2005.
- Session: Continuous Casting, *2005 National Iron and Steel Conference of China*, Beijing, China, October 27, 2005.
- Sessions: 1) General abstract: Light Metals; 2) Cast shop operation, *TMS 2007 Annual Meeting*, Orlando, FL, February 25 –March 1, 2007
- Session: Process and Product Metallurgy I, *AISTech 2008*, Pittsburgh, PA, May 5-8, 2008.
- Session: Material Testing and Characterization, *Materials Science and Technology 2008*, Pittsburgh, PA, October 6-9, 2008.
- Session: General Recycling and Solid Waste Processing: Non-Ferrous Metals V, *Global Symposium on Recycling, Waste Treatment and Clean Technology - Rewas2008*, Cancun, Mexico, October 15, 2008.
- Session: Hydrometallurgical Recycling, *Symposium on Recycling of Electronic Wastes, TMS 2009 Annual Meeting*, San Francisco, CA, February 15-19, 2009.
- Sessions: 1) Ladle Metallurgy, Continuous Casting and Nozzle Clogging; 2) Modeling on Fluid Flow and Inclusion Motion, *Symposium on Inclusions and Clean Steel - Materials Science and Technology 2009*, Pittsburgh, PA, October 25-29, 2009.
- Session: Cast Shop Aluminum Production Joints Sessions - Flow and Solidification Phenomena in Nonferrous Casting, *Jim Evans Honorary Symposium, TMS 2010 Annual Meeting*, Seattle, WA, February 15, 2010.
- Session: Carbon Dioxide and Other Greenhouse Gas Reduction Metallurgy, *TMS 2010 Annual Meeting*, Seattle, WA, February 16, 2010.
- Session: Primary and Secondary Production of Metals, *Jim Evans Honorary Symposium, TMS 2010 Annual Meeting*, Seattle, WA, February 17, 2010.
- Session: Modeling, *Jim Evans Honorary Symposium, TMS 2010 Annual Meeting*, Seattle, WA, February 17, 2010.
- Session: Introduction of R&D Groups in Iron and Steel, *AISTech 2010*, Pittsburgh, PA, May 3, 2010.
- Session: the Second Symposium on the Recycling of Electronic Wastes: Technologies for the Recycling of Electronic Wastes, *TMS 2011 Annual Meeting*, San Diego, CA, February 28, 2011

- Session: Sensors, Sampling, and Simulation for Process Control: Liquid Metal Sensing and Online Measurement, *TMS 2011 Annual Meeting*, San Diego, CA, March 2, 2011
- Session: Symposium of CFD Modeling and Simulation in Materials Processing: CFD Modeling in Materials Processing I, TMS2012, Orlando, USA, March 12, 2012
- Session: Symposium of Fundamentals of Materials Processing: Process Metallurgy of Metals, TMS2012, Orlando, USA, March 12, 2012
- Session: Symposium of Fundamentals of Materials Processing: Physical Metallurgy of Steel, TMS2012, Orlando, USA, March 12, 2012
- Session: Symposium of Fundamentals of Materials Processing: Metallurgy of Non-Ferrous Metals, TMS2012, Orlando, USA, March 13, 2012
- Symposium of Production, Recycling and Recovery of Rare Earth Metals: Session I, TMS2012, Orlando, USA, March 15, 2012
- Session: Clean Steel & Inclusions (Metallurgy — Steelmaking & Casting), AISTech 2012, Atlanta, GA, May 7, 2012
- Session: Modeling and Verification (Metallurgy & Steelmaking & Casting/Computer Applications), AISTech 2012, Atlanta, GA, May 7, 2012
- Session: Improving the Cleanliness of Alloy and Special Steel, the 8th International Conference on Clean Steel, May 15, 2012, Budapest, Hungary
- Session D6: High temperature reaction kinetics, The 9th International Conference on Molten Slags, Fluxes and Salts (MOLTEN12), The Chinese Society for Metals, May 30, 2012, Beijing, China
- Session B2: Transport phenomena and process simulation, The 9th International Conference on Molten Slags, Fluxes and Salts (MOLTEN12), The Chinese Society for Metals, May 29, 2012, Beijing, China
- Session 9, The 14th International IUPAC Conference on High Temperature Materials Chemistry (HTMC-XIV), Sep.12, 2012, Beijing, China
- Session 2-8: Thermodynamics, Inclusions, Quality control, Asia Steel-2012, September 25, 2012, Beijing, China
- Session: Steelmaking and Continuous Casting, EPM2012-The 7th International Conference on Electromagnetic Processing of Materials, October 24, 2012, Beijing, China
- Session: Symposium of Fundamentals of Materials Processing: Process Metallurgy of Steel, TMS2013, San Antonio, USA, March 4, 2013
- Symposium of Production, Recycling and Recovery of Rare Earth Metals: Session I, TMS2013, San Antonio, USA, March 4, 2013
- Session Modeling of Multi-Scale Phenomena in Materials Processing - III: Fluid Dynamics and Solidification, TMS2013, San Antonio, USA, March 6, 2013
- Characterization of Minerals, Metals and Materials 2013: Characterization of High Performance Alloys, TMS2013, San Antonio, USA, March 6, 2013
- Session: Slag-Metal Interactions and Steel Cleanliness - Ladle and Secondary Refining; Continuous Casting, AISTech 2013, Pittsburgh, PA, May 8, 2013
- Session: L. Modeling and Simulation of Processes, Microstructures, and Behavior: Modeling and Simulations of Materials Processing III, The 8th Pacific Rim International Conference on Advanced Materials and Processing (PRICM-8), August 8, 2013, Waikoloa, Hawaii, USA)
- The 13<sup>th</sup> China-Japan Symposium on Science and Technology of Iron and Steel, Beijing, China, November 19, 2013

- Session: Materials Processing Fundamentals - TWIP/Steelmaking, TMS2014, San Diego, USA, February, 18, 2014
- Session: Flow control: Submerged Entry Nozzle, the 8th ECCO-European Continuous Casting Conference, 23-26 June, Congress Graz, Austria)
- Session F1: Non-metallic Inclusions (I), the 6<sup>th</sup> International Congress on the Science and Technology of Steelmaking (ICS2015), Beijing, China. May 12-14, 2015.
- The 4<sup>th</sup> Cross-strait Green Materials & Green Processing Forum, September 2-4, 2015
- Session: Inclusions-4, Asia Steel Conference 2015 (Asia Steel 2015), October 5-8, 2015, Tokohama, Japan
- Session: B6-CN Continuous Casting, the 10<sup>th</sup> CSM Steel Congress & the 6<sup>th</sup> Baosteel Biennial Academic Conference, October 22, 2015
- Session: B7-EN Steelmaking and Continuous Casting, the 10<sup>th</sup> CSM Steel Congress & the 6<sup>th</sup> Baosteel Biennial Academic Conference, October 22, 2015
- Session: I3-EN Stainless Steel Processing and Application, the 10<sup>th</sup> CSM Steel Congress & the 6<sup>th</sup> Baosteel Biennial Academic Conference, October 22, 2015
- Session: the 7<sup>th</sup> International Symposium on High Temperature Metallurgical Processing: Fundamental Research of Metallurgical Process, TMS2016, February 15, 2016, Nashville, USA
- Session: CFD Modeling and Simulation in Materials Processing: CFD Session I: Iron And Steelmaking (Tundish, Casting, Converter, Blast Furnace), MS2016, February 15, 2016, Nashville, USA
- Session: Materials Processing Fundamentals: Iron and Steelmaking - Thermodynamic, Reduction and Physical Metallurgy, MS2016, February 15, 2016, Nashville, USA

