

**ALAN A. LUO**, PhD, NAE, FTMS, FSAE, FASM  
**Donald D. Glower Chair in Engineering**  
**Professor of Materials Science & Engineering**  
**Professor of Integrated Systems Engineering (Manufacturing)**  
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### BIOSKETCH

Alan Luo is Donald D. Glower Chair in Engineering and Professor of Materials Science and Engineering and Integrated Systems Engineering (Manufacturing) at The Ohio State University in Columbus. He leads the Lightweight Materials and Manufacturing Research Laboratory (LMMRL) and is Director of Advanced Casting Research Center (ACRC) at Ohio State. He is an elected member of the National Academy of Engineering (NAE), a fellow of The Minerals, Metals & Materials Society (TMS), Society for Automotive Engineers (SAE), and American Society of Metals (ASM). Prior to joining Ohio State in 2013, Luo was a GM Technical Fellow at General Motors Global Research and Development Center with 20 years of industrial experience. An internationally recognized expert in lightweight materials and manufacturing, Luo has served as a technical leader in two National Network for Manufacturing Innovation institutes, The REMADE (Reducing Embodied-Energy And Decreasing Emissions) Institute and LIFT (Lightweight Innovations for Tomorrow). Luo has 21 patents and more than 340 technical publications on advanced materials and manufacturing. Professor Luo has received many awards including TMS Bruce Chalmers Award, Light Metals Technology Award and Research to Industrial Practice Award, ACRC Merton Flemings Award for Scientific Achievements, General Motors John Campbell Awards and Charles McCuen Awards, as well as several best paper and application awards from CALPHAD journal, TMS, SAE, American Foundry Society (AFS), International Magnesium Association (IMA), and North American Die Casting Association (NADCA).

### EDUCATION

1993            **Ph.D. in Engineering Materials**, University of Windsor, Windsor, Ontario, Canada  
 1987            **M. Eng. in Materials Science and Engineering**, Harbin Institute of Technology, Harbin, China  
 1984            **B. Eng. in Mechanical Engineering**, Anhui Polytechnic University, Anhui, China

### KEY APPOINTMENTS

Aug. 2023 - present	<b>Donald D. Glower Chair in Engineering</b> , College of Engineering, <b>The Ohio State University</b> , Columbus, OH, USA
July 2013 - present	<b>Professor</b> of Materials Science and Engineering and Integrated Systems Engineering (Manufacturing), <b>The Ohio State University</b> , Columbus, OH, USA
Feb. 1998 - June 2013	<b>GM Technical Fellow, Staff Research Scientist, Senior Research Scientist</b> <b>General Motors Global R&amp;D Center</b> , Warren, MI, USA
Nov. 1996 - Feb. 1998	<b>Development Engineer</b> - Materials <b>IMRA America, Inc.</b> , Ann Arbor, MI, USA (a Toyota affiliate company)
Jan. 1993 - Oct. 1996	<b>Director - Applied Research and Development, Research Scientist</b> <b>Institute of Magnesium Technology, Inc.</b> , Ste-Foy, Quebec, Canada
Sept. 1989 - Dec. 1992	<b>Research Assistant</b> , Department of Engineering Materials <b>University of Windsor</b> , Windsor, Ontario, Canada
July - Aug. 1989	<b>Visiting Research Scientist</b> , Department of Materials Science and Engineering <b>Drexel University</b> , Philadelphia, PA, USA
July 1987 - July 1989	<b>Assistant Professor</b> , Department of Materials Science and Engineering <b>Huazhong University of Science and Technology</b> , Wuhan, Hubei, China

## MAJOR AWARDS AND HONORS

- 2023 **Member, *National Academy of Engineering (NAE)***
- 2023 **Fellow Award, *The Minerals, Metals & Materials Society (TMS)***
- 2023 **Research to Industrial Practice Award, *The Minerals, Metals & Materials Society (TMS)***
- 2022 **Merton C. Flemings Award for Scientific Achievements, *Advanced Casting Research Center***
- 2021 **Bruce Chalmers Award, *The Minerals, Metals & Materials Society (TMS)***
- 2021 **LMD (Light Metals Division) Distinguished Service Award, *TMS***
- 2020 **Distinguished Scientist Award, *Journal of Magnesium and Alloys (JMA)***
- 2020 **Light Metals Division Technology Award, *TMS***
- 2020 **Ralph L. Boyer Award for Excellence in Undergraduate Teaching Engineering Innovation, *The Ohio State University***
- 2017 **Excellence in Magnesium Die Casting – Side Door Inner Casting, *North American Die Casting Association***
- 2017 **Award of Excellence for Automotive Product – Automotive Door Inner Panels, *International Magnesium Association (IMA)***
- 2016 **Best Paper Award 2016 (for papers published in the CALPHAD Journal in 2015), *CALPHAD***
- 2015 **SAE Fellow Award, *Society of Automotive Engineers International (SAE)*.**
- 2013 **ASM Fellow Award, *ASM International***
- 2013 **Brimacombe Medalist Award, *The Minerals, Metals & Materials Society (TMS)*,**
- 2013 **Forest R. McFarland Award, *Society of Automotive Engineers (SAE) International***
- 2013 **Editor Choice Award, “*Interdiffusion and Phase Growth Kinetics in Magnesium-Aluminum Binary System*”, *Journal of Phase Equilibria and Diffusion*.**
- 2010 **Best Paper Award, “*Microstructure and Mechanical Properties of Magnesium-Aluminum-Manganese Cast Alloys*”, published in *American Foundry Society Paper 10-079*, 2010, American Foundry Society, Schaumburg, IL, USA.**
- 2009 **Special Recognition Award, *United States Council for Automotive Research (USCAR)***
- 2008 **ASM Materials Science Research Silver Medal Award, *ASM International***
- 2008 **John M. Campbell Award, *General Motors Research & Development Center*, “*Enhancing Ductility of Wrought Magnesium Alloys*”.**
- 2008 **Best Paper Award, “*Low Pressure Die Casting of AZ91 and AM50 Magnesium Alloys*”, published in *American Foundry Society Transactions*, 2008, 116, 805-815, American Foundry Society.**
- 2008 **Magnesium Application Award, *The Minerals, Metals & Materials Society (TMS)*. “*Influence of Cerium on Texture and Ductility of Magnesium Alloy Extrusions*”, published in *Magnesium Technology 2008*, 2006, 269-274.**
- 2008 **Casting of the Year Honorable Mention Award, *American Foundry Society*, Schaumburg, IL, USA “*Cadillac CTS Engine Cradle*”**
- 2006 **Magnesium Fundamental Research Award, “*Numerical Modeling of Large Strain Deformation in Magnesium*,” published in *Magnesium Technology 2006*, *The Minerals, Metals & Materials Society (TMS)*, 2006, 239-243.**
- 2006 **Charles L. McCuen Special Achievement Award, *General Motors Research & Development Center*, “*Lightweight Aluminum Hollow Casting/Extrusion Welded Cradle*”.**
- 2005 **Charles L. McCuen Special Achievement Award, *General Motors Research & Development Center*, “*Repair Procedure for Aluminum Frame Rails on Corvette Z06*”.**
- 2005 **Excellence of Oral Presentation Award, *Society of Automotive Engineers (SAE) International*, “*Wrought Magnesium Alloys for Automotive Applications*”, SAE World Congress, April 11-15, Detroit, MI.**
- 2005 **Excellence of Oral Presentation Award, *Society of Automotive Engineers (SAE) International*, “*Aluminum Tube Hydroforming: Formability and Mechanical Properties*”, SAE World Congress, April 11-15, 2005, Detroit, MI.**

- 2004 **Charles L. McCuen Special Achievement Award, General Motors Research & Development Center, “Implementation of Low Cost Aluminum”.**
- 2003 **John M. Campbell Award, General Motors Research & Development Center, Warren, MI, USA. “Outstanding contribution to fundamental studies of creep deformation in magnesium alloys”.**

## PATENTS, PUBLICATIONS AND PRESENTATIONS

### I. Output Summary

- **21 patents granted, 1 defensive publication, and 17 published patent applications.**
- **26 books, book chapters and conference proceedings**
- **217 referred journal publications**
- **126 publications in conference proceedings**
- **347 technical presentations/lectures (22 keynote/plenary and 73 invited talks)**
- **15,041 citations and h-index of 54 as of October 7, 2023, per Google Scholar search**

### II. Patents Granted

1. A.A. Luo, W. Sun, X. Huang, “High Entropy AlCrTiV Alloys”, U.S. Patent 11,168,385, November 9, 2021.
2. A.A. Luo and A.K. Sachdev, “High Strength/Ductility Tin-Containing Magnesium-Aluminum-Manganese Alloys for Structural Applications”, U.S. Patent 9,593,396, March 14, 2017.
3. Y. Chen, A.A. Luo, and A.K. Sachdev, “Surface Treatment for Improved Bonding in Bi-metallic Casting”, U.S. Patent 8,481,034, November 1, 2016.
4. M.J. Walker, B.R. Powell, A.A. Luo, “Method of bonding a metal to a substrate,” U.S. Patent 8,992,696, March 31, 2015.
5. M.J. Walker, A.K. Sachdev, B.R. Powell, A.A. Luo, “Method of bonding a metal to a substrate,” U.S. Patent 8,852,359, October 7, 2014.
6. H.G. Kia, A.A. Luo, J.N. Owens, J.F. Quinn, “Magnesium-Composite Structures with Enhanced Designs,” U.S. Patent 8,668,247, March 11, 2014.
7. A.A. Luo, W.R. Rodgers and C.K. Buehler, “Molded or Extruded Combinations of Light Metal Alloys and High-Temperature Polymers”, Chinese Patent CN101724285B, March 13, 2013.
8. A.A. Luo, R.K. Mishra and A.K. Sachdev, “High Ductility/Strength Magnesium Alloys”, U.S. Patent 8,361,251, January 29, 2013.
9. G. Song, A.A. Luo and X.Q. Gayden, “Methods of Reducing Corrosion between Magnesium and Another Metal”, U.S. Patent 8,231,936, July 31, 2012.
10. A.A. Luo and A.K. Sachdev, “High Strength/Ductility Tin-Containing Magnesium-Aluminum-Manganese Alloys for Structural Applications”, Chinese Patent CN101448964B, December 14, 2011.
11. A.A. Luo and A.K. Sachdev, “Lightweight Aluminum Wheel with Magnesium Rim”, U.S. Patent 8,052,224, November 7, 2011.
12. X. Zeng, Y. Wang, W. Ding and A.A. Luo, “Magnesium Grain-Refining Using Titanium”, U.S. Patent 8,016,957, September 13, 2011.
13. A.A. Luo and A.K. Sachdev, “Methods of Extruding Magnesium Alloys”, U.S. Patent 7,967,928, June 28, 2011.
14. A.A. Luo, M.W. Verbrugge and A.K. Sachdev, “Galvanic Corrosion Protection for Magnesium Components Using Cast-in-Place Isolators”, U.S. Patent 7,845,388, December 7, 2010.
15. A.A. Luo and A.K. Sachdev, “Magnesium Extrusion Alloy Having Improved Extrudability and Formability”, Chinese Patent CN 1950528, Nov. 26, 2008.
16. A.A. Luo and A.K. Sachdev: “Lightweight Hybrid Tubular/Casting Instrument Panel Beam”, U.S. Patent 7,216,927, May 15, 2007.
17. A.A. Luo and A.K. Sachdev: “Moderate Temperature Bending of Magnesium Alloy Tubes”, U.S. Patent 7,140,224, November 28, 2006.

18. P.E. Krajewski, A.A. Luo, S.E. Hartfield-Wunsch, P.J. McNamara: “Crush Zone and Method for Introducing Crush Zone into Vehicle Structure”, US Patent 6,994,350, February 7, 2006.
19. A.A. Luo and A.K. Sachdev: “Process for Forming Aluminum Hydroforms”, U.S. Patent 6,732,434, May 11, 2004.
20. B.R. Powell, V. Rezhets, A.A. Luo and B.L. Tiwari “Creep-Resistant Magnesium Alloy Die Castings”, U.S. Patent 6,264,763, July 24, 2001; European Patent EP1048743, April 14, 2004.
21. A.A. Luo and T. Shinoda: “Magnesium Alloy Having Superior Elevated Temperature Properties and Die-Castability”, U.S. Patent 5,855,697, January 5, 1999, European Patent EP0879898, July 18, 2001.