#### Member of Editorial Advisory Board and Key-Reader for Journals

- Key reader (Member of Board of Review) for the journal of *Metallurgical & Materials Transactions B*, since January 2004
- Key reader (Member of Board of Review) for the journal of *Metallurgical & Materials Transactions A*, since 2012
- Advisory Board member of *ISIJ International* since 2013
- Member of Editorial Board of *Steel Research International* since January 2017
- Member of Editorial Board of *Metallurgical Research & Technology (Revue de Métallurgie)* since July 2013
- Member of Editorial Board of *Ironmaking and Steelmaking* since January 2015
- Member of Board of Review for the journal of *Iron and Steel Technology (AIST Transactions)*, Since January 2009
- Member of Editorial Board of *Journal of Iron and Steel Research International* since November 2016
- Member of Editorial Board of *Advances in Manufacturing* since January 2013 ;
- Editorial member of Chinese journals: *Iron and Steel*, *Steelmaking*, *Continuous Casting*, *Shanghai Metals*, *Journal of Iron and Steel Research*, *Nonferrous Metals Science and Engineering*

#### Advisor for Special Topic in Journals

- Energy Conservation, CO<sub>2</sub>, and Other Greenhouse Gas Reduction, *Journal of Metals (JOM)*, January 2011
- Recycling of Electronic Wastes, *Journal of Metals (JOM)*, August 2011
- Waste Heat Recovery, *Journal of Metals (JOM)*, August 2012
- Computational Fluid Dynamics (CFD) Modeling on the Transport Phenomena during Casting Process, *Journal of Metals (JOM)*, September 2012
- Modeling on the Secondary Particles in Liquid Metals, *Journal of Metals (JOM)*, August 2013
- Optimization of Metallurgical Reactors using Mathematical and Physical Modeling, *Journal of Metals (JOM)*, July 2014

#### Reviewer for the Following Journals:

- Metallurgical and Materials Transaction B
- Ironmaking & Steelmaking
- Journal of Fluid Engineering
- Int. J. Heat Mass Transfer
- ISIJ International
- Journal of Non-Crystalline Solids
- International Journal of Multiphase Flow
- International Journal for Numerical Methods in Fluid
- Journal of Materials Processing Technology
- Materials Letters
- Experimental Thermal and Fluid Science
- Solar Energy Materials and Solar Cells
- Steel Research Int. (Scandinavian Journal of Metallurgy)
- Journal of Hazardous Materials (since 2009)
- Separation and Purification Technology (since 2009)
- Mineral Processing and Extractive Metallurgy Review (since 2009)
- Journal of Alloys and Compounds (since 2009)
- Canadian Metallurgical Quarterly (since November 2009)
- Environmental Science & Technology (since November 2009)
- Scientific Research and Essays (since December 2009)
- Journal of Manufacturing Processes (since May 2010)
- Environmental Science & Technology (since June 2010)
- Journal Materials Science (since September 2010)
- International Journal of Modelling and Simulation (since September 2010)
- Industrial & Engineering Chemistry Research (since December 2010)
- Iron and Steel Technology (since July 2011)
- Journal of Materials Engineering and Performance (Since November 2011)
- African Journal of Biotechnology (Since November 2011)
- Colloids and Surfaces A: Physicochemical and Engineering Aspects (Since December 2011)



- Hydrometallurgy (Since January 2012)
- Engineering Applications of Computational Fluid Mechanics (Since February 2012)
- The Korean Journal of Chemical Engineering (Since March 2012)
- Revista Mexicana de Fisica (Since March 2012)
- Energy & Fuels (Since April 2012)
- Metallurgical and Materials Transaction A (Since April 2012)
- Chemical Engineering Science (Since November 2012)
- International Journal of Computer Mathematics (Since November 2012)
- Materials Science (Since December 2012)
- British Journal of Applied Science & Technology (Since April 2013)
- Polish Journal of Chemical Technology (Since May 2013)
- Engineering Applications of Computational Fluid Mechanics (Since July 2013)
- Expert Opinion on Environmental Biology (Since August 2013)
- Journal of Power Sources (Since December 2013)
- Metallurgical & Materials Transactions E (Since July 2013)
- Materials Chemistry and Physics (Since May 2014)
- Engineering Journals (Since July 2014)
- Applied Thermal Engineering (Since August 2014)
- Silicon (Since August 2014)
- International Journal of Minerals, Metallurgy and Materials (Since October 2014)
- Materials Research Innovations (Since November 2014)
- High Temperature Materials and Processes (Since January 2015)
- Journal of Materials Research (Since January 2015)
- Chemical Engineering and Processing: Process Intensification (Since February, 2015)
- Applied Acoustics (Since March, 2015)
- Applied Mathematical Modelling (Since May, 2015)
- Silicon (Since September, 2015)
- International Journal of Nonferrous Metallurgy (IJNM) (Since October, 2015)
- Computers in Biology and Medicine (Since December, 2015)
- Composites Part B (Since July, 2016)
- Vacuum (Since September, 2016)
- Archives of Metallurgy and Materials (The Journal of Institute of Metallurgy and Materials Science and Committee on Metallurgy of Polish Academy of Sciences) (Since October, 2016)
- Modelling and Simulation in Engineering (Since November, 2016)
- Materials Science (Lithuania, Since December, 2016)
- Computer Methods and Programs in Biomedicine (Since December, 2016)
- International Journal of Thermal Sciences (Since December, 2016)
- Powder Technology (Since January, 2017)
- Engineering (Since February, 2017)
- Advanced Engineering Materials (Since March 2017)
- Journal of Applied Fluid Mechanics (Since April 2017)
- Chinese Journal of Chemical Engineering (Since May 2017)
- Cement and Concrete Composites (Since July 2017)
- China Foundry (Since August 2017)

- 2017 International Workshop on Materials Science and Mechanical Engineering (IWMSME 2017), October 27th -29th, 2017, Kunming, China (<http://www.iwmsme.org/>)
- The 2nd International Conference on Energy Engineering and Environmental Protection ((ICEEEP), November 20-22, 2017 in Sanya, China (<http://www.iceeep.org/>)
- Journal of Theoretical and Computational Chemistry (Since November 2017)
- Renewable Energy (Since November 2017)
- Materials Characterization (Since November 2017)
- Applied Mathematical Modelling (Since November 2017)

#### Panelist for Grant Organizations

- Panel member for National Science Foundation of China (NSFC) 2007 Engineering and Materials Sciences (DEMS) Conference, July 24-29, Beijing, China, 2007.
- Panel member for NSFC 2010 Engineering and Materials Sciences (DEMS) Conference, Beijing, China, July 19-24, 2010.
- Panel member for National Science Foundation (NSF) SBIR/STTR program (Phase I) - Recycling, August 13, 2009.
- Panel member for NSF SBIR/STTR program - Chemical Processing, April 22, 2010
- Panel member for NSF Environmental Sustainability Program - Industrial Ecology Panel, June 3-4, 2010.
- Panel member for NSF SBIR/STTR program (Phase I) - Catalysis & Electrochemistry, September 29, 2010.
- Panel member for National Science Centre, Poland, September 29, 2016

#### Reviewer for Proposals

- One proposal for FOM/STW/EZ program Dispersed Multiphase Flow, DSF, the Netherland, October, 2006.
- Seven proposals for the Key Projects of NSFC Engineering and Materials Sciences Program, (DEMS National Science Foundation of China, April, 2007.
- One proposal for the Application for Strategic Research Grant, City University of Hong Kong, October, 2007.
- Seven proposals for SBIR/STTR program (Phase I) - Recycling, August, 2009
- Three proposals for NSF SBIR/STTR program - Chemical Processing, April, 2010
- Seven proposals for NSF Environmental Sustainability Program - Industrial Ecology Panel, June, 2010;
- Six proposals for NSF SBIR/STTR program (Phase I) - Catalysis & Electrochemistry, September, 2010.
- One proposal for University of Missouri Research Board, November, 2010.