### III. Defensive Publication

1. A.A. Luo and J.A. Schroeder, “Simplified Rivet Joining of Dissimilar Metals Using Room-Temperature Adhesives”, **Research Disclosure**, # 406071, August 2005

### IV. Patent Applications

1. A. Luo, E. Cinkilic, M. Moodispaw, “Structural Die Cast Aluminum Alloys”, *U.S. Patent Application*, UA 2022/0098706 A1, filed on September 29, 2021, published on March 31, 2022.
2. A. Luo, E. Cinkilic, M. Moodispaw, “Aluminum Alloys and Methods of Making and Use Thereof”, *U.S. Provisional Patent Application*, application number 63/154,196, filed on February 26, 2021.
3. A. Luo, E. Cinkilic, M. Moodispaw, “Structural die cast alloys using recycled aluminum”, *U.S. Provisional Patent Application*, application number 63/085,016, filed on September 29, 2020.
4. A. Luo, R. Shi, “A high-strength and high-ductility magnesium sheet alloy for room-temperature forming applications”, *PCT Application*, application number PCT/US2020/053065, filed on September 28, 2020.
5. A. Luo, T. Avey, “Thermomechanical Processing for Magnesium-based Bioresorbable Alloys”, *PCT Application*, application number PCT/US2020/045138, filed on August 6, 2020.
6. A. Luo, R. Shi, “Magnesium Alloys and Methods of Making and Use Thereof”, *U.S. Provisional Patent Application*, application number 62/908,077, filed on September 30, 2019.
7. A. Luo, T. Avey, “Magnesium Alloy Based Objects and Methods of Making and Use Thereof”, *U.S. Provisional Patent Application*, application number, 62/891,572, filed on August 26, 2019.
8. A.A. Luo, W. Sun, X. Huang, “High-entropy AlCrTiV Alloys”, *U.S. Patent Application US 2018/0119255 AI*, filed November 1, 2016, published on May 3, 2018.
9. H.G. Kia, A.A. Luo, J.N. Owens, J.F. Quinn, “Magnesium-Composite Structures with Enhanced Designs,” US patent filed on April 23, 2012, *US 2013/0278016 AI*, published on October 24, 2013.
10. M.J. Walker, A.K. Sachdev, B.R. Powell, A.A. Luo, “Method of Bonding a Metal to a Substrate,” US patent filed on December 2, 2011, *U.S. Patent Application US 2012/0301734 AI*, published on November 29, 2012.
11. H.G. Kia, A.A. Luo, J.N. Owens, J.F. Quinn, “Fiber-Wrapped, Magnesium Tubular Structural Components,” US patent filed on Sept. 21, 2010, *U.S. Patent Application US2012/0068497 AI*, published on March 22, 2012.
12. A.A. Luo and A.K. Sachdev, “High Strength Mg-Al-Sn-Ce and High Strength/Ductility Mg-Al-Sn-Y Cast Alloys,” US patent filed on July 29, 2011, *U.S. Patent Application US 2011/0286880 AI*, published on November 24, 2011.
13. M.D. Bharadwaj, S. Sundarraj, S. Tiwari, A.A. Luo and D. Sachdeva, “Corrosion Resistance of the Cast Mg Alloys by Novel Microstructural Phase Modifications”, US patent filed on Aug. 7, 2009, *U.S. Patent Application US 20110030855*, published on Feb. 10, 2011.
14. A.A. Luo, W.R. Rodgers and C.K. Buehler, “Molded or Extruded Combinations of Light Metal Alloys and High-Temperature Polymers,” US patent filed on Oct. 14, 2008, *U.S. Patent Application US2010/0092790 AI*, published on April 15, 2010.
15. A.A. Luo and A.K. Sachdev, “Methods for Attaching Magnesium Panels Using Self-Piercing Rivets,” US patent filed on Oct. 8, 2008, *U.S. Patent Application US2010/0083481 AI*, published on April 8, 2010.
16. A.K. Gupta, A.M. Kumar, P. Ramarao, A.K. Sachdev, A.A. Luo and R.K. Mishra, “Forming Magnesium Alloys with Improved Ductility”, US patent filed on Nov. 7, 2007, *U.S. Patent Application US 20090028743*, published on Jan. 29, 2009.

17. A.A. Luo and Y.-M. Wang, “Corrosion Inhibitors in Polyurea Coatings,” US patent filed on Jan. 12, 2006, *U.S. Patent Application US 20070158616*, published on July 12, 2007.

## V. Authored Book

1. A.A. Luo, “*Magnesium: The Lightest Structural Metal*”, International Magnesium Association, Saint Paul, MN, USA, 2018, 47 pages.

## VI. Edited Books and Conference Proceedings

1. A. Luo, M. Pekguleryuz, S. Agnew, J. Allison, K. Kainer, E. Nyberg, W. Poole, K. Sadayappan, B. Williams, S. Yue, “*Magnesium 2021: Proceedings of the 12th International Conference on Magnesium Alloys and their Applications*”, TMS/Springer, 2021, 279 pages.
2. X. Chen, Y. Zhong, L. Zhang, J.A. Howarter, A.A. Baba, C. Wang, Z. Sun, M. Zhang, E. Olivetti, A.A. Luo, A. Powell, “*Energy Technology 2020*”, TMS/Springer, 2020, 434 pages.
3. D. Twarog, D. Apelian, A. Luo, “*High Integrity Casting of Lightweight Components*”, North American Die Casting Association, Arlington Heights, IL, USA, 2016, 453 pages.
4. W. Poole, S. Christensen, S. Kalidindi, A.A. Luo, J. Madison, D. Raabe, X. Sun, “*Proceedings of the 3rd World Congress on Integrated Computational Materials Engineering*”, John Wiley & Sons, Hoboken, NJ, USA, 2015, 375 pages.
5. L. Nastac, B. Liu, H. Fredriksson, J. Lacaze, C.-P. Hong, A. Catalina, A. Buhrig-Polaczek, D.M. Maijer, C.A. Monroe, A.S. Sabau, R. Ruxanda, A.A. Luo, S. Sen, A. Diószegi, “*Advances in the Science and Engineering of Casting Solidification: An MPMD Symposium Honoring Doru Michael Stefanescu*”, John Wiley & Sons, Hoboken, NJ, USA, 2015, 417 pages.
6. S.N. Mathaudhu, A.A. Luo, N.R. Neelamegham, E.A. Nyberg, W.H. Sillekens, “*Essential Readings in Magnesium Technology*”, John Wiley & Sons, Hoboken, NJ, USA, 2014, 664 pages.
7. X. Li, A. Luo, “*Science and Engineering of Light Metal Matrix Nanocomposites and Composites*”, The Minerals, Metals & Materials Society (TMS), Warrendale, PA, 2012, 117 pages.
8. S. Kim and A. Luo, *Advances in Lightweight Materials: Aluminum*, 2008, Special Publication SP-2209, SAE International, 2008, 78 pages.
9. R.S. Beals, A.A. Luo, N.R. Neelamegham and M.O. Pekguleryuz, *Magnesium Technology 2007*, The Minerals, Metals & Materials Society (TMS), Warrendale, PA, 2007, 465 pages.
10. S. Robison, J. Boileau, A. Luo and G. Armstrong, *Advances in Lightweight Materials: Casting and Aluminum and Achieving Lightweight Vehicles*, Special Publication SP-2105, SAE International, 2007, 148 pages.
11. A.A. Luo, N.R. Neelamegham and R.S. Beals, *Magnesium Technology 2006*, The Minerals, Metals & Materials Society (TMS), Warrendale, PA, 2006, 546 pages.
12. J. Benedyk, A. Luo, R. DasDupta, S. Robison and J. Boileau, *Lightweight Castings and Aluminum Alloys for Advanced Automotive Applications*, Special Publication SP-1948, SAE International, 2005, 148 pages.
13. A.A. Luo, *Magnesium Technology 2004*, The Minerals, Metals & Materials Society (TMS), Warrendale, PA, 2004, 333 pages.
14. W. Ke, E.H. Han, Y.F. Han, K. Kainer and A.A. Luo, *Magnesium - Science, Technology and Applications*, Proceedings of the International Conference on Magnesium – Science, Technology and Applications, September 20-24, 2004, Beijing, China, Trans Tech Publications Ltd, Switzerland, 948 pages.

## VII. Book Chapters

1. A.A. Luo, Advanced Metal Casting. In: F.G. Caballero (ed.), *Encyclopedia of Materials: Metals and Alloys*. 2022, **3**, 13–26. Oxford: Elsevier.
2. B.R. Powell, P.E. Krajewski and A.A. Luo, “*Chapter 4. Magnesium Alloys for Lightweight Powertrains and Automotive Structures*”, book chapter, Materials, Design, and Manufacturing for Lightweight Vehicles, 2<sup>nd</sup> Edition, Woodhead Publishing Ltd, Cambridge, UK, 2020, 125-186.

3. A.A. Luo, “**Chapter 8. Applications: aerospace, automotive and other structural applications of magnesium**”, book chapter, *Fundamentals of Magnesium Alloy Metallurgy*, Woodhead Publishing Ltd, Cambridge, UK, 2013, 266-316.
4. A.A. Luo, A.K. Sachdev, “**Chapter 12. Applications of Magnesium Alloys in Automotive Engineering**”, book chapter, *Advances in Wrought Magnesium Alloys*, Woodhead Publishing Ltd, Cambridge, UK, 2012, 393-426.
5. B.R. Powell, A.A. Luo, P.E. Krajewski, “**Chapter 7. Magnesium Alloys for Lightweight Powertrains and Automotive Bodies**”, book chapter, *Advanced Materials in Automotive Engineering*, Woodhead Publishing Ltd, Cambridge, UK, 2012, 150-209.
6. K. Sadayappan and A.A. Luo, “**Chapter 2. Physical Metallurgy**”, book chapter, *Technology for Magnesium Castings*, American Foundry Society, Schaumburg, IL, 2011, 9-27.
7. A.A. Luo and K. Sadayappan, “**Chapter 3. Solidification**”, book chapter, *Technology for Magnesium Castings*, American Foundry Society, Schaumburg, IL, 2011, 29-47.
8. B.R. Powell, P.E. Krajewski and A.A. Luo, “**Chapter 4. Magnesium Alloys for Lightweight Powertrains and Automotive Structures**”, book chapter, *Materials Design and Manufacturing for Lightweight Vehicles*, Woodhead Publishing Ltd, Cambridge, UK, 2010, 114-168.
9. A.A. Luo and A.K. Sachdev, “**Chapter 11. Bending and Hydroforming of Aluminum and Magnesium Alloy Tubes**”, Book Chapter, *Hydroforming for Advanced Manufacturing*, Woodhead Publishing Ltd, Cambridge, UK, 2008, 238-266.

#### VII. Papers in Referred Journals

1. N. Delfino de Campos Neto, R. Brune, A.A. Luo, P. Brancaleon, A.L. Korenyi-Both, S.P. Midson, M.J. Kaufman, “Towards lube-free aluminum high pressure die casting using duplex AlCrN physical vapor deposition coatings”, *Journal of Materials Research and Technology*, 2023, 24, 7409-7426, <https://doi.org/10.1016/j.jmrt.2023.05.022>.
2. J. Yang, R. Shi, A.A. Luo, “Unveiling the alloying-processing-microstructure correlations in high-formability sheet magnesium alloys”, *Metals*, 2023, 13, 704, <https://doi.org/10.3390/met13040704>.
3. N. Trometer, L.A. Godlewski, E. Prabhu, M. Schopen, A.A. Luo, “Effect of vacuum on die filling in high pressure die casting: water analog, process simulation and casting validation”, *International Journal of Metalcasting*, 2023, <https://doi.org/10.1007/s40962-023-01002-z>.
4. T. Zheng, S. Pan, J. Liu, M.P. Moodispaw, A.A. Luo, A.I. Taub, X. Li, “Study on nano-treating of Al-Mg-Si-Cu alloys with TiC nanoparticles”, *Journal of Alloys and Compounds*, 2023, 947, 169405, <https://doi.org/10.1016/j.jallcom.2023.169405>.
5. J. Zhang, E. Cinkilic, X. Huang, G.G. Wang, Y. Liu, J.P. Weiler, A.A. Luo, “Optimization of T5 heat treatment in high pressure die casting of Al–Si–Mg–Mn alloys by using an improved Kampmann-Wagner numerical (KWN) model”, *Materials Science and Engineering: A*, 2023, 865, 144604, <https://doi.org/10.1016/j.msea.2023.144604>.
6. J. Zhang, P. Peng, Q. Yang, A.A. Luo, “Bimodal grain structure formation and strengthening mechanisms in Mg-Mn-Al-Ca extrusion alloys”, *Journal of Magnesium and Alloys*, 2023, <https://doi.org/10.1016/j.jma.2022.12.012>.
7. P. Peng, J. She, A. Tang, J. Zhang, S. Zhou, M. Rashad, J. Kim, A.A. Luo, F. Pan, “A new dilute Mg–Mn–Al alloy with exceptional rollability and ductility at room temperature”, *Materials Science and Engineering: A*, 2022, 859, 144229, <https://doi.org/10.1016/j.msea.2022.144229>.
8. S. Pan, J. Yuan, M.P. Moodispaw, C. Linsley, J. Liu, A.A. Luo, A. Taub, X. Li, “Corrosion performance of nano-treated aluminum alloy A206 with TiC nanoparticles”, *Materials and Corrosion*, 2022, <https://doi.org/10.1002/maco.202213503>.
9. Z. Liang, J. Miao, X. Huang, F. Zhang, J.C. Williams, A.A. Luo, “Kinetically Induced Fine Secondary  $\alpha$ -Ti Phase Formation in a Novel As-cast Titanium Alloy”, *Metallurgical and Materials Transactions A*, 2022, 53A, 3536-3546, <https://doi.org/10.1007/s11661-022-06775-2>.

10. D.H. Cho, T. Avey, K.H. Nam, D. Dean, A.A. Luo, “In vitro and in vivo assessment of squeeze-cast Mg-Zn-Ca-Mn alloys for biomedical applications”, *Acta Biomaterialia*, 2022, 442-455, <https://doi.org/10.1016/j.actbio.2022.07.040>.
11. C. Gu, M.P. Moodispaw, A.A. Luo, “Cellular automaton simulation and experimental validation of eutectic transformation during solidification of Al-Si alloys”, *npj Computational Materials*, 2022, 8:134 <https://doi.org/10.1038/s41524-022-00824-5>.
12. E. Cinkilic, M. Moodispaw, J. Zhang, J. Miao, A.A. Luo, “A New Recycled Al-Si-Mg Alloy for Sustainable Structural Die Casting Applications”, *Metallurgical and Materials Transactions A*, 2022, 53A, 2861-2873, <https://doi.org/10.1007/s11661-022-06711-4>.
13. A.A. Luo, A.K. Sachdev, D. Apelian, “Alloy development and process innovations for light metals casting”, *Journal of Materials Processing Technology*, 2022, 306, 117606, <https://doi.org/10.1016/j.jmatprotec.2022.117606>.
14. J.M. Meier, J. Caris, A.A. Luo, “Towards high strength cast Mg-RE based alloys: phase diagrams and strengthening mechanisms”, *Journal of Magnesium and Alloys*, 2022, <https://doi.org/10.1016/j.jma.2022.03.008>.
15. X. Huang, J. Miao, A.A. Luo, “Order-disorder transition and its mechanical effects in lightweight AlCrTiV high entropy alloys”, *Scripta Materialia*, 2022, 210, 114462, <https://doi.org/10.1016/j.scriptamat.2021.114462>.
16. J. Miao, C. Zhang, A.D. Klarner, J. Zhang, E. Cinkilic, F. Zhang, A.A. Luo, Characterization and modeling of concurrent precipitation in Mg-Al-Sn alloys using an improved Kampmann-Wagner numerical (KWN) model, *Materialia*, 2022, 101348, <https://doi.org/10.1016/j.mtla.2022.101348>.
17. Z. Li, Q. Wang, L. Peng, A.A. Luo, P. Fu, “Low-Cyclic Fatigue Behavior of Peak-Aged Mg-Nd-Based Alloy”, *Metallurgical and Materials Transactions A*, 2022, <https://doi.org/10.1007/s11661-021-06465-5>.
18. J. Miao, S. Sutton, A.A. Luo, “Deformation microstructure and thermomechanical processing maps of homogenized AA2070 aluminum alloy”, *Materials Science and Engineering A*, 2022, 834, 142619, <https://doi.org/10.1016/j.msea.2022.142619>.
19. X. Huang, J. Zhang, J. Miao, E. Cinkilic, Q. Wang, A.A. Luo, On the interactions between molten aluminum and high entropy alloy particles during aluminum matrix composite processing, *Journal of Alloys and Compounds*, 2022, 895, Part 2, 162712.
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122. A. Luo and W.V. Youdelis: “A New Analytical Method for Calorimetric Studies of Precipitation Kinetics in Aluminum Alloys” in *Proc. of International Symposium on Light Metals Processing and Applications*, Eds., C. Bickert, M. Bouchard, G. Davies and E. Jiran, The Metallurgical Society of CIM, Canada, 1993, 437-449.
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125. A. Luo and W.V. Youdelis: “The Effect of V on Mechanical Behaviour of Al-Li-Cu-Mg Alloy 8090” in *Proc. of International Symposium on Advances in Production and Fabrication of Light Metals*, Eds., M.M. Avedesian and L.J. Larouche, The Metallurgical Society of CIM, Canada, 1992, 339-349.
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## IX. Technical Presentations

1. A.A. Luo, “Lightweight Materials and Sustainable Manufacturing: The Role of Integrated Computational Materials Engineering (ICME)”, *All-Conference Plenary Presentation*, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
2. D. Cho, T. Avey, A. Chmielewska, D. Dean, A.A. Luo, “Gas Atomization of Mg-Zn-Ca-Mn Alloy Powder for Additive Manufacturing”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
3. M.P. Moodispaw, E. Cinkilic, A.A. Luo, “The Beneficial Effects of Ce Additions on High-Fe Secondary Al-Si Casting Alloys”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
4. M.P. Moodispaw, E. Cinkilic, A.A. Luo, “Development of Al-Ce-(Fe)-(Mg) Alloys for Elevated Temperature and High Strength Applications”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
5. N. Balasubramani, M.P. Moodispaw, G. Garcia, C. Zhang, A.A. Luo, “Role of Alloying Elements and Solidification Conditions on the Evolution of Fe-rich Intermetallic Phases in Recycled Al-Si Alloys with Higher Fe”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
6. A. Chmielewska, D. Cho, T. Avey, D. Dean, A.A. Luo, “Characterization of Biodegradable Mg-1.2Zn-0.5Ca-0.5Mn Alloy Powder for Additive Manufacturing”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
7. M. Hartsfield, A. Nassiril, L. Hu, A.A. Luo, “Dissimilar Material Joining of Superwood to Aluminum by Self-Pierce Riveting and Rivbonding”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
8. J. Zhang, J. Li, J. Miao, Y. Mao, X. Huang, A. Vivek, G. Daehn, A.A. Luo, “Improved Strength in Mg-Al Dissimilar Impact Welding by Surface Nanocrystallization of Mg Alloy Sheet”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
9. J. Miao, F. Xue, T. Liu, T. Avey, E. Marquis, A.A. Luo, “Role of Guinier-Preston Zones in Achieving High Strength-ductility in a New Mg-Zn-Al-Ca-Mn-Ce Sheet Alloy”, Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.

10. J. Miao, X. Huang, A.A. Luo, "Study of Microstructure and Deformation Behavior of MnFeNi Medium Entropy Alloy", Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
11. N. Trometer, M. Moodispaw, W. Cai, T. Rinker, S. Kamat, Z. Velasco, A.A. Luo, "Investigating Hydrogen Porosity in Aluminum Laser Welding Using a Three-dimensional Cellular Automaton Model", Materials Science and Technology Conference (MS&T23), Columbus, OH, October 2-4, 2023.
12. A.A. Luo, "Sustainable Aluminum Casting Development", *Invited Talk*, Honda Research & Development Americas, Raymond, OH, January 13, 2023.
13. A.A. Luo, "Advanced Materials and Sustainable Manufacturing", *Invited Talk*, IIT Bombay-Ohio State Frontier Center's Fall 2022 Research Seminar, November 16, 2022.
14. A.A. Luo, "Sustainable Aluminum Die Casting Development", REMADE Education and Workforce Development Webinar, October 29, 2022.
15. J. Zhang, N. Trometer, A.A. Luo, "An Investigation of Externally Solidified Crystal Formation in Aluminum High Pressure Die Casting", Die Casting Congress & Exposition, Lexington, KY, September 13-15, 2022.
16. M.P. Moodispaw, E. Cinkilic, A.A. Luo, C. Zhang, F. Zhang, "Using Cerium to Neutralize Iron in Recycled Aluminum Alloys", Die Casting Congress & Exposition, Lexington, KY, September 13-15, 2022.
17. J. Zhang, A.A. Luo, X. Yang, J. Zhang, D. Eblen, W.P. Liao, Y.L. Chu, "Additive Manufacturing Material for Conformal Cooling Line Water Corrosion Resistance Investigation", Die Casting Congress & Exposition, Lexington, KY, September 13-15, 2022.
18. A.A. Luo, "Modeling of Diffusion and Intermetallic Phase Formation in Bimetallic Applications", *Keynote Talk*, IMAT 2022 Conference, New Orleans, LA, September 12-15, 2022.
19. A.A. Luo, "Structural Die Cast Alloy Development from Scrap Aluminum", IMAT 2022 Conference, New Orleans, LA, September 12-15, 2022.
20. A.A. Luo, "Lightweight Materials and Sustainable Manufacturing: The Role of Integrated Computational Materials Engineering (ICME)", *Invited Talk*, IMDEA Materials Institute, Madrid, Spain, September 5, 2022.
21. A.A. Luo, "Magnesium Applications: Past, Present and Future", *Invited Talk*, 79<sup>th</sup> International Magnesium Association World Virtual Conference, Barcelona, Spain, August 29-31, 2022.
22. D.H. Cho, T. Avey, D. Dean, A.A. Luo, "Evaluation of bioresorbable squeeze cast Mg-Zn-Ca-Mn alloys," The 14<sup>th</sup> Biometal Conference, Alicante, Spain, August 24-29, 2022.
23. T. Avey, D.H. Cho, D. Dean, A.A. Luo, "Effect of Zn/Ca Ratio on Corrosion and Mechanical Properties of Mg-Zn-Ca-Mn Biodegradable Alloys," The 14<sup>th</sup> Biometal Conference, Alicante, Spain, August 24-29, 2022.
24. A. Chmielewska, T. Avey, D.H. Cho, A.A. Luo, D. Dean, "Binder jetting additive manufacturing of bioresorbable WE43 alloy: challenges encountered in post-process sintering," The 14<sup>th</sup> Biometal Conference, Alicante, Spain, August 24-29, 2022.
25. A.A. Luo, "Lightweight Materials and Advanced Manufacturing: The Role of Integrated Computational Materials Engineering (ICME)", *Invited Talk*, University of British Columbia, Vancouver, BC, Canada, August 10, 2022.
26. A.A. Luo, M. Hartsfield, B. Chen, Y. Liu, L. Hu, T. Li, "Dissimilar material joining and potential automotive applications of densified 'superwood' materials", *Invited Talk*, 2<sup>nd</sup> Sustainable Materials Research Summit (SMART 2022), Vancouver, BC, Canada, August 7-9, 2022.
27. A.A. Luo, E. Cinkilic, M.P. Moodispaw, J. Zhang, "Neutralizing Iron "Impurity" in Cast Aluminum Alloys", *CastExpo and Metalcasting Congress*, Columbus, OH, April 23-26, 2022.
28. M.P. Moodispaw, B. Chen, A.A. Luo, Q. Wang, "Achieving Metallurgical Bonding in Aluminum/Steel Bimetallic Castings", *CastExpo and Metalcasting Congress*, Columbus, OH, April 23-26, 2022.
29. J. Zhang, X. Huang, M.P. Moodispaw, J. Miao, A.A. Luo, "Liquid mixing and casting process for aluminum matrix composites with high entropy alloy particles", *CastExpo and Metalcasting Congress*, Columbus, OH, April 23-26, 2022.
30. A.A. Luo, "Lightweight Materials and Advanced Manufacturing", *Invited Talk*, University of California, Los Angeles, CA, March 31, 2022.