#### Reviewer for Master/Ph.D. thesis of Other University

- Master Thesis: Measuring Environmental Performance of a Supply Chain of Electronic Wastes Recycling, Peng Wang, Technical University of Narvik, Norway, September, 2007.

- Ph.D. Dissertation: Study of the layers in the film originating from the casting powder between steel shell and mould and associated phenomena in continuous casting of stainless steel, Paavo Hooli, Helsinki University of Technology, Finland, October, 2007
- Ph.D. Dissertation: Microstructural Aspects of Thermal Sprayed WC-Co Coatings and Ni-Cr Coated Steels, Priidu Peetsalu, Tallinn Technical University, Tallinn, Estonia, December, 2007.
- Ph.D. Dissertation: Northeastern University, Chongqing University, Jiangxi University of Science and Technology, Central South University

**PUBLICATIONS (over 200 journal Papers, 200 conference papers, 7 proceedings edited, and 17 patents)**

### **Journal Papers**

**2018**

**2017**

- 234 Xu-bin Zhang, Wei Chen, Lifeng Zhang. “A coupled model on fluid flow, heat transfer and solidification in continuous casting mold,” *China Foundry*, Vol.14, No.5, 2017, pp.416-420
- 233 Shengxi Wu, Liangshi Wang(\*), Hassan El-Shall, Brij Moudgil, Longsheng Zhao, Patrick Zhang, Xiaowei Huang, Longsheng Zhao, Lifeng Zhang, Zongyu Feng. “Simultaneous Recovery of Rare Earths and Uranium from Wet Process Phosphoric Acid using solvent extraction with D2EHPA,” *Hydrometallurgy*, Vol.175, 2017, pp.109-116
- 232 Ying Ren, Lifeng Zhang, Haitao Ling, Yi Wang, Dongteng Pan, Qiang Ren, Xincheng Wang. “A Reaction Model for Prediction of Inclusion Evolution During Reoxidation of Ca-Treated Al-Killed Steels in Tundish,” *Metallurgical and Materials Transactions B* Vol.48, No.3, 2017, pp.1433–1438
- 231 Ying Ren, Lifeng Zhang. “Thermodynamic Model for Prediction of Slag-Steel-Inclusion Reactions of 304 Stainless Steels,” *ISIJ International*, Vol. 57, No. 1, 2017, pp. 68-75, DOI: 10.2355/isijinternational.ISIJINT-2016-509
- 230 Haitao Ling(\*), Lifeng Zhang, Haijun Wang. “Effect of different removal conditions on the growth and removal of inclusions in the molten steel in a two-strand tundish,” *Metallurgical Research and Technology*, Vol.114, No.5, 2017, pp.516/1-516/8. DOI: 10.1051/metal/2017057
- 229 Changbo Guo, Haitao Ling, Lifeng Zhang(\*), Wen Yang, Ying Ren, Hao Zhou. “Effect of Slag Basicity Adjusting on Inclusions in Tire Cord Steels during Ladle Furnace Refining Process”, *Metallurgical Research and Technology*, Vol.114, No.6, 2017, pp.602/1-602-7
- 228 Haitao Ling, Lifeng Zhang(\*), Chang Liu. “Mathematical modeling on the fluid flow during RH degassing process,” *Metallurgical Research and Technology*, Vol.114, No.5, 2017, pp.510/1-510/12, DOI: 10.1051/metal/2017054

- 227 Lei Ren, Lifeng Zhang, Qiangqiang Wang. “Measurements of Surface Velocity and Level Fluctuation in an Actual Continuous Wide Slab Casting Mold,” *Metallurgical Research and Technology*, Vol.115, No.1, 2018, pp. 102/1-102/13, DOI: 10.1051/metal/2017074
- 226 Yi Wang, Lifeng Zhang, Haijie Zhang, Xing Zhao, Shengqian Wang, Wen Yang. “Mechanism and Control of Sulfide Inclusion Accumulation in CET Zone of 37Mn5 Round Billet,” *Metallurgical and Materials Transactions B* Vol.48, No.2, 2017, pp.1004-1013, DOI: 10.1007/s11663-016-0886-4
- 225 Ying Zhang, Ying Ren, Lifeng Zhang. “Modeling Transient Evolution of Inclusion in Si-Mn-killed Steels,” *Metallurgical Research Technology*, Vol.114, 2017, pp.114/1-114/7
- 224 Xuewei Zhang, Lifeng Zhang, Wen Yang, Yi Wang, Yang Liu, Yuanchi Dong. “Characterization of the Three-Dimensional Morphology and Formation Mechanism of Inclusions in Linepipe Steels,” *Metallurgical and Materials Transactions B*, Vol.48, No.1, 2017, pp.701-712, DOI: 10.1007/s11663-016-0833-4
- 223 Hongliang Zhao, Lifeng Zhang(\*), Pan Yin, Sen Wang. “Bubble Motion and Gas-Liquid Mixing in Metallurgical Reactor with a Top Submerged Lance,” *International Journal of Chemical Reactor Engineering*, Vol.15, No.3, 2017, pp.???, DOI: 10.1515/ijcre-2016-0139
- 222 Xuewei Zhang, Lifeng Zhang, Wen Yang, Yuanchi Dong. “Characterization of MnS Particles in Heavy Rail Steels Using Different Methods,” *Steel Research International*, Vol.88, No.1, 2017, pp.16008/1-16008/16, DOI: 10.1002/srin.201600080
- 221 Xuewei Zhang, Lifeng Zhang, Wen Yang, Yi Wang, Ying Ren, Yuanchi Dong. “Comparison of 2D and 3D Morphology of Nonmetallic Inclusions in Steel Using Different Methods,” *Metallurgical Research and Technology*, Vol.114, No.1, 2017, pp.113/1-113/11, DOI: 10.1051/metal/2016056
- 220 Haitao Ling, Changbo Guo, A.N. Conejo, Fei Li, Lifeng Zhang. “Effect of Snorkel Shape and Number of Nozzles on Mixing Phenomena in the RH Process by Physical Modeling,” *Metallurgical Research and Technology*, Vol.113, No.1, 2017, pp.111/1-111/13, DOI: 10.1051/metal/2016058
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- 2 Stanley M. Howard, Princewill Anyalebechi, Lifeng Zhang, “2009 EPD Congress,” Extraction & Processing Division, TMS, 2009.
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- 4 Brian G. Thomas, James A. Yurko, Lifeng Zhang, “Sensors, Sampling, and Simulation for Process Control”, TMS, 2011.
- 5 Laurentiu Nastac, Lifeng Zhang, Brian G. Thomas, Adrian Sabau, Nagy El-Kaddah, Adam C. Powell and Herve Combeau, “CFD Modeling and Simulation in Materials Processing”, WILEY/TMS, 2012.
- 6 Lifeng Zhang, Joseph A. Pomykala, Arjan Ciftja, “2012 EPD Congress”, WILEY/TMS, 2012.
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## **Book**

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## **Software Copyright:**

1. Software Copyright: Transferring Data from ANSYS to MHD (Magnetohydrodynamics) Module in FLUENT-Ver1.0, Registration #: 2013SR008175.
2. Software Copyright: Transferring Data from ANSYS to MHD (Magnetohydrodynamics) Module in FLUENT-Ver2.0, Registration #: 2013SR063168.
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## **Patents Granted**

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- 21 China Patent 201320039474.8: A Device for Casting Billet by Slab Continuous Casting Machine, [Lifeng Zhang](#)
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- 23 China Patent 201320039358.6: A Novel Crystallizer for Casting Billet, [Lifeng Zhang](#)
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## PRESENTATIONS

### Keynote Presentation:

1. Experimental and Theoretical Study of the Cleanliness of Steel,” ISS Best Paper Presentation, The 84th Steemaking Conference of ISS, Baltimore, MD, March 25-28, 2001
2. Inclusion Removal from Molten Steel through Bubble Flotation, 15<sup>th</sup> Ingot Metallurgy Symposium, Pittsburgh, USA, May 8, 2001
3. Inclusions Control during Clean Steel Production from Steel Refining to Continuous Casting, Steelmaking National Symposium, Morelia, Mexico, Nov.26-28, 2003
4. Recycling of Aluminum, 2008 Global Symposium on Recycling, Waste Treatment and Clean Technology (REWAS 2008), Cancun, Mexico, October 12-15, 2008
5. Fluid Flow, Solidification and Inclusion Entrapment during Steel Centrifugal Casting Process, Session: Symposium of CFD Modeling and Simulation in Materials Processing: CFD Modeling in Materials Processing I, TMS2012, Orlando, USA
6. Electromagnetic Separation of Nonmetallic Inclusions from Liquid Steel by High Frequency Magnetic Field,” Session: Steelmaking and Continuous Casting, EPM2012-The 7th International Conference on Electromagnetic Processing of Materials, October 25, 2012, Beijing, China
7. Fluid Flow Transport phenomena in Steel Continuous Casting FC-Mold Strands. Symposium - Modeling and Simulation of Processes, Microstructures, and Behavior, the 8th Pacific Rim International Conference on Advanced Materials and Processing (PRICM-8), August 4-9, 2013, Waikoloa, Hawaii, USA
8. Detection and Control of Inclusions in Steel, Session Flow control: Submerged Entry Nozzle, the 8<sup>th</sup> ECCC-European Continuous Casting Conference, June 23-26, 2014, Congress Graz, Austria
9. Evolution Characteristics of Inclusions in 55SiCr Spring Steels. The 6th International Congress on the Science and Technology of Steelmaking (ICS2015), May 12-14, 2015. Beijing, China.
10. Removing more oxide inclusions and modifying their composition in 304 stainless steels - which one is more important? (Invited), Asia Steel Conference 2015 (Asia Steel 2015), October 5-8, 2015, Tokohama, Japan
11. Non-metallic Inclusions and Precipitates in High Quality Steels (Symposium of Defects and Properties of Cast Metals, TMS2017, February 26 – March 2, 2017, San Diego, CA, USA
12. Water modeling on the multiphase fluid flow in a continuous casting mold, 9th European Continuous Casting Conference (ECCC2017), June 26-29, 2017, Vienna, Austria

### **Invited Short-Term Series Lectures**

1. “Particle Removal from Liquid by Bubble Flotation,” Department of Aero & Hydrodynamics, Delft University of Technology, The Netherland, (Invited by Prof. J. Westerweel), October 22, 2009.
2. “Fluid Flow Related Phenomena during Metal Refining and Casting Process,” “Particle Removal from Liquid by Bubble Flotation,” “Observation of Inclusions in Steel,” “Thermodynamic and Kinetics of Nozzle Clogging during Steel Continuous Casting,” “Fluid Flow and Inclusion Motion in Continuous Casting Strands under EMBR,” Group of Process Modelling and Fluid Dynamics, Corus Research Development & Technology, The Netherlands, (Invited by Dirk van der Plas), October 20, 2009.
3. “Fluid Flow Related Phenomena during Metal Refining and Casting Process,” Department of Aero & Hydrodynamics, Delft University of Technology, The Netherland, (Invited by Prof. J. Westerweel), October 19, 2009.
4. “Inclusions in Steel,” “CFD Modeling on Process Metallurgy,” “Recycling of Electronic Wastes,” University of Science Technology Beijing, Beijing, China, May 18-26, 2009.
5. “Clean Steel Technology and the Study of Fluid Flow and Inclusion Nucleation, Growth and Motion during Steel Refining and Continuous Casting of Steel,” Shougang Research Institute of Technology, Beijing, China, December 3-10, 2003.

### **Invited Lectures/Presentations**

1. “Research Activities on Modeling and Clean Steel at Missouri S&T,” NSFC 2010 Panel Meeting, Beijing, China, July 22, 2010.
2. “Steel Continuous Casting Practice and Modeling,” CISDI, MCC, Chongqing, China, July 9, 2010.
3. “Self-swirling Upgate for Ingot Casting Process,” Whemco Steel, Pittsburgh, PA, January 20, 2010.
4. “Inclusions in Steel,” “CFD Modeling on Process Metallurgy,” Shanghai University, Shanghai, China, June 16-18, 2009.
5. “Refining, Casting and Recycling of Metals,” School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing, China, June 27, 2008.
6. “Fluid Flow and Inclusion behavior during Steel Refining and Casting Process,” College of Materials Science and Engineering, Chongqing University, Chongqing, China, June 23, 2008.
7. “Technology for Clean Steel Production,” Qian’an Steel LTD, Qianan City, China, June 7, 2008.
8. “Transport Phenomena during Primary Reduction, Refining and Recycling of Aluminum,” Alcoa Research Center, Pittsburgh, PA, February 29, 2008.
9. “Inclusions in Metals,” Department of Materials Science and Engineering, Carnegie Mellon University, May 16, 2007.

10. "Purification of Aluminum and Silicon and Inclusion Detection," Hydro Aluminum, Sunndalsøra, April 28, 2006
11. "Inclusions Related Research during Steel Refining and Continuous Casting," Cores Steel Research Center, the Netherland, February 9, 2006.
12. "Refining, Casting and Recycling of Aluminum and Silicon," Elkem Company, Kristansand, Norway, February 7, 2006.
13. "Application of Computational Fluid Dynamics to Steel Refining and Casting Processes," SINTEF Materials Technology, Department of Flow Technology, Trondheim, Norway, June 10, 2005.
14. "Aluminum Recycling from Aluminum Dross," Department of Materials Technology, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, June 10, 2005.
15. "Control of Inclusions and Steel Cleanliness during Steel Refining and Continuous Casting Process," Mittal Steel Research and Development, East Chicago, IN, July 6, 2005.
16. "Control of Inclusions and Steel Cleanliness during Steel Refining and Continuous Casting Process," Severstal NA, Dearborn, MI, June 29-30, 2005.
17. "Clean Steel Technology and the Study of Fluid Flow and Inclusion Nucleation, Growth and Motion during Steel Refining and Continuous Casting of Steel," School of Materials Science and Engineering, Chongqing University, (Invited by Prof. Guanghua Wen), Chongqing, China, December 22, 2003.
18. "Clean Steel Technology and the Study of Fluid Flow and Inclusion Nucleation, Growth and Motion during Steel Refining and Continuous Casting of Steel," Baosteel Research Institute of Technology, Shanghai, China, Dec.17, 2003.
19. "Clean Steel Technology and the Study of Fluid Flow and Inclusion Nucleation, Growth and Motion during Steel Refining and Continuous Casting of Steel," School of Materials Science and Engineering, Shanghai University, (Invited by Jihe Wei), Shanghai, China, Dec.15, 2003.
20. "Clean Steel Technology and the Study of Fluid Flow and Inclusion Nucleation, Growth and Motion during Steel Refining and Continuous Casting of Steel," School of Metallurgy, University of Science & Technology Beijing, (Invited by Xinhua Wang), Beijing, China, December 10, 2003.
21. "Origin, Control and Evaluation of Inclusions in Steel," The 16th Annual Ingot Metallurgy Symposium, Pittsburgh, PA, May 7, 2003.
22. "Investigation of Steel Cleanliness during Ingot Teeming," Conference: Ingot Metallurgy Forum (IMF) Fall Meeting, Greensburg, PA, October 1, 2002.
23. "Mechanism of Inclusion Removal from Liquid Steel by Attachment to Rising Bubbles," The 15th Annual Ingot Metallurgy Symposium, Pittsburgh, PA, May 8, 2002.