31. A.A. Luo, “Lightweight Materials and Advanced Manufacturing: The Role of Integrated Computational Materials Engineering (ICME)”, **Invited Talk**, University of California, Irvine, CA, March 9, 2022.
32. A.A. Luo, T. Avey, J. Miao, J.M. Meier, “Magnesium Alloy Development for Structural and Biomedical Applications”, **Keynote Talk**, *Magnesium Technology 2022 Symposium*, TMS Annual Meeting, Anaheim, CA, USA, February 27 – March 3, 2022.
33. E. Cinkilic, M.P. Moodispaw, J. Zhang, A.A. Luo, “Increasing Secondary Alloy Usage in Aluminum Die Casting Industry”, **Invited Talk**, *REWAS 2022 Conference*, TMS Annual Meeting, Anaheim, CA, USA, February 27 – March 3, 2022.
34. E. Cinkilic, M.P. Moodispaw, J. Zhang, A.A. Luo, “Porosity Formation in High Pressure Die Casting: Experiments and Simulations”, TMS Annual Meeting, Anaheim, CA, USA, February 27 – March 3, 2022.
35. M.P. Moodispaw, C. Gu, A.A. Luo, Q. Wang, “Cellular Automaton Simulation of Three-dimensional Microstructure Evolution during Powder Bed Fusion Additive Manufacturing”, Materials Science and Technology Conference (MS&T21), October 17-20, 2021.
36. N. Trometer, E. Cinkilic, L. Godlewski, E. Prabhu, A.A. Luo, “Effect of Vacuum Level on Porosity and Mechanical Properties of Aluminum Alloys in High-pressure Die Casting”, Materials Science and Technology Conference (MS&T21), October 17-20, 2021.
37. A.A. Luo, E. Cinkilic, J. Zhang, X. Wang, B. Cullen, Y. Chu, P. Cheng, “Increasing Melt Efficiency and Secondary Alloy Usage in Aluminum Die Casting”, Die Casting Congress & Exposition, October 4-6, 2021.
38. N.D. Campos Neto, A.L. Korenyi-Both, S.P. Midson, M.J. Kaufman, P. Brancaleon, R. Brune, A.A. Luo, C. Vian, “The Use of Coatings to Minimize Soldering and Eliminate the Need for Lubrication during Aluminum High Pressure Die Casting”, Die Casting Congress & Exposition, October 4-6, 2021.
39. A.A. Luo, “Material Design Using a CALPHAD-based ICME Approach”, **Keynote Talk**, 19<sup>th</sup> International Materials Design Symposium, Virtual Meeting, August 27, 2021.
40. A.A. Luo, “Magnesium Overview and Applications”, **Invited Talk**, 78<sup>th</sup> International Magnesium Association World Virtual Conference, August 23-27, 2021.
41. T. Avey, A.A. Luo, “Phase-focused micro-galvanic corrosion of Mg-Ca-Zn Alloys”, 13<sup>th</sup> Biometal 2021, August 23-26, 2021.
42. A. Chmielewska, B. Wysocki, K. Bogdanowicz, Ł. Źrodowski, W. Świążkowski, A.A. Luo, D. Dean, “Optimization of SLM parameters for 3D printing pure magnesium”, 13<sup>th</sup> Biometal 2021, August 23-26, 2021.
43. R. Shi, J. Miao, A.A. Luo, “Towards Room-temperature Forming of Magnesium Sheet Alloys”, 13<sup>th</sup> International Conference on the Technology of Plasticity (ICTP 2021), Virtual Event, July 25-30, 2021.
44. T. Avey, J. Caris, A.A. Luo, “Process Map and Extrusion Properties of New ZAXEM11100 Alloy”, **Invited Talk**, Mg 2021 - 12<sup>th</sup> International Conference on Magnesium Alloys and their Applications, Virtual Conference, June 15-18, 2021.
45. T. Avey, A.A. Luo, D. Dean, “Effects of Phase Fractions on Mechanical and Corrosion Properties of Mg-0.5Ca-0.5Mn-xZn Alloys”, Mg 2021 - 12<sup>th</sup> International Conference on Magnesium Alloys and their Applications, Virtual Conference, June 15-18, 2021.
46. A.A. Luo, “Integrated Computational Materials Engineering (ICME) for Automotive Lightweighting”, **Keynote Talk**, SAE World Congress Digital Summit, April 13-15, 2021.
47. E. Cinkilic, M.P. Moodispaw, A.A. Luo, Y. Chu, X. Yan, F. Caron, “Melt-Refractory Interactions during Aluminum Melt Processing”, AFS Metalcasting Congress 2021, April 12-22, 2021.
48. M.P. Moodispaw, E. Cinkilic, A.A. Luo, “Thermodynamic Modeling of Solid Flux Interactions with Molten Aluminum”, AFS Metalcasting Congress 2021, April 12-22, 2021.
49. S.E. Jordan, M.E. DeBruin, E. Cinkilic, A.A. Luo, “Thin Walled Ductile Iron In Lost Foam and Nobake Casting”, AFS Metalcasting Congress 2021, April 12-22, 2021.
50. A.A. Luo, “Modeling of Diffusion and Intermetallic Phase Formation in Al-Mg Bimetallic Structures”, **Invited Talk**, TMS Virtual Annual Meeting, March 15-18, 2021.
51. A.A. Luo, R. Shi, J. Miao, T. Avey, “Magnesium Sheet Alloy Development for Room Temperature Forming”, **Invited Talk**, TMS Virtual Annual Meeting, March 15-18, 2021.

52. C. Gu, M. Moodispaw, C. Ridgeway, A.A. Luo, “Cellular Automaton Modeling of Solidification Microstructure and Microporosity in Multi-component Aluminum Alloys”, TMS Virtual Annual Meeting, March 15-18, 2021.
53. J. Meier, J. Caris, A.A. Luo, “Effects of Hot Isostatic Pressing on the Microstructure and Properties of Mg-Gd-Y-Zn Alloys”, TMS Virtual Annual Meeting, March 15-18, 2021.
54. N. Trometer, X. Huang, E. Cinkilic, A.A. Luo, “Effect of Vacuum during Flow in High-pressure Die Casting: Water Analog Experiments”, TMS Virtual Annual Meeting, March 15-18, 2021.
55. A.A. Luo, “Magnesium Technology Development: Opportunities and Challenges”, *Plenary Session Talk*, The 7<sup>th</sup> International Conference on Magnesium, Shenyang, China, November 19-22, 2020.
56. A.A. Luo, “New Magnesium Alloys for Room-Temperature Forming and Biomedical Applications”, International Magnesium Association Virtual Conference, October 22, 2020.
57. E. Cinkilic, M.P. Moodispaw, A.A. Luo, Y. Chu, P. Brancaloni, “Thermodynamic Modeling and Experimental Investigation of Refractory Materials Used in Aluminum Die Casting”, Virtual Die Casting Congress & Tabletop, October 20-22, 2020.
58. N. Trometer, X. Hang, E. Cinkilic, A.A. Luo, L. Godlewski, E. Prabhu, J. Zindel, “Water Analog Experiments and Simulation of Vacuum High-Pressure Die Casting of Aluminum”, Virtual Die Casting Congress & Tabletop, October 20-22, 2020.
59. A.A. Luo, “Advanced Light Metals and Manufacturing for Automotive Lightweighting”, *Keynote Talk*, The 59<sup>th</sup> Conference of Metallurgists, COM 2020, October 14-15, 2020.
60. A.A. Luo, “Metal Matrix Composites and Magnesium Research”, *Invited Talk*, The 59<sup>th</sup> Conference of Metallurgists, COM 2020, October 14-15, 2020.
61. T. Avey, A.A. Luo, D. Dean, “Effects of Phase Fractions on Mechanical and Corrosion Properties of Mg-Zn-Ca-Mn alloys”, Updates in Bioabsorbable Metals 2020 Virtual Symposium, August 24-25, 2020.
62. D. Dean, A.A. Luo, M. Groeber, S. Niezgodka, G. Daehn, “The use of resorbable metals in clinical point-of-care manufacturing: Distributed manufacturing during and after the era of COVID-19”, Updates in Bioabsorbable Metals 2020 Virtual Symposium, August 24-25, 2020.
63. C. Gu, A.A. Luo, “Three-Dimensional Numerical Simulation of Solidification Microporosity and Microstructure of Aluminum Alloys”, *MCWASP XV: Modelling of Casting, Welding and Advanced Solidification Processes*, online conference, June 22-23, 2020.
64. A.A. Luo, “Development of New Cost-Effective Methods for Removing Trace Contaminants in Recycled Metals,” *Invited Talk*, Department of Energy Al-Ce Alloy Information Session, March 5, 2020.
65. A.A. Luo, “The Future of Light Metals Technology and Education: Opportunities and Challenges”, *Keynote Talk*, TMS Annual Meeting, San Diego, CA, USA, February 23-27, 2020.
66. H. Ibrahim, A.A. Luo, D. Dean, R. Advincula, M. Elahinia, “An Mg-Zn-Ca-based Alloy and a Biocompatible Ceramic Coating Towards Resorbable Bone Fixation Devices”, *Invited Talk*, TMS Annual Meeting, San Diego, CA, USA, February 23-27, 2020.
67. X. Huang, J. Miao, A.A. Luo, “Development of CuFeMnNi-based High Entropy Alloys Using CALPHAD Approach and Thermomechanical Processing”, *Invited Talk*, TMS Annual Meeting, San Diego, CA, USA, February 23-27, 2020.
68. E. Cinkilic, C. Ridgeway, X. Yan, A.A. Luo, “Thermodynamic Modeling and Experimental Validation of Iron-Containing Intermetallic Phase Formation in Recycled Cast Aluminum Alloys”, *Invited Talk*, TMS Annual Meeting, San Diego, CA, USA, February 23-27, 2020.
69. J. Meier, J. Caris, A.A. Luo, “CALPHAD Modeling and Microstructure Investigation of Mg-Gd-Y-Zn Alloys”, TMS Annual Meeting, San Diego, CA, USA, February 23-27, 2020.
70. A.A. Luo, E. Cinkilic, “Increasing Secondary Alloy Usage in Aluminum Die Casting Industry”, REMADE Webinar, December 2, 2019.
71. X. Huang, J. Miao, A.A. Luo, “Material Design and Process Development for Lightweight High Entropy Alloys and Composites”, World Congress on High Entropy Alloys, Seattle, WA, November 17-20, 2019.
72. A.A. Luo, “Advanced Lightweight Materials and Manufacturing: The Role of Integrated Computational Materials Engineering (ICME),” *Invited Talk*, The University of Tennessee, Knoxville, TN, October 16, 2019.

73. C. Gu, Y. Lu, E. Cinkilic, J. Miao, A.A. Luo, X. Yan, "Three-Dimensional Grain Structure Simulation in High Pressure Die Casting of Aluminum Alloys", 2019 Die Casting Congress, Cleveland, OH, October 1-3, 2019. Paper T19-031.
74. A.A. Luo, "Alloy Development and Process Innovations for Lightweight Alloys", Materials Science and Technology (MS&T) Conference, Portland, OR, September 29 - October 3, 2019.
75. H. Ibrahim, D. Dean, R. Rigoberto, M. Elahinia, A.A. Luo, "PEO/Sol-gel Composite Coating on a Mg-based Alloy Towards Degradation-controlled Orthopedic Implants", Materials Science and Technology (MS&T) Conference, Portland, OR, September 29 - October 3, 2019.
76. A.A. Luo, J. Miao, C. Zhang, F. Zhang, "Computational Simulation and Experimental Validation of Precipitation Microstructure and Strengthening in Mg-Al-Sn Based Alloys", Materials Science and Technology (MS&T) Conference, Portland, OR, September 29 - October 3, 2019.
77. A.A. Luo, T. Avey, D. Dean, "Designing Bioresorbable Magnesium Alloys Using an Integrated Computational Materials Engineering (ICME) Approach," The 11<sup>th</sup> Biometal Conference, Alicante, Spain, August 25-30, 2019.
78. A. Chmielewska, T. Avey, D. Dean, A.A. Luo, "Biocompatibility of a Work Hardened Mg-1.2Zn-0.5Ca-0.5Mn Alloy for Skeletal Fixation Devices," The 11<sup>th</sup> Biometal Conference, Alicante, Spain, August 25-30, 2019.
79. A.A. Luo, "Advanced Light Metals and Processing: Alloy Development and Process Innovations," **Keynote Talk**, Symposium C: Light Metals and Alloys, The 10<sup>th</sup> Pacific Rim International Conference on Advanced Materials and Processing (PRICM10), Xi'an, China, August 18-22, 2019.
80. A.A. Luo, "Integrated Computational Materials Engineering (ICME) for Lightweight Metallic Materials and Manufacturing," **Invited Talk**, Symposium L: Computational Design and Simulation of Materials, The 10<sup>th</sup> Pacific Rim International Conference on Advanced Materials and Processing (PRICM10), Xi'an, China, August 18-22, 2019.
81. A.A. Luo, "Applications of CALPHAD Modeling and Integrated Computational Materials Engineering in Advanced Lightweight Metallic Materials," **Plenary Session Talk**, 5<sup>th</sup> World Congress on Integrated Computational Materials Engineering (ICME 2019), July 21-25, 2019.
82. T. Berman, D. Apelian, A.A. Luo, J. Shah, J. Allison, "Development of ICME Methods to Improve High Pressure Die Casting (HPDC) Technologies for Thin-wall Aluminum Components," 5<sup>th</sup> World Congress on Integrated Computational Materials Engineering (ICME 2019), July 21-25, 2019.
83. M. Moodispaw, C. Gu, C. Ridgeway, Y. Lu, A.A. Luo, "Cellular Automaton Simulation of Hydrogen Porosity and Dendrite Growth During Solidification of a Ternary Al Alloy," Poster Presentation, 5<sup>th</sup> World Congress on Integrated Computational Materials Engineering (ICME 2019), July 21-25, 2019.
84. S. Sutton, A.A. Luo, "Constitutive Modeling and Processing Maps of Magnesium and Aluminum Alloys", **Invited Talk**, The 13<sup>th</sup> International Conference on Numerical Methods in Industrial Forming Processes, Portsmouth, New Hampshire, USA, June 23-27, 2019.
85. C. Gu, C.D. Ridgeway, A.A. Luo, "Predicting Solidification Microstructure in Aluminum Castings Using an Integrated Computational Materials Engineering (ICME) Approach", **Invited Talk**, 5<sup>th</sup> International Conference on Advances in Solidification Processes (ICASP-5) and 5<sup>th</sup> International Symposium on Cutting Edge of Computer Simulation of Solidification, Casting and Refining (CSSCR-5), Salzburg, Austria, June 17-21, 2019.
86. Z. Liang, J. Miao, J.C. Williams, A.A. Luo, "Titanium Alloy Design and Casting Process Development Using an Integrated Computational Materials Engineering (ICME) Approach", The 14<sup>th</sup> World Conference on Titanium, Nantes, France, June 10-14, 2019.
87. C. Zhang, J.S. Miao, S.L. Chen, F. Zhang, A.A. Luo, J. Zhu, W.S. Cao, D.C. Lv, "CALPHAD-based Modeling of Cooling Rate Influence on Solidification Microstructure in Magnesium Alloys", CALPHAD XLVIII, Singapore, June 2 - June 7, 2019.
88. A.A. Luo, "Recent Developments of Magnesium Sheet Alloys for Automotive Applications," **Invited Talk**, 76<sup>th</sup> World Magnesium Conference, Budapest, Hungary, May 16-17, 2019.
89. A.A. Luo, "Solidification of Aluminum and Magnesium Alloys: Modeling and Experiments", **Invited Talk**, TMS Annual Meeting, San Antonio, TX, USA, March 10-14, 2019.