#### **Other Presentations**

24. "Evolution of Inclusions in Ti-Bearing Ultra-Low Carbon Steel during RH Refining Process", Session: Symposium of Fundamentals of Materials Processing: Process Metallurgy of Steel, TMS2013, San Antonio, USA, March 4, 2013.
25. "Study of Heat Flux in CSP Continuous Casting Mold" Session: 4th International Symposium on High-Temperature Metallurgical Processing: Alloy and Materials Preparation II, TMS2013, San Antonio, USA, March 5, 2013.
26. "Modeling on the Fluid Flow and Inclusion Motion in a Continuous Casting FC-Mold", Session: Modeling of Multi-Scale Phenomena in Materials Processing - III: Fluid



- Dynamics and Solidification, TMS2013, San Antonio, USA, March 6, 2013。
27. "Modeling on the Entrapment of Non-metallic Inclusions in Steel Continuous Casting Strands," Solidification theory and advanced technology seminar, June 4-6, 2012, Shanghai, China
  28. "Electromagnetic Separation of Non-metallic Inclusions from Liquid Steel by High Frequency Magnetic Field," Session: Steelmaking and Continuous Casting, EPM2012-The 7th International Conference on Electromagnetic Processing of Materials, October 25, 2012, Beijing, China
  29. "Modeling on the Motion and Entrapment of Non-metallic Inclusions in a Steel Continuous Casting Billet Strand," Session 2-10: Thermodynamics, Inclusions, Quality control, Asia Steel-2012, September 26, 2012, Beijing, China
  30. "High Temperature Thermodynamics for the Formation of Complicated Oxide Inclusions in Steel by Al-Ti-Mg Deoxidation," Session 12, The 14th International IUPAC Conference on High Temperature Materials Chemistry (HTMC-XIV), Sep.12, 2012, Beijing, China
  31. "Transient Interaction between Molten Iron, Alumina Lining Refractory and Slag," Session D6: High temperature reaction kinetics, The 9th International Conference on Molten Slags, Fluxes and Salts (MOLTEN12), The Chinese Society for Metals, May 30, 2012, Beijing, China
  32. "Transient Interaction between Molten Steel, Lining Refractory and Slag Phase," Proceedings of 8th International Conference on Clean Steel, May 15, 2012, Budapest, Hungary
  33. "Variation of Non-metallic Inclusions in Molten Steel during Refining Processes," Proceedings of 8th International Conference on Clean Steel, May 14, 2012, Budapest, Hungary
  34. "Formation and Evolution of Inclusions in Al-Ti-Mg-Deoxidized Steel," Session: Clean Steel (Ladle & Secondary Refining/Metallurgy — Steelmaking & Casting), AISTech 2012-The Iron & Steel Technology Conference, Atlanta, GA, May 8, 2012
  35. "Transient Phenomena of Inclusions in Alloy Steels During RH-VD-CC Process," Session: Clean Steel (Ladle & Secondary Refining/Metallurgy — Steelmaking & Casting), AISTech 2012-The Iron & Steel Technology Conference, Atlanta, GA, May 8, 2012
  36. "Quantitative Evaluation of Inclusions in Several Steel Products," Session: Clean Steel & Inclusions (Metallurgy — Steelmaking & Casting), AISTech 2012, Atlanta, GA, May 7, 2012
  37. "State of the Art Treatment of EAF Dust," Session: EAF Environmental — Dust & Dioxins (Environmental/Electric Steelmaking), AISTech 2012-The Iron & Steel Technology Conference, Atlanta, GA, May 7, 2012
  38. "Study on Inclusions in Steel During Recent 100 Years: a Review," the 2nd UK-China Steel Research Forum 2012, April 7, 2012, Wuhan, China
  39. "Recycling of Rare Earth Metals: A Review," Symposium of Production, Recycling and Recovery of Rare Earth Metals: Session I, Orlando, USA, March 15, 2012
  40. "High Frequency Electromagnetic Separation of Inclusions from Aluminum," Symposium of Cast Shop for Aluminum Production: Dross and Melt Quality Control, TMS 2012 Annual Meeting, Orlando, Florida, March 14, 2012
  41. "Leaching Studies for Metals Recovery from Waste Printed Wiring Boards," Symposium

- of Recycling General Sessions: Electronics, TMS 2012 Annual Meeting, Orlando, Florida, March 13, 2012
42. "Control of Gas Emission during Pyrolysis of Waste Printed Wiring Boards," Symposium of Recycling General Sessions: Electronics, TMS 2012 Annual Meeting, Orlando, Florida, March 13, 2012
  43. "Settling of Inclusions in Top-cut Solar Grade Silicon (SOG-Si) under Electromagnetic Field," 3rd International Symposium on High Temperature Metallurgical Processing: Alloy and Materials Preparation, TMS 2012 Annual Meeting, Orlando, Florida, March 13, 2012
  44. "High Frequency Electromagnetic Purification of Silicon," Symposium of Solar Cell Silicon: Refining and Characterization, TMS 2012 Annual Meeting, Orlando, Florida, March 13, 2012
  45. "Inclusion Characterizatics in Stainless Steel Ingot," Symposium of Materials Processing Fundamentals: Process Metallurgy of Metals, TMS 2012 Annual Meeting, Orlando, Florida, March 12, 2012
  46. "Fluid Flow, Solidification and Inclusion Entrapment during Steel Centrifugal Casting Process," Symposium of Defects and Properties of Cast Metals: Metal Cleanliness, TMS 2012 Annual Meeting, Orlando, Florida, March 12, 2012
  47. "Inclusions in Steel," The 2nd Clean Steel Symposium Shenyang, China, August 25, 2011
  48. "Study of Inclusions in the Recent 40 Years: A Review," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  49. "Fluid Flow and Steel Cleanliness in a Continuous Casting Tundish and Mold," AISTech 2011-The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  50. "Cleanliness Evaluation for 27SiMn Steels Produced by BOF $\rightarrow$ LF $\rightarrow$ Billet Casting Process," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  51. "Formation and Modification of MgO $\cdot$  Al<sub>2</sub>O<sub>3</sub>-Based Inclusions in Alloy Steels," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  52. "Clean Steel Technologies for the Production of 316L Stainless Steel Ultra-fine Wires," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  53. "Optimization of the Bottom Tuyere for a 150 ton Vanadium Extraction Converter Using Water Modeling," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  54. "Production of High Strength Low Alloy Bridge Steels," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  55. "A Novel Design of the Submerged Entry Nozzle for Slab Continuous Casting Process", AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  56. "Pelletizing the Magnetite Concentrate Ore with Addition of Steelmaking Sludge," AISTech 2011The Iron & Steel Technology Conference, Indianapolis, IN, May 2-5, 2011
  57. "Mechanical Recycling of Electronic Wastes for Materials Recovery," TMS 2011 Annual Meeting, San Diego, CA, February 27- March 4, 2011
  58. "Green Pyrolysis of Used Printed Wiring Board Powders," TMS 2011 Annual Meeting,

- San Diego, CA, February 27- March 4, 2011
59. "State of the art in the recycling of waste Printed wiring boards," TMS 2011 Annual Meeting, San Diego, CA, February 27- March 4, 2011
  60. "Experimental Study on the Production of Nitrogen-bearing Stainless Steel by Injecting Nitrogen Gas," TMS 2011 Annual Meeting, San Diego, CA, February 27- March 4, 2011
  61. "Analysis of the Transient Phenomena during Steel Continuous Casting through the On-line Detection Data," TMS 2011 Annual Meeting, San Diego, CA, February 27- March 4, 2011
  62. "Current Technologies for the Removal of Iron from Aluminum Alloys," TMS 2011 Annual Meeting, San Diego, CA, February 27- March 4, 2011
  63. "Removal of Inclusions from Solar Grade Silicon Using Electromagnetic Field," TMS 2011 Annual Meeting, San Diego, CA, February 27- March 4, 2011
  64. "Entrapment of Inclusions in Continuous Casting Billet: Industrial Observation and Modeling," AISTech 2010- The Iron & Steel Technology Conference, Pittsburgh, PA, May 3-6, 2010
  65. "Research Activities on Clean Steel and Modeling at Missouri S&T," AISTech 2010, Pittsburgh, PA, May 3-6, 2010.
  66. "Solidification and Dendrite Growth of Stainless Steel during Continuous Casting," AISTech 2010, Pittsburgh, PA, May 3-6, 2010.
  67. "Development of Self-braking Nozzle for Steel Slab Continuous Casting Process," AISTech 2010, Pittsburgh, PA, May 3-6, 2010.
  68. "Simulation on Self-Swirling Upgate for Ingot Teeming Process," IMF Spring Meeting, Pittsburgh, PA, April 20, 2010.
  69. "Numerical Modeling on the Fluid Flow-Related Phenomena in an Aluminum Electrolysis Cell," TMS 2010 Annual Meeting, Seattle, WA, February 14-18, 2010.
  70. "Formation of the Solid Layer on the Top of Molten Aluminum," TMS 2010 Annual Meeting, Seattle, WA, February 14-18, 2010.
  71. "Modeling on the Cast Start during Steel Continuous Casting Process," TMS 2010 Annual Meeting, Seattle, WA, February 14-18, 2010.
  72. "Fluid Flow and Inclusion Motion in Continuous Casting Strands under EMBr," TMS 2010 Annual Meeting, Seattle, WA, February 14-18, 2010.
  73. "Inclusion Nucleation and Growth from Nano-Size to Mili-Size," The 2nd International Symposium on Cutting Edge of Computer Simulation of Solidification and Casting (CSSC2010Hokkaido University, Sapporo, Japan, February 3-5, 2010.
  74. "Purification and Recycling of Solar Cell Scraps and Slurry Wastes," Solar Power Industries, INC, Pittsburgh, PA, January 21, 2010.
  75. "Inclusion Nucleation and Growth from Nano-Size to Mili-Size, Symposium of Inclusions and Clean Steel," Materials Science and Technology (MS&T) 2009, Pittsburgh, PA, October 25-29, 2009.
  76. "Presentation title: Studies on Inclusions in Steel in the Past 100 Years, Symposium of Inclusions and Clean Steel," Materials Science and Technology (MS&T) 2009, Pittsburgh, PA, October 25-29, 2009.
  77. "Inclusions and Nozzle Clogging during Billet Continuous Casting Process, Symposium of Inclusions and Clean Steel," Materials Science and Technology (MS&T) 2009, Pittsburgh, PA, October 25-29, 2009.
  78. "Iron Removal from Aluminum," Alcoa Technical Center, Pittsburgh, PA, August 5,

- 2009.
79. "CFD Modeling on the Fluid Flow and Inclusion Motion during Centrifugal Casting Process," Visit to ACIPCO, Birmingham, AL, July 23, 2009.
  80. "Transient Fluid Flow Phenomena in Continuous Casting Tundishes," AISTech2009, St. Louis, MO, May 2-7, 2009.
  81. "Kinetics of SEN Clogging during Steel Continuous Casting," AISTech2009, St. Louis, MO, May 2-7, 2009.
  82. "Production of Ultra-Low Carbon IF Steels Using RH-KTB Process," AISTech2009, St. Louis, MO, May 2-7, 2009.
  83. "Presentation title: Fluid Flow and Steel Cleanliness in an Argon-Stirred Ladle," AISTech2009, St. Louis, MO, May 2-7, 2009.
  84. "Heat Transfer and Solidification of Steels at the Second Cooling Zone during Slab Continuous Casting Process," AISTech2009, St. Louis, MO, May 2-7, 2009.
  85. "Steel Quality Improvement Using EMBr at Continuous Casting Mold: Modeling and Practice," AISTech2009, St. Louis, MO, May 2-7, 2009.
  86. "Investigation of Ladle Nozzle Clogging During Steel Continuous Casting," AISTech2009, St. Louis, MO, May 2-7, 2009.
  87. "Analysis and Simulation on the Secondary Cooling during Steel Bloom Continuous Casting," AISTech2009, St. Louis, MO, May 2-7, 2009.
  88. "Kinetics of SEN Clogging during Steel Continuous Casting," AISTech2009, St. Louis, MO, May 2-7, 2009.
  89. "Inclusions: 'Tumor' of 'Medicine' for Steels," Department of Materials Science and Engineering, Missouri S&T, Rolla, MO, February 12, 2009.
  90. "Separation of Nickel, Cobalt and Magnesium from the Spent MH-Ni and Cd-Ni Battery Anode Materials," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  91. "Preparation of Cadmium Ingot and Nickel Powder from Spent Cd-Ni Batteries," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  92. "Recycling of Solar-Grade Silicon Wastes: an Overview," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  93. "Fluid Flow and Bubble Behavior in the Aluminum Electrolysis Cell," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  94. "Green Combustion of Waste Printed Circuit Boards," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  95. "Modeling on Dendrite Growth during Slab Continuous Casting of Stainless Steels," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  96. "Fluid Flow and Bubble Behavior in the Aluminum Electrolysis Cell," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009.
  97. "Nonmetallic Inclusions in Solar Cell Silicon: Focusing on Recycling of Scraps" 2008 Global Symposium on Recycling, Waste Treatment and Clean Technology (REWAS 2008), Cancun, Mexico, October 12-15, 2008.
  98. "Observation of Inclusions in the Steel Using Partial Acid Extraction and SEM," Materials Science and Technology 2008 Conference (MS&T'08), Pittsburgh, PA, October 5-9, 2008.
  99. "Effect of BaO on the Properties of Continuous Casting Mold Flux," Materials Science and Technology 2008 Conference (MS&T'08), Pittsburgh, PA, October 5-9, 2008.
  100. "Recycling of Electronic Wastes: Combustion and Pyrolysis," Materials Science and