90. A.A. Luo, P. Rohatgi, M. Azer, “Manufacturing Materials Optimization Research at The REMADE Institute”, *Invited Talk*, TMS Annual Meeting, San Antonio, TX, USA, March 10-14, 2019.
91. C.D. Ridgeway, C. Gu, A.A. Luo, “Understanding Compositional Effects of Dendritic Solidification via Directional Solidification and Cellular Automaton Simulation”, TMS Annual Meeting, San Antonio, TX, USA, March 10-14, 2019.
92. A.A. Luo, “30 Years of Magnesium Alloy Development”, *Invited Talk*, Scientific Colloquium on the Occasion of Professor Karl Ulrich Kainer’s Retirement, Hamburg, Germany, January 24, 2019.
93. A.A. Luo, “Integrated Computational Materials Engineering (ICME) for Lightweight Metallic Materials and Manufacturing”, *Invited Seminar*, Air Force Research Lab, Wright-Patterson AFB, OH, December 4, 2018.
94. A.A. Luo, “Advanced Casting Technologies for Light Metals”, *Invited Talk*, International Conference on Die Casting, Squeeze Casting and Semi-solid Casting, Zhuhai, China, November 24-25, 2018.
95. A.A. Luo, J. Miao, C. Zhang, “Modeling of Solidification and Precipitation in Magnesium Alloys”, *Invited Talk*, Materials Science and Technology (MS&T) Conference, Columbus, OH, October 15-18, 2018.
96. P. Rohatgi, A.A. Luo, M. Azer, “DOE REMADE Institute to Reduce Embodied Energy and Reduce Emissions”, *Invited Talk*, Materials Science and Technology (MS&T) Conference, Columbus, OH, October 15-18, 2018.
97. E. Cinkilic, X. Yan, A.A. Luo, “Modeling Precipitation of Strengthening Phases and Mechanical Properties of Cast Aluminum Alloys”, Materials Science and Technology (MS&T) Conference, Columbus, OH, October 15-18, 2018.
98. Y. Lu, A.A. Luo, K. Ripplinger, D. Detwiler, “Simulation and Evaluation of H13 Steel Thermal Fatigue Life in Die Casting”, 2018 Die Casting Congress & Exposition, Indianapolis, IN, Oct. 15-17, 2018.
99. A.A. Luo, "Solidification and Precipitation Kinetics in Magnesium Alloys," *Plenary Session Talk*, The 11<sup>th</sup> International Conference on Magnesium Alloys and Their Applications, Old Windsor, UK, July 24-27, 2018.
100. Z. Liang, E. Cinkilic, X. Huang, W. J. Miao, A.A. Luo, “Micro-tension Testing and Micro-scale Strengthening Mechanisms of Lightweight Alloys”, 18<sup>th</sup> International Conference on the Strength of Materials (ICSMA 18), Columbus, OH, USA, July 15-19, 2018.
101. J. Miao, C. Zhang, W. Sun, A. Klarner, A.A. Luo, “Modeling of Precipitation Microstructure and Yield Strength of Mg-Al-Sn based Magnesium Alloys”, 18<sup>th</sup> International Conference on the Strength of Materials (ICSMA 18), Columbus, OH, USA, July 15-19, 2018.
102. H. Ibrahim, A.D. Klarner, A.A. Luo, D. Dean, M. Elahinia, “A Magnesium Alloy and Post-Fabrication Techniques Towards Biodegradable Implants”, 18<sup>th</sup> International Conference on the Strength of Materials (ICSMA 18), Columbus, OH, USA, July 15-19, 2018.
103. D. Dean, H. Ibrahim, A.D. Klarner, J. Meier, A.A. Luo, R. Advincula, A. Bertone, I. Valerio, P. Larsen, H. Emam, R. Skoracki, M. Miller, M. Elahinia, “Corrosion of Heat- and MAO-Treated Mg-1.2Zn-0.5Ca-0.5Mn: A Candidate Alloy for Bioresorbable Skeletal Fixation”, 18<sup>th</sup> International Conference on the Strength of Materials (ICSMA 18), Columbus, OH, USA, July 15-19, 2018.
104. J. Pan, P. Fu, L. Peng, B. Hu, H. Yue, A.A. Luo, “Basal Slip Dominant Fatigue Damage Behavior in Cast Mg-8Gd-3Y-Zr Alloy”, 18<sup>th</sup> International Conference on the Strength of Materials (ICSMA 18), Poster Presentation, Columbus, OH, USA, July 15-19, 2018.
105. A.A. Luo, " Magnesium Alloy Development and Advanced Processing: The Role of Computational Thermodynamics and Kinetics," *Plenary Session Talk*, Frontier Forum on Advanced Light Metals, Shanghai, China, June 23, 2018.
106. A.A. Luo, "Magnesium – The Lightest Structural Metal," *Invited Talk*, 75<sup>th</sup> World Magnesium Conference, New Orleans, LA, USA, May 16-18, 2018.
107. A.A. Luo, "Design and Development of Advanced Lightweight Metallic Materials," OSU Materials Week, Columbus, OH, USA, May 8-10, 2018.
108. A.A. Luo, J. Miao, C. Zhang, W. Sun, A. Klarner, F. Zhang, “Thermodynamic and Kinetic Modeling of Solidification and Precipitation Microstructure in Magnesium Alloys”, *Invited Talk*, TMS Annual Meeting, Phoenix, AZ, USA, March 11-15, 2018.

109. Y. Lu, A.A. Luo, K. Ripplinger, G. Taber, Y. Mao, D. Detwiler, "Process Simulation of H13 Steel Dipping into Molten Aluminum and Prediction of its Thermal Fatigue Cracking", Computational Design and Simulation of Materials (CDSM 2018), Phoenix, AZ, USA, March 11-15, 2018.
110. X. Huang, J. Miao, M. Ghazisaeidi, A.A. Luo, "Investigation of Order-disorder Transition in Multi-principal-element Alloys", poster presentation, CALPHAD XLVI Conference, Saint-Malo, France, June 11-16, 2017.
111. A.A. Luo, "Alloy Development and Advanced Processing for Light Metals: The Role of Integrated Computational Materials Engineering (ICME)", EUROMAT2017, Thessaloniki, Greece, from 17 – 22 September, 2017.
112. A.D. Klarner, E. Cinkilic, Y. Lu, J. Brevick, A.A. Luo, J. Shah, M. Zolnowski, X. Yan, "A New Fluidity Die for Castability Evaluation of High Pressure Die Cast Alloys", 2017 Die Casting Congress, Atlanta, GA, September 18-20, 2017.
113. A.A. Luo, H. Wang, E. Cinkilic, A. Klarner, C. Ridgeway, X. Yan, "Integrated Computational Materials Engineering (ICME) for Aluminum Die Casting", *Plenary Session Talk*, The 10<sup>th</sup> Pacific Rim International Conference on Modeling of Casting and Solidification Processes, Beijing, China, August 20-23. 2017.
114. Y. Lu, K. Ripplinger, H. Wang, A.A. Luo, D. Detwiler, "Simulation of Sand and Steel Mold Cracking in Casting Processes", The 10<sup>th</sup> Pacific Rim International Conference on Modeling of Casting and Solidification Processes, Beijing, China, August 20-23. 2017.
115. S. Shang, Z. Han and A.A. Luo, "Phase field simulation on the growth kinetics of pressurized solidification of a Mg-Al-Sn alloy", poster presentation, The 10<sup>th</sup> Pacific Rim International Conference on Modeling of Casting and Solidification Processes, Beijing, China, August 20-23. 2017.
116. X. Huang, J. Miao, M. Ghazisaeidi, A.A. Luo, "Development of Lightweight High Entropy Alloys Using Coupled CALPHAD-DFT Modeling", Poster Presentation, TMS Annual Meeting, San Diego, CA, USA, February 27-March 2, 2017.
117. A.A. Luo, "Enhancing the Ductility of Cast and Wrought Magnesium Alloy Products," **Invited Talk**, 74<sup>th</sup> World Magnesium Conference, Singapore, May 21-23, 2017.
118. Y. Lu, H. Wang, K. Ripplinger, A.A. Luo, "Process Simulation and Experimental Validation of Resin-Bonded Silica Sand Mold Casting", 121<sup>st</sup> Metalcasting Congress Milwaukee, WI, April 25-27, 2017, American Foundry Society.
119. A.A. Luo, "Magnesium Alloy Design and Process Development Using Integrated Computational Materials Engineering (ICME) Approaches," **Invited Talk**, Magnesium Workshop, Johns Hopkins University, Baltimore, MD, April 3 – 4, 2017.
120. A.A. Luo, "Integrated Computational Materials Engineering for Automotive Light Metals", **Invited Talk**, TMS Annual Meeting, San Diego, CA, USA, February 27-March 2, 2017.
121. A.A. Luo, "Magnesium Development as a Lightweight Material - In Competition with Other Structural Materials", **Keynote Talk**, Magnesium Technology 2017 Symposium, TMS Annual Meeting, San Diego, CA, USA, February 27-March 2, 2017.
122. A. Klarner, W. J. Miao, A.A. Luo, "Microstructure and Mechanical Properties of High Pressure Die Cast Mg-Al-Sn-Si Alloys", Magnesium Technology 2017 Symposium, TMS Annual Meeting, San Diego, CA, USA, February 27-March 2, 2017.
123. X. Huang, W. Sun, W. J. Miao, A.A. Luo, "Development of Lightweight High Entropy Alloys Using a CALPHAD Approach", Poster Presentation, TMS Annual Meeting, San Diego, CA, USA, February 27-March 2, 2017.
124. A.A. Luo, "Magnesium Ductility Enhancement Through Alloy Design and Innovative Processing," **Keynote Talk**, PLASTICITY 2017, Puerto Vallarta, Mexico, Jan. 3-9, 2017.
125. A.A. Luo, W. Sun, X. Huang, "Development of Lightweight High-Entropy Alloys Using CALPHAD Modeling and Experimental Validation", **Invited Talk**, International Conference on High-Entropy Materials (ICHEM 2016), Hsinchu, Taiwan, November 6-9, 2016.
126. A.A. Luo, "Advanced Light Metals and Manufacturing for Structural Applications," **Keynote Talk**, Materials Science and Technology 2016, Salt Lake City, UT, October 23-27, 2016.

127. A.A. Luo, "The Role of Integrated Computational Materials Engineering (ICME) in Light Alloy Development and Advanced Processing," **Invited Talk**, Arkema Materials Science and Engineering Seminar, Pennsylvania State University, University Park, PA, October 20, 2016.
128. A.A. Luo, "Integrated Computational Materials Engineering (ICME) for Light Metals Casting," **Invited Talk**, the 8<sup>th</sup> Chinese Die Casting, Squeeze Casting and Semi-solid Casting Conference, Nantong, China, October 13 - 15, 2016.
129. A.A. Luo, "Alloy Development and Advanced Processing for Light Metals: The Role of Integrated Computational Materials Engineering (ICME)," **Invited Talk**, International Forum on Advanced Structural Materials, Beijing, China, October 10 - 12, 2016.
130. A.A. Luo, W. Sun, E. Cinkilic, Z. Liang, "Application of CALPHAD Modeling in the Development of Light Metals," CALPHAD XLV Conference, Awaji, Japan, May 29 - June 3, 2016.
131. A.A. Luo, "Automotive Lightweighting – The Role of Magnesium in Competition with Other Materials," **Invited Talk**, 73<sup>rd</sup> World Magnesium Conference, Rome, Italy, May 15-17, 2016.
132. A.A. Luo, "Light Metals and Manufacturing Research Laboratory at The Ohio State University", **Invited Talk**, University of Rouen, Rouen, France, May 11, 2016.
133. A.A. Luo, "Alloy Development and Advanced Processing for Light Metals: The Role of Thermodynamics and Kinetics", **Invited Talk**, University of Michigan, Ann Arbor, MI, USA, March 23, 2016.
134. A.A. Luo, "Advanced Materials and Manufacturing for Lightweighting", **Invited Talk**, University of Hawaii at Manoa, March 17, 2016.
135. A.A. Luo, "Material Design and Development: From Classical Thermodynamics to CALPHAD and ICME Approaches", **Invited Talk**, TMS Annual Meeting, Nashville, TN, USA, February 14-18, 2016.
136. A. Klarner, W. Sun, J. Meier, A.A. Luo, "Development Of Mg-Al-Sn-Si Alloys Using A CALPHAD Approach", TMS Annual Meeting, Nashville, TN, USA, February 14-18, 2016.
137. W. Zhong, W. Sun, A.A. Luo, J.-C. Zhao, "Develop a Mg Diffusivity Database Using Diffusion Multiples and Liquid-Solid Diffusion Couples", TMS Annual Meeting, Nashville, TN, USA, February 14-18, 2016.
138. Z. Liang, C. Wei, J.-C. Zhao, A.A. Luo, "Kinetics Investigation of Titanium-Based Multicomponent System Using Liquid-Solid Diffusion Couples", TMS Annual Meeting, Nashville, TN, USA, February 14-18, 2016.
139. A.A. Luo, W. Sun, W. Zhong, J.-C. Zhao, "Computational Thermodynamics and Kinetics for Magnesium Alloy Development," **Keynote Talk**, the 10<sup>th</sup> International Conference on Magnesium Alloys and Their Applications (Mg 2015), Jeju, Korea, October 11-16, 2015.
140. A.D. Klarner, W. Tullos, A.A. Luo, J. Brevick, "Overcasting Development for Multi-Material Manufacturing in High Pressure Die Casting", Materials Science & Technology 2015 Conference (MS&T2015), Columbus, OH, October 4-8, 2015.
141. W. Zhong, W. Sun, J.-C. Zhao, A.A. Luo, "Establish a Mg Diffusivity Database Using Diffusion Multiples and Liquid-Solid Diffusion Couples", Materials Science & Technology 2015 Conference (MS&T2015), Columbus, OH, October 4-8, 2015.
142. W. Sun, C. Zhang, W. Zhong, A.A. Luo, J.-C. Zhao, "Investigation of Microstructure and Microsegregation during Solidification of Mg Alloys", Materials Science & Technology 2015 Conference (MS&T2015), Columbus, OH, October 4-8, 2015.
143. E. Cinkilic, W. Sun, A.A. Luo, "Computational and Experimental Investigation of the Effect of Cooling Rate on Fe-to-Mn Ratio in Al-Si Based Cast Alloys", Materials Science & Technology 2015 Conference (MS&T2015), Columbus, OH, October 4-8, 2015.
144. A.A. Luo, "Material Design and Development: From Classical Thermodynamics to CALPHAD and ICME Approaches," **Invited Talk**, the 1<sup>st</sup> International Conference on Computational Design and Simulation of Materials (CDSM 2015), Shenyang, Liaoning, China, August 17-19, 2015.
145. Z. Liang, W. Sun, Luo, A.A. Luo, J.C. Williams, A.K. Sachdev, "CALPHAD Modeling and Experimental Validation of Multi-Component Systems for Cast Titanium Alloy Development", the **13<sup>th</sup> World Conference on Titanium**, San Diego, CA, USA, August 16-20, 2015.
146. A.A. Luo, "Magnesium Alloy Development and Manufacturing Innovation for Lightweight Applications," **Invited Talk**, 72<sup>nd</sup> World Magnesium Conference, Vancouver, Canada, May 17-19, 2015.



147. J. Jekl, J. Auld, C. Sweet, J.T. Carter, S. Resch, A.D. Klarner, J. Brevick, A.A. Luo, "Development of a Thin-wall Magnesium Side Door Inner Panel for Automobiles," 72<sup>nd</sup> World Magnesium Conference, Vancouver, Canada, May 17-19, 2015.
148. E. Cinkilic, W. Sun, A.D. Klarner, A.A. Luo, "Use of CALPHAD Modeling in Controlling the Microstructure of Cast Aluminum Alloys", 119<sup>th</sup> Metalcasting Congress, Columbus, Ohio, April 21 - 23, 2015, American Foundry Society.
149. A.A. Luo, "Overcasting Process Development for Multi-material Manufacturing", TMS Annual Meeting, Orlando, FL, USA, March 15-19, 2015.
150. S. Sutton, A.A. Luo, "Hot Compression Behavior of Magnesium Alloys ZE20 and AM30", TMS Annual Meeting, Orlando, FL, USA, March 15-19, 2015.
151. W. Sun, C. Zhang, A.D. Klarner, W. Cao, A.A. Luo, "Simulation of Concurrent Precipitation of Two Strengthening Phases in Magnesium Alloys", TMS Annual Meeting, Orlando, FL, USA, March 15-19, 2015.
152. X. Xia, A. Sanaty-Zadeh, R. Chen, X. Zeng, A.A. Luo, D.S. Stone, "Precipitation Sequence in A Mg-Sm-Zn-Zr Alloy", TMS Annual Meeting, Orlando, FL, USA, March 15-19, 2015.
153. H. Pan, Z. Han, A.A. Luo, B. Liu, "Phase Field Simulation on Dendritic Growth in Pressurized Solidification of Mg-Al Alloy", TMS Annual Meeting, Orlando, FL, USA, March 15-19, 2015.
154. A.A. Luo, "Magnesium Alloy Development for Elevated Temperature Applications," AeroMat 2014, Orlando, FL, USA, June 16-19, 2014.
155. A.A. Luo, "Integrated Computational Materials Engineering (ICME) for Light Metals and Manufacturing," **Invited Talk**, CALPHAD XLIII, Changsha, China, June 1-6, 2014.
156. A.A. Luo, "Light Metals and Manufacturing for Lightweight Structures," Ohio State University Materials Week, Columbus, OH, USA, May 6-9, 2014.
157. A.A. Luo, "'Advanced' Manufacturing and ICME," **Invited Talk**, Symposium on Applications of ICME in Advanced Manufacturing Processes, Beijing, China, May 11-12, 2014.
158. A.A. Luo, "Casting Research and Education at OSU," **Keynote Talk**, American Foundry Society Central Ohio Chapter Meeting, Worthington, OH, USA, April 17, 2014.
159. A.A. Luo, "Light Metals and Manufacturing for Vehicle Lightweighting," **Invited Talk**, US-China Symposium on Lightweight Vehicle Technologies, Troy, MI, USA, April 9, 2014.
160. A.A. Luo, "Vehicle Lightweighting: Materials, Manufacturing and Design Integration," **Invited Talk**, Detroit Chinese Engineers Association Technology Conference, Troy, MI, USA, April 6, 2014.
161. A.A. Luo, "Aluminum Alloys and Manufacturing Processes for Automotive Structural Applications," **Invited Talk**, Aluminum Alloys: Development, Characterization and Applications, TMS Annual Meeting, San Diego, USA, February 16-20, 2014.
162. A.A. Luo, "Alloy Development, Manufacturing and Design for Magnesium Applications," **Keynote Talk**, Magnesium Technology 2014, TMS Annual Meeting, San Diego, USA, February 16-20, 2014.
163. X. Xia, A.S. Zadeh, C. Zhang, X. Zeng, A.A. Luo, D. Stone, "Experimental Investigation and Thermodynamic Modeling of the Mg-rich Corner of Mg-Zn-Sm Ternary System", Hume-Rothery Award Symposium: Thermodynamics and Kinetics of Engineering Materials, TMS Annual Meeting, San Diego, USA, February 16-20, 2014.
164. A.A. Luo, "Magnesium Grain Refinement," **Short Course Lecture**, "Grain Refinement of Aluminum and Magnesium Alloys", TMS Annual Meeting, San Diego, USA, February 16-20, 2014.
165. A.A. Luo, "Vehicle Lightweighting Strategy and Research Needs," **Keynote Talk**, Honda R&D Americas, Raymond, OH, USA, December 16, 2013.
166. A.A. Luo, "Design and Manufacturing for Multi-Material Lightweight Applications," **Invited Talk**, PPG Industries R&D Center, Allison Park, PA, December 13, 2013.
167. A.A. Luo, "Light Metals Research and Development for Lightweight Applications," **Invited Talk**, Shanghai Jiao Tong University, Shanghai, China, November 18, 2013.
168. A.A. Luo, "Integrated Computational Materials Engineering for Magnesium Applications," **Invited Talk**, The Fifth International Conference on Magnesium, Qingdao, China, September 23-27, 2013.

169. A.A. Luo, "Lightweighting Using Aluminum and Magnesium," **Invited Talk**, SAE 2013 Vehicle Lightweighting Forum, Shanghai, China, September 10-11, 2013.
170. A.A. Luo, "Light Metals Manufacturing and Integrated Computational Materials Engineering (ICME)," **Invited Talk**, National Science Foundation Advanced Manufacturing Workshop, Arlington, VA, August 12-13, 2013.
171. A.A. Luo, "Application of Computational Thermodynamics and CALPHAD in Magnesium Alloy Development," the 2nd World Congress on Integrated Computational Materials Engineering, Salt Lake City, UT, USA, July 8-11, 2013.
172. A.A. Luo, L. Gao, M. Liu, B. Hu, A.K. Sachdev, P. Wang, J. Wang, "High-Performance Magnesium Alloys for Vehicle Mass Reduction," **Keynote Talk**, International Magnesium Association (IMA) 2013 Annual World Conference, Xi'an, China, May 19-21, 2013.
173. A.A. Luo, "Magnesium-Intensive Front End Sub-Structure Development", U.S. Department of Energy Hydrogen and Fuel Cells Program and Vehicle Technologies Program Annual Merit Review and Peer Evaluation Meeting, Washington, D.C., May 13-16, 2013.
174. K.N. Kulkarni, A.A. Luo, "Interdiffusion and Phase Growth Kinetics in Magnesium-Aluminum Binary System", **Invited Talk**, NIST Diffusion Workshop Series, Gaithersburg, MD, May 8-9, 2013.
175. A.A. Luo, "Magnesium Casting Technology: Past, Present and Future", 117<sup>th</sup> Metalcasting Congress, St. Louis, MO, April 6-9, 2013, American Foundry Society.
176. Q. Ma, B. Li, A.L. Oppedal, P.T. Wang, A. Luo, M. Horstemeyer, "An Experimental and Numerical Study of the Microstructural and Mechanical Properties of an Extruded Magnesium Alloy at 450°C and Varied Strain Rates", SAE 2013 World Congress, Detroit, MI, April 16-18, 2013.
177. A.A. Luo, J.F. Quinn, R. Verma, Y.-M. Wang, D. Wagner, J. Forsmark, X. Su; J. Zindel, M. Li, S. Logan, S. Bilkhu, R.C. McCune, "USAMP Magnesium Front End Research and Development Project – Results of the Magnesium 'Demonstration' Structure", **Keynote Talk**, Magnesium Technology 2013 Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
178. G. Han, Z. Han, A.A. Luo, A.K. Sachdev, B. Liu, "Study on Effects of Interfacial Anisotropy and Elastic Interaction on Morphology Evolution and Growth Kinetics of a Single Precipitate in Mg-Al Alloy by Phase Field Modeling", Modeling of Multi-Scale Phenomena in Materials Processing Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
179. A.S. Zadeh, X. Xia, A.A. Luo, J.E. Jakes, D.S. Stone, "Aging Behavior and Microstructural Evolution in Mg-3Nd-0.2Zn-0.5Zr Alloy", Magnesium Technology 2013 Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
180. L. Gao, A.A. Luo, S. Wang, X. Zeng, "Flow Behavior and Hot Workability of Pre-Extruded AZ80 Magnesium Alloy", Magnesium Technology 2013 Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
181. X. Xia, A.S. Zadeh, C. Zhang, X. Zeng, D. Stone, A.A. Luo, "Phase Stability Investigation of the Mg-Zn-Sm System", Magnesium Technology 2013 Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
182. A.A. Luo, P. Fu, X. Zeng, L. Peng, B. Hu, A.K. Sachdev, "Microstructure and Mechanical Properties of Die Cast Magnesium-Aluminum-Tin Alloys", Magnesium Technology 2013 Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
183. Y. Li, Z. Han, A.A. Luo, A.K. Sachdev, B. Liu, "Study on Microstructure and Mechanical Property of Squeeze Casting AZ91D Magnesium Alloy", Magnesium Technology 2013 Symposium, TMS Annual Meeting, San Antonio, TX, USA, March 11-15, 2013.
184. A.A. Luo, "Advanced Light Metals and Manufacturing for Lightweight Structures", **Invited Talk**, Materials Science and Engineering Colloquium, The Ohio State University, Columbus, OH, October 29, 2012.
185. A.A. Luo, "Alloy Development, Manufacturing and Design for Light Metals Applications", **Invited Lecture**, Shanghai Jiao Tong University, Shanghai, China, September 20, 2012.