- Technology 2008 Conference (MS&T'08), Pittsburgh, PA, October 5-9, 2008.
101. "Green Process Metallurgy," ISC (Intelligent Systems Center) Seminar, Missouri S&T, Rolla, MO, April 25, 2008
  102. "Transport of Fluid Flow and Inclusions in Continuous Casting Strands," AISTech2008, Pittsburgh, May 5-8, 2008.
  103. "Inclusions and Nozzle Clogging during Steel Continuous Casting Process," AISTech2008, Pittsburgh, May 5-8, 2008.
  104. "Inclusion Investigation during Ingot Bottom Teeming Process," IMF 2008 Spring Meeting, Pittsburgh, PA, April 9, 2008.
  105. "Mechanisms of Inclusion Removal from Aluminum through Filtration," TMS 2008 Annual Meeting, New Orleans, March 9-13, 2008.
  106. "Recycling of Electronic Wastes: Degradation and Combustion," TMS 2008 Annual Meeting, New Orleans, March 9-13, 2008.
  107. "Refining and Recycling of Metals," Department of Materials Science and Engineering, Missouri S&T, Rolla, MO, January 24, 2008.
  108. "Refining and recycling of Aluminum," The 2nd Chinese-Norwegian Seminar on Light Metals, Shanghai, China, November 5-9, 2007
  109. "State of the Art in the Recycling of Automobile Tires," World Recycling Forum Shanghai '07-International Conference & Exhibition on Electronics, Car & Battery Recycling, Shanghai, China, November 13 -16, 2007.
  110. "Dross Formation on the top of the Molten Aluminum," EUROMAT2007 - European Congress on Advanced Materials and Processes, Nürnberg, Germany, September 10-13, 2007.
  111. "Recycling of Aluminum Scraps," R'07 World Congress: Recovery of Materials and Energy for Resource Efficiency, Davos, Switzerland, September 3-5, 2007,
  112. "Steel cleanliness control during continuous casting process," METEC InSteelCon2007: 3<sup>rd</sup> International Conference on New Developments in Metallurgical Process Technologies, Düsseldorf, Germany, June 14, 2007.
  113. "Removal of Non-metallic Inclusions from Molten Aluminum". European Metallurgical Conference 2007, Düsseldorf, Germany, June 12, 2007,
  114. "Inclusions, Lining Materials and Nozzle Clogging during Middle Carbon Steel Billet Continuous Casting Process," International Conference on Clean Steel 2007, Hungary, June 4, 2007
  115. "Investigation on Nozzle Clogging during Steel Billet Continuous Casting Process," AISTech 2007, Indianapolis, IN, May 7-10, 2007.
  116. "Designing the launder system during aluminum refining and casting process through CFD simulation," TMS 2007 Annual Meeting, Orlando, FL, February 25- March 1, 2007.
  117. "Non-metallic inclusions in metals: from nanometer to millimeter," TMS 2007 Annual Meeting, Orlando, FL, February 25- March 1, 2007.
  118. "Fundamentals of Inclusion Removal from Molten Metal through Gas Bubbling," TMS 2007 Annual Meeting, Orlando, FL, February 25- March 1, 2007.
  119. "Fluid Flow, Heat Transfer and Inclusion Removal in Continuous Casting Strands, Fluid Flow," The 5th International Conference on Computational Fluid Dynamics in the Process Industries (CFD2006), Melbourne, Australia, December 11-15, 2006.
  120. "Heat Transfer and Inclusion Motion in Continuous Casting Tundishes," The 5th International Conference on Computational Fluid Dynamics in the Process Industries

- (CFD2006), Melbourne, Australia, December 11-15, 2006.
121. "Refining and Recycling of Metals," School of Materials Science and Engineering, Chongqing University, China, November 28, 2006.
  122. "Refining and Recycling of Metals," School of Materials Science and Engineering, Shanghai Jiaotong University, China, November 25, 2006.
  123. "State of the Art in the Refining and Recycling of Magnesium," The 2nd International Conference on Magnesium- 2006 Beijing International Materials Week (2006 BIMW), Beijing, China, June 25-28, 2006.
  124. "Removal of Impurity Elements from Aluminum Scrap through Filtration," International Conference on Aluminum Alloys- 2006 Beijing International Materials Week (2006 BIMW), Beijing, China, June 25-28, 2006.
  125. "Purification of Solar Cell Silicon Materials Through Filtration," International Conference on New Energy Materials (ICNEM 2006)- 2006 Beijing International Materials Week (2006 BIMW), Beijing, China, June 25-28, 2006.
  126. "Purification of Aluminum and Silicon," Norwegian Metallurgisk Sommermøte (Summer Meeting of Norwegian Metallurgical Society), Oslo, Norway, May 4-5, 2006.
  127. "Transport Phenomena and CFD Application during Process Metallurgy," Special Lecture of Department of Materials Science and Engineering, Norwegian University of Science and Technology, Trondheim, Norway, March 20, 2006.
  128. "Fluid Flow and Transport Phenomena during Steel Refining and Casting Process," TMS 2006 Annual Meeting, San Antonio, TX, March 12-16, 2006.
  129. "State of the Art in Recovery of Aluminum from Aluminum Dross," TMS 2006 Annual Meeting, San Antonio, TX, March 12-16, 2006.
  130. "Continuous Casting Operation and Steel Cleanliness Control," 2005 National Iron and Steel Conference of China, Beijing, China, October 27, 2005.
  131. "Application of Computational Fluid Dynamics to Process Metallurgy System," 2005 National Iron and Steel Conference of China, Beijing, China, October 27, 2005.
  132. "Application of Computational Fluid Dynamics to Steel Refining and Casting Processes," CFD 2005- Fourth International Conference on Computational Fluid Dynamics in the Oil and Gas, Metallurgical & Process Industries, Trondheim, Norway, 6 - 8 June, 2005.
  133. "Fluid Flow, Heat Transfer and Particle Motion in the Molten Steel during Steel Refining and Casting Processes," Metallurgical Forum 2005, University Science & Technology Beijing, Beijing, China, March 25, 2005.
  134. "Designing a New Scrap-Based Continuous Steelmaking Process using CFD Simulation," The 3rd International Congress on the Science & Technology of Steelmaking, Charlotte, NC, May 8-11, 2005.
  135. "Inclusions in the Low Carbon Al-killed Steel Produced by a CSP Thin Slab Casting Process at Handan Steel," International Conference of AISTech2005, Charlotte, NC, May 8-11, 2005.
  136. "Project report—Investigation of Steel Cleanliness during Ingot Teeming," IMF Winter Meeting, Pittsburgh, PA., January 20, 2005.
  137. "Inclusions in Continuous Casting Steel," Nucor Steel Decatur LLC, Decatur, AL, November 8, 2004.
  138. "Project report—Investigation of Steel Cleanliness during Ingot Teeming," IMF Fall Meeting & Symposium, Huntington, WV, October 6, 2004.
  139. "Inclusion Removal by Bubble Flotation in Continuous Casting Mold," Materials