186. A.A. Luo, “Lightweight Vehicle Manufacturing and Integrated Computational Materials Engineering (ICME)”, **Invited Talk**, Engineering Frontiers Symposium on Advanced Manufacturing Technology and Through Process Modeling & Simulation, Beijing, China, September 16-18, 2012.
187. A.A. Luo, E. Nyberg, K. Sadayappan, W. Shi, “Magnesium Front End Research and Development: A Canada-China-USA Collaboration”, **Invited Talk**, 9th International Conference on Magnesium Alloys and their Applications, Vancouver, BC, Canada, July 8-12, 2012.
188. A.A. Luo, B.R. Powell, A.K. Sachdev, “Computational Phase Equilibria and Experimental Investigation of Magnesium-Aluminum-Calcium Alloys”, 9th International Conference on Magnesium Alloys and their Applications, Vancouver, BC, Canada, July 8-12, 2012.
189. A.J. Thome, W.Z. Misiolek, A.A. Luo, “New High Ductility Magnesium Alloys for Deformation Processing”, 9th International Conference on Magnesium Alloys and their Applications, Vancouver, BC, Canada, July 8-12, 2012.
190. A.S. Zadeh, X. Xia, J.E. Jakes, C. Zhang, Y.A. Chang, A.A. Luo, D.S. Stone, “Nanoindentation and Broadband Nanoindentation Creep of Primary Dendrites in Mg-0.2% Zn-3% Nd alloy”, 9th International Conference on Magnesium Alloys and their Applications, Vancouver, BC, Canada, July 8-12, 2012.
191. A.A. Luo, “CALPHAD Applications in Magnesium Alloy Development”, CALPHAD XLI Conference, Berkeley, CA, June 3-8, 2012.
192. A.A. Luo, “Magnesium Front End Research and Development”, U.S. Department of Energy Hydrogen and Fuel Cells Program and Vehicle Technologies Program Annual Merit Review and Peer Evaluation Meeting, Washington, D.C., May 14-18, 2012.
193. A.A. Luo, “Integrated Computational Materials Engineering for Light Metals Applications”, **Invited Talk**, NIST Diffusion Workshop Series, Gaithersburg, MD, May 3-4, 2012.
194. A.A. Luo, “Alloy Development and Process Innovation for Lightweight Automotive Structures”, **Invited Talk**, University of Wisconsin, Madison, WI, April 18, 2012.
195. A.A. Luo, “Application of Computational Thermodynamics and CALPHAD in Magnesium Alloy Development”, **Guest Lecture**, “Thermodynamics of Solids”, University of Wisconsin, Madison, WI, April 18, 2012.
196. A.A. Luo, “Alloy Development, Manufacturing and Design for Light Metals Applications”, **Invited Talk**, Sustainable Design & Manufacture (SDM) Seminar Series, The Ohio State University, Columbus, OH, April 10, 2012.
197. A.A. Luo, R.K. Mishra, B.R. Powell, and A.K. Sachdev, “Magnesium Alloy Development Using Phase Equilibria Computation and Microstructure Validation”, **Keynote Talk**, Magnesium Technology 2012 Symposium, TMS Annual Meeting, Orlando, FL, USA, March 11-15, 2012.
198. A.A. Luo, “Magnesium Alloy Development: From Computational Thermodynamics to Automotive Applications”, **Invited Talk**, TMS Annual Meeting, Orlando, FL, USA, March 11-15, 2012.
199. W. Wen, A.A. Luo, T. Zhai, “Fatigue and Corrosion Properties of Mg-Al-Mn Alloy by Super Vacuum Die Casting”, TMS Annual Meeting, Orlando, FL, USA, March 11-15, 2012.
200. Y. Li, Z. Han, A.A. Luo, A.K. Sachdev, B. Liu, “Microstructure Simulation in Pressurized Solidification during Squeeze Casting of Aluminum Alloy A356”, TMS Annual Meeting, Orlando, FL, USA, March 11-15, 2012.
201. A.A. Luo, “Alloy Development and Process Innovation for Lightweight Automotive Applications”, **Invited Talk**, University of North Texas, Denton, TX, January 27, 2012.
202. A.A. Luo, “Computational Alloy Development and Automotive Applications of Light Metals”, **Invited Talk**, The Ohio State University, Columbus, OH, USA, Nov. 23, 2011.
203. A.A. Luo, “Computational Alloy Development and Automotive Applications of Light Metals”, **Invited Talk**, University of Kentucky, Lexington, KY, USA, Nov. 22, 2011.
204. W. Wen, A.A. Luo, T. Zhai, “Fatigue Properties of Mg-Al-Mn Alloy by Super Vacuum Die Casting”, Materials Science & Technology 2011 Conference, Columbus, Ohio, October 16-20, 2011.
205. A.A. Luo, “Magnesium Alloy Development for Automotive Applications: Computational and Experimental Approaches”, **Keynote Talk**, 7th International conference on advanced materials (THERMEC'2011), Quebec, Quebec, Canada, August 1-5, 2011.

206. A.A. Luo, “Magnesium Alloy Development for Structural Applications”, **Invited Talk**, National Science Foundation “Magnesium Science and Technology” Workshop, Arlington, VA, USA, May 19-20, 2011.
207. A.A. Luo, “Magnesium Front End Research and Development (MFERD)”, US Department of Energy Annual Merit Review, Arlington, VA, USA, May 9-13, 2011.
208. A.A. Luo, T. Lee, J. Carter, "Self-Pierce Riveting of Magnesium to Aluminum Alloys", SAE 2011 World Congress, Detroit, MI, April 12-14, 2011.
209. A.A. Luo, A.K. Sachdev, “Process Development and Characterization of Overcasting Systems”, American Foundry Society 115th Metalcasting Congress, Schaumburg, IL, USA, April 5-8, 2011, American Foundry Society.
210. A.A. Luo, “Light Metals and Manufacturing for Automotive Applications”, **Keynote Talk**, International Automotive Lightweight Materials Development Forum, Chongqing, China, March 24-25, 2011.
211. A.A. Luo, X. Kang, P. Fu, Z. Li, T. Zhu, L. Peng, W. Ding, “Optimization of Magnesium-Aluminum-Tin Alloys for As-Cast Microstructure and Mechanical Properties”, TMS Annual Meeting, San Diego, CA, USA, February 28 – March 3, 2011.
212. C. Zhang, A.A. Luo, Y.A. Chang, “Solidification Microstructure and Precipitation Investigation of Mg-Zn-Ce Alloys Using Computational Thermodynamics Approach”, TMS Annual Meeting, San Diego, CA, USA, February 28 – March 3, 2011.
213. A.A. Luo, A.K. Sachdev, B.R. Powell, “Advanced Casting Technologies for Lightweight Automotive Applications”, **Plenary Talk**, 69<sup>th</sup> World Foundry Congress, Hangzhou, China, October 16-20, 2010.
214. A.A. Luo, “Light Metals Research and Automotive Applications”, **Invited Lecture**, Metal Industries Research & Development Centre, Kaohsiung, Taiwan, September 6, 2010.
215. A.A. Luo, W. Shi, K. Sadayappan, E.A. Nyberg, “Magnesium Front End Research and Development: Phase I Progress Report of a Canada-China-USA Collaboration”, IMA 67th Annual World Magnesium Conference, Hong Kong, China, May 16-18, 2010.
216. A.A. Luo, J.H. Forsmark, X. Sun, S.O. Shook, “Mechanical and Thermophysical Properties of Magnesium Alloy Extrusions”, SAE 2010 World Congress, Detroit, MI, USA, April 13-15, 2010.
217. S.I. Hill, S. Logan, A.A. Luo, K. Wang, D.A. Wagner, “Dynamic Tension and Compression Properties of Vacuum Die Cast AM60B Magnesium”, SAE 2010 World Congress, Detroit, Michigan, USA, April 13-15, 2010.
218. J. Albinmousa, S. Begum, D. Chen, Q. Duan, M.F. Horstemeyer, H. Jahed, J.B. Jordon, S. Lambert, A.A. Luo, T. Luo, R. Osborne, A. Pascu, X. Su, Y. Yang, L. Zhang and Z. Zhang, “Monotonic and Fatigue Behavior of Magnesium Extrusion Alloy AM30: An International Benchmark Test in the Magnesium Front End Research and Development Project”, SAE 2010 World Congress, Detroit, Michigan, USA, April 13-15, 2010.
219. A.A. Luo and A.K. Sachdev: “Microstructure and Mechanical Properties of Magnesium-Aluminum-Manganese Cast Alloys”, 114th Metalcasting Congress, Orlando, FL, March 20-23, 2010.
220. L.M. Peng, Y.X. Wang, P.H. Fu, W.J. Ding, A.A. Luo and R. Verma, “Numerical Simulation and Process Development for Low Pressure Die Casting of Magnesium Alloy Wheels”, 114th Metalcasting Congress, Orlando, FL, March 20-23, 2010, American Foundry Society.
221. A.A. Luo, X. Zeng, W. Ding, Y. Wu, L. Peng, “Precipitation Strengthening in Magnesium Alloys Containing Rare Earth Elements”, **Plenary Talk**, TMS Annual Meeting, Seattle, WA, USA, February 14-18, 2010.
222. A.A. Luo, R.K. Mishra, A.K. Sachdev, “Development of High Ductility Magnesium-Zinc-Cerium Extrusion Alloys”, TMS Annual Meeting, Seattle, WA, USA, February 14-18, 2010.
223. A.A. Luo, J.H. Forsmark, X. Sun, S.O. Shook, W.Z. Misiolek, R.K. Mishra, “Microstructure and Mechanical Properties of Magnesium Extrusion Alloys AM30, AZ31 and AZ61”, TMS Annual Meeting, Seattle, WA, USA, February 14-18, 2010.
224. A.A. Luo, B. Hu, L. Peng, B.R. Powell, M.J. Lukitsch, A.K. Sachdev, “Dry Sliding Wear Behavior of AE44 Magnesium Alloy Reinforced with Saffil Alumina Fibers”, TMS Annual Meeting, Seattle, WA, USA, February 14-18, 2010.