- Science & Technology 2004, New Orleans, LA, September 26-29, 2004.
140. "Inclusion Control in Tire Cord Steel," Materials Science & Technology 2004, New Orleans, LA, September 26-29, 2004.
  141. "Inside Morphology of Large Inclusions in Steel," Materials Science & Technology 2004, New Orleans, LA, September 26-29, 2004.
  142. "Study of Free-fluoride Mold Powder Based on Titanium - bearing Blast Furnace Slag," Materials Science & Technology 2004, New Orleans, LA, September 26-29, 2004.
  143. "Physical, Numerical and Industrial Investigation of Fluid Flow and Steel Cleanliness in the Continuous Casting Mold at Panzhihua Steel," AISTech2004 – The Iron & Steel Technology Conference and Exposition, Nashville, TN, September 15-17, 2004.
  144. "Dephosphorization of the Molten Steel by BaO-CaO-CaF<sub>2</sub> Slags," AISTech2004 – The Iron & Steel Technology Conference and Exposition, Nashville, TN, September 15-17, 2004.
  145. "Application of Fluent Software on the Fluid Flow and Particle Behavior in the Molten Steel," Department of Metallurgical Engineering, University of Missouri-Rolla, Rolla, MO, September 13, 2004.
  146. "Modeling of Fluid Flow, Mixing and Inclusion Motion in Bottom Gas-Stirred Molten Steel Vessel," Gerdau AmeriSteel, Knoxville, TN, July 13, 2004.
  147. "Modeling of Fluid Flow, Mixing and Inclusion Motion in Bottom Gas-Stirred Molten Steel Vessel," Nucor-Yamato, Armored, AR, July 13, 2004.
  148. "Multiphase Flow, Inclusion Nucleation, Growth, Removal and Entrapment – in Molten Steel and Continuous Casting," The Annual Meeting of the Continuous Casting Consortium, Department of Mechanical & Industrial Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, May 10, 2004.
  149. "Modeling of Fluid Flow, Mixing and Inclusion Motion in Bottom Gas-Stirred Molten Steel Vessel — Development of a Process to Continuously Melt, Refine, and Cast High-Quality Steel," The Annual Meeting of the Continuous Casting Consortium, Department of Mechanical & Industrial Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, May 10, 2004.
  150. "Project report—Investigation of Steel Cleanliness during Ingot Teeming," IMF Spring Meeting, Pittsburgh, PA, May 4, 2004.
  151. "Fluid Flow and Inclusion Motion in the Molten Steel of Tundish at the #3 Steel Plant of Shougang," Shougang Research Institute of Technology, Beijing, China, February 6, 2004
  152. "Project report—Investigation of Steel Cleanliness during Ingot Teeming," IMF Fall Meeting, Merrillville, IN, October 8, 2003.
  153. "Inclusion Investigation during Ultra Clean Steel Production at Baosteel," The Iron & Steel Society's Technology Conference and Exposition, Indianapolis, IN, April 27-30, 2003.
  154. "Physical and Mathematical Simulation of Fluid Flow, Heat Transfer and Particle Motion in a 6-Strand Continuous Casting Tundish," The Iron & Steel Society's Technology Conference and Exposition, Indianapolis, IN, April 27-30, 2003.
  155. "Inclusion Nucleation, Growth and Motion in Molten Steel," Meeting of Material Interest Group at University of Illinois at Urbana-Champaign (UIUC), Urbana, IL, April 11, 2003.
  156. "Project report—Investigation of Steel Cleanliness during Ingot Teeming," IMF Spring Meeting & Symposium, Pittsburgh, PA, May 6, 2003.

157. "Numerical Simulation of Fluid Flow and Inclusion Motion in Ingot Casting Process," IMF-UIUC Project Meeting, Urbana, IL, August 15, 2003.
158. "Numerical Simulation of Multiphase Fluid Flow and Inclusion Motion during the New Continuous Steelmaking and Casting process," UMR-UIUC DOE Project, Urbana, IL, August 15, 2003.
159. "Project report—Investigation of Steel Cleanliness during Ingot Teeming," IMF Fall Meeting, Merrillville, IN 46410, October 12, 2003.
160. "Fluid Flow and Inclusion Motion in Continuous Caster," National Steelmaking Symposium, Morelia, Mexico, November 26-28, 2003.
161. "Inclusion Nucleation, Growth, Removal and Entrapment in Molten Steel and Continuous Casting," The Annual Meeting of the Continuous Casting Consortium, UIUC, Urbana, IL, October 15, 2002.
162. "Research Proposal: Investigation of Steel Cleanliness during Ingot Teeming," IMF Fall Meeting, Greensburg, PA, October 1, 2002.
163. "Inclusion Removal from Steel Caster," The Annual Meeting of the Continuous Casting Consortium, UIUC, Urbana, IL, March 10, 2002.
164. "Evaluation and Control of Steel Cleanliness □ Review," The 85th Steemaking Conference of ISS, Nashville, TN, March 10-13, 2002.
165. "Nucleation and Growth of Alumina Inclusions during Steel Deoxidation," The 85th Steemaking Conference of ISS, Nashville, TN, March 10-13, 2002.
166. "Inclusion Entrapment Literature Review and Modeling," The Annual Meeting of the Continuous Casting Consortium, UIUC, Urbana, IL, October 18, 2001.
167. "Fluid Flow and Particle Removal by Bubble Flotation in a Mechanically Stirred Vessel," TMS 2000 Annual Meeting. Nashville, TN, March 12-16, 2000
168. "Mathematical Simulation of Fluid Flow in Gas-Stirred Systems," TMS 2000 Annual Meeting. Nashville, TN, March 12-16, 2000
169. "Numerical Simulation of Nucleation and Precipitation of the Second Phase from Liquids," Ausschluß für Metallurgische Grundlagen Unterausschuß für Physikalische Chemie (Meeting of Physical Chemistry in Metallurgy), Physikalische Chemie des VDEh, Düsseldorf, Germany, December 8, 2000.
170. "Water model study on the inclusion removal from liquid steel by bubble flotation," The symposium for the process engineering and the 19th steelmaking committee of Japan Society for the Promotion of Science (JSPS), Tokyo, Japan, May 25, 2000.
171. "Fundamentals of Inclusion Removal from Liquid Steel by Bubble Flotation," Nippon Steel Kimitsu Works, (Host Researcher: Dr. Yamada), Japan, February 22, 1999.
172. "Study of Steel Cleanliness in Continuous Casting Tundish," The 2nd International Conference on Steel Continuous Casting in Developing Countries, Wuhan, China, October, 1997.
173. "Prediction Model for Oxygen Content of Liquid Steel in the Tundish during Continuous Casting," The 2nd International Conference on Steel Continuous Casting in Developing Countries, Wuhan, China, October, 1997.
174. "Mathematical Model of Collision and Coagulation between Solid Inclusions of Steel in Tundish of Continuous Casting," International symposium on multiphase fluid , non-Newtonian fluid and physicochemical fluid flows, University of Petroleum, Beijing, China, October, 1997.
175. "Mathematical Model of Decarburization of Ultra Low Carbon Steel during RH Treatment," The 1st Iron and Steel Conference Proceeding of China, Wuhan, China,



December, 1997.

176. "Production of Ultra Clean Steel by the Process of LD-RH-Continuous Casting," The 1st Iron and Steel Conference Proceeding of China , Wuhan, China, December, 1997.
177. "Ultra-Clean Steel Production by LD-RH-CC Process," The No.1 Steelmaking Works of BaoSteel, Shanghai, China, January 7, 1997.
178. "Research of Inclusion Behavior of Low Carbon Al-killed Steel during Continuous Casting," The 9th Steelmaking Conference proceeding of China, Guangzhou, China, November, 1996.

#### Posters

179. "Study on Internal Cracks on Continuous Casting Slabs of AH36 Steel", Session: Symposium of Fundamentals of Materials Processing: Poster Session, TMS2013, San Antonio, USA, March 4, 2013.
180. "Purification of Solar Grade Silicon Using Electromagnetic Field," 35th IEEE Photovoltaic Specialist Conference, Honolulu, HI, June 19-24, 2010.
181. "Non-Metallic Particles in Solar Grade Silicon (SoG-Si)," 35th IEEE Photovoltaic Specialist Conference, Hawaii, USA, June 19-24, 2010
182. "Heat Transfer and Solidification of Steel Slab during Continuous Casting Process," The 2<sup>nd</sup> International Symposium on Cutting Edge of Computer Simulation of Solidification and Casting (CSSC2010), Hokkaido University, Sapporo, Japan, February 3-5, 2010.
183. "Fluid Flow, Heat Transfer and Inclusion Motion in Steel Slab Continuous Casting Strands under Electromagnetic Brake," The 2nd International Symposium on Cutting Edge of Computer Simulation of Solidification and Casting (CSSC2010), Hokkaido University, Sapporo, Japan, February 3-5, 2010.
184. "Fundamental Removal of Impurity Elements from the Molten Aluminum: Modeling and Parametric Analysis," TMS 2009 Annual Meeting, San Francisco, CA, February 15-19, 2009