225. A.A. Luo, B. Hu, L. Peng, B.R. Powell, A.K. Sachdev, “Mechanical Properties and Microstructural Analysis of AXJ530 Magnesium Alloy Reinforced with Alumina Fibers”, TMS Annual Meeting, Seattle, WA, USA, February 14-18, 2010.
226. A.A. Luo, “Magnesium Front End Research and Integrated Computational Materials Engineering”, **Invited Lecture**, Shanghai Jiao Tong University, Shanghai, China, December 21, 2009.
227. A.A. Luo, “Magnesium Front End Design and Development”, **Invited Talk**, Symposium on Materials for Lightweight Vehicles, Dearborn, MI, USA, December 8, 2009.
228. A.A. Luo, “Light Metal Casting Technologies for Automotive Applications”, **Plenary Talk**, China Foundry Week, Weihai, China, October 24-28, 2009.
229. A.A. Luo, “Magnesium Alloy Development and Manufacturing Processes for Automotive Structural Applications”, **Invited Talk**, Lehigh University, Bethlehem, PA, October 7, 2009.
230. D. Chen, A. Emami, A.A. Luo, “Cyclic Deformation of Extruded AM30 Magnesium Alloy in the Transverse Direction”, the 15th International Conference on the Strength of Materials, Paper OR-18-04/1-4, August 16 - 21, 2009, Dresden, Germany.
231. A.A. Luo, “Light Metals Development and Manufacturing for Structural Applications”, **Invited Talk**, University of Wisconsin, Madison, WI, August 7, 2009.
232. K. Sadayappan, W. Kasprzak, Z. Brown, L.J. Ouimet and A.A. Luo, “Characterization of Magnesium Automotive Components Produced by Super-Vacuum Die Casting Process”, the 4<sup>th</sup> International Light Metals Technology Conference, Gold Coast, Australia, June 19 – July 1, 2009.
233. C.L. Fan, D.L. Chen and A.A. Luo, “Effect of Cyclic Strain Amplitudes on the Formation of Deformation Twins in An AM30 Extruded Mg Alloy”, the 21st Canadian Materials Science Conference, Queen’s University, Kingston, Ontario, June 9-11, 2009.
234. C.L. Fan, D.L. Chen and A.A. Luo, Influence of loading direction on fatigue deformation characteristics of AM30 Mg alloy, the 21st Canadian Materials Science Conference, Queen’s University, Kingston, Ontario, June 9-11, 2009.
235. S.I. Hill, A.A. Luo, S.Xu and D.A. Wagner, “Dynamic Tension and Compression Properties of Extruded AM30 Magnesium Alloy”, the Society for Experimental Mechanics (SEM) Annual Conference, Albuquerque, NM, USA, June 1-4, 2009.
236. A.A. Luo, Z. Brown, M. Musser, L.J. Ouimet, K. Sadayappan, J. Zindel, R. Beals, “Development of Super-Vacuum Die Casting Process for Magnesium Alloys”, the 113th Metalcasting Congress, Las Vegas, Nevada, April 7-10, 2009.
237. A.A. Luo, “Light Metals and Manufacturing for Automotive Structural Applications”, **Invited Talk**, Michigan State University, East Lansing, MI, May 18, 2009.
238. A.A. Luo and A.K. Sachdev, “Microstructure and Mechanical Properties of Mg-Al-Mn and Mg-Al-Sn Alloys”, TMS Annual Meeting, San Francisco, CA, USA, February 15-19, 2009.
239. L. Jin, W. Wu, R.K. Mishra, A.A. Luo, A.K. Sachdev and S. Yao, “Deformation Mechanisms in AZ31 Magnesium Alloy Tube Bending”, TMS Annual Meeting, San Francisco, CA, USA, February 15-19, 2009.
240. A.A. Luo and A.K. Sachdev, “Optimization of Magnesium-Aluminum-Manganese Alloys and the Effect of Tin”, **Invited Talk**, The 5th International Conference on Advanced Materials and Processing (ICAMP-5), Harbin, China, September 2-5, 2008.
241. A.K. Sachdev, A.A. Luo and M.W. Verbrugge, “Advanced Processing of Light Metals for Automotive Applications”, **Plenary Talk**, The 5th International Conference on Advanced Materials and Processing (ICAMP-5), Harbin, China, September 2-5, 2008.
242. L. Jin, R.K. Mishra, W. Wu, A.A. Luo and A.K. Sachdev, “Microstructure Evolution of Magnesium Alloy Tubes during Bending at Moderate Temperatures”, The 5th International Conference on Advanced Materials and Processing (ICAMP-5), Harbin, China, September 2-5, 2008.
243. A.A. Luo, “Light Metals and Manufacturing for Automotive Applications”, **Invited Talk**, Hefei University of Technology, Hefei, Anhui, China, June 30, 2008.
244. S. Begum, D. Chen, S. Xu and A.A. Luo, “Mechanical Properties of an Extruded AZ31 Alloy”, The 20<sup>th</sup> Canadian Materials Science Conference, Edmonton, Alberta, Canada, June 16-19, 2008.

245. S. Begum, D. Chen, S. Xu and A.A. Luo, “Fatigue Properties of an Extruded AM30 Alloy”, The 20<sup>th</sup> Canadian Materials Science Conference, Edmonton, Alberta, Canada, June 16-19, 2008.
246. A.A. Luo and A.K. Sachdev, “Optimization of Magnesium-Aluminum-Manganese Alloys and the Effect of Tin”, The 3rd International Symposium on Magnesium, International Materials Research Conference, Chongqing, China, June 9-12, 2008.
247. S. Begum, D. Chen, S. Xu and A.A. Luo, “Effect of Strain Ratio, Strain Rate and Initial Strain Direction on the Fatigue Behavior of AZ31 Wrought Magnesium Alloy”, **Invited Talk**, The 3rd International Symposium on Magnesium, International Materials Research Conference, Chongqing, China, June 9-12, 2008.
248. A.A. Luo, P.H. Fu, Y.D. Yu, L.M. Peng, H.Y. Jiang, C.Q. Zhai and Anil K. Sachdev, “Low Pressure Die Casting of AZ91 and AM50 Magnesium Alloys”, 112<sup>th</sup> Metalcasting Congress, Atlanta, GA, May 17 - 20, 2008, American Foundry Society.
249. A.A. Luo, E.A. Nyberg, K. Sadayappan and W. Shi, “Magnesium Front End Research and Development: A Canada-China-USA Collaboration”, **Plenary Session Talk**, TMS Annual Meeting, New Orleans, LA, USA, March 9-13, 2008.
250. Y. Wang, L. Jin, X. Zeng, W. Ding, A.A. Luo, A.K. Sachdev, R.K. Mishra, “Microstructure and Bendability of AM60 and AZ61 Magnesium Alloy Tubes”, TMS Annual Meeting, New Orleans, LA, USA, March 9-13, 2008.
251. R.K. Mishra, A.K. Gupta, P.R. Rao, A.K. Sachdev, A.M. Kumar and A.A. Luo, “Influence of Cerium on Texture and Ductility of Magnesium Extrusions”, TMS Annual Meeting, New Orleans, LA, USA, March 9-13, 2008.
252. A.A. Luo, “Light Metals and Manufacturing for Automotive Structural Subsystems”, **Invited Talk**, Advanced Lightweight Material for Automotive Seminar, Dearborn, MI, December 3-5, 2007.
253. A.A. Luo, “Light Metals and Manufacturing for Automotive Structural Applications”, **Invited Talk**, Faculty of Engineering Seminar, Univ of Michigan – Dearborn, Dearborn, MI, November 9, 2007.
254. A.A. Luo, “Light Metals and Manufacturing for Automotive Structural Applications”, **Invited Talk**, International Automotive Body Conference 2007, Troy, MI, USA, November 7-8, 2007.
255. A.A. Luo and A.K. Sachdev, “Development of Light Metals Automotive Structural Subsystems”, **Invited Talk**, Light Metals Technology 2007, Saint-Sauveur, Québec, Canada, September 24-26, 2007.
256. A.A. Luo, “Magnesium Applications in Automotive Structures”, **Invited Talk**, Workshop on Advanced Magnesium Alloys and Their Applications, Shanghai, China, August 1-4, 2007.
257. A.A. Luo, “Light Metals and Manufacturing Processes for Automotive Applications”, **Invited Seminar**, Hong Kong Productivity Council and Hong Kong Foundry Association, Hong Kong, China, July 30, 2007.
258. A.A. Luo, A.K. Sachdev and R.K. Mishra, “Magnesium Extrusion Development for Automotive Applications”, the 64<sup>th</sup> Annual World Magnesium Conference, International Magnesium Association, Vancouver, BC, Canada, May 13-15, 2007.
259. J. Levesque, K. Inal, K.W. Neale, A.A. Luo, R.K. Mishra and L. Jiang, “Numerical Modeling of Large Strain Deformation in Magnesium Alloy AM30”, TMS Annual Meeting, Orlando, FL, USA, February 25 – March 1, 2007.
260. A.A. Luo, “Magnesium Front End Development - USAMP Activities”, **Invited Talk**, SAE 2007 Congress, Detroit, Michigan, USA, April 16-19, 2007.
261. A.A. Luo, “The USAMP Magnesium Front End Program - Design and Enabling Technology Development”, **Invited Talk**, International Magnesium Association Magnesium in Automotive Seminar, Livonia, MI, USA, March 28, 2007.
262. A.A. Luo, E.A. Nyberg, K. Sadayappan and W. Shi, “Magnesium Front End Research & Development - A Canada-China-USA Collaborative Project”, TMS Annual Meeting, Orlando, FL, USA, February 25 – March 1, 2007.
263. A.I. Taub, P.E. Krajewski, A.A. Luo, and J.N. Owens: “The Evolution of Technology for Materials Processing over the Last 50 Years: The Automotive Example”, **TMS 50<sup>th</sup> Anniversary Laureate**, TMS Annual Meeting, Orlando, FL, USA February 25 – March 1, 2007.

264. Y. Wang, X. Zeng, W. Ding, A.A. Luo and A.K. Sachdev, “Study of Processing Map on Mg-3Al-1Zn Alloy Prepared by Low Frequency Electromagnetic Casting”, TMS Annual Meeting, Orlando, FL, USA February 25 – March 1, 2007.
265. L. Jiang, J.J. Jonas, R.K. Mishra, A.A. Luo, Anil Sachdev and S. Godet, “Texture Evolution in AM30 Mg Alloy Deformed along Different Strain Paths”, TMS Annual Meeting, Orlando, FL, USA February 25 – March 1, 2007.
266. J. Levesque, K. Inal, K.W. Neale, A.A. Luo, R.K. Mishra and L. Jiang, “Numerical Modeling of Large Strain Deformation in Magnesium Alloy AM30”, TMS Annual Meeting, Orlando, FL, USA February 25 – March 1, 2007.
267. A.A. Luo and A.K. Sachdev, “AM30 - A New Wrought Magnesium Alloy”, TMS Annual Meeting, Orlando, FL, USA February 25 – March 1, 2007.
268. A.A. Luo and A.K. Sachdev, “Bending and Forming Processes for Aluminum and Magnesium Alloy Tubes”, **Invited Talk**, Materials Science & Technology Conference, Cincinnati, OH, USA, October 16-18, 2006.
269. L. Jiang, J.J. Jonas, S. Godet, A.A. Luo, “Twinning Behavior of AM30 Magnesium Alloy during Uniaxial Tension and Compression”, The Conference of Metallurgists, 2006 October 1-4, 2006, Montreal, Canada.
270. A.A. Luo, “Research and Development Challenges for Magnesium Applications in Automotive Structures”, **Plenary Session Talk**, International Conference on Magnesium, Beijing, China, June 25-30, 2006.
271. A.A. Luo, “Magnesium Alloys and Manufacturing Development”, **Invited Seminar Talk**, Shanghai Jiao Tong Univ, Shanghai, China, June 22, 2006.
272. L. Jiang, J.J. Jonas, A.A. Luo, A.K. Sachdev and S. Godet, “Microstructure and Texture Evolution during the Uniaxial Tensile Testing of AM30 Magnesium Alloy,” TMS Annual Meeting, San Antonio, TX, USA, March 12-16, 2006.
273. J. Levesque, K. Inal, K.W. Neale, R.K. Mishra and A.A. Luo, “Numerical Modeling of Large Strain Deformation in Magnesium,” TMS Annual Meeting, San Antonio, TX, USA, March 12-16, 2006
274. Y. Wang, X Zeng, W. Ding, A.A. Luo and A.K. Sachdev, “Development and Validation of an Extrusion Limit Diagram for AZ31 Magnesium Alloy”, TMS Annual Meeting, San Antonio, TX, USA, March 12-16, 2006.
275. A.A. Luo and A.K. Sachdev, “Wrought Magnesium Research for Automotive Applications”, TMS Annual Meeting, San Antonio, TX, USA, March 12-16, 2006.
276. A.A. Luo and A.K. Sachdev, “Bending and Hydroforming of Aluminum and Magnesium Alloy Tubes for Automotive Applications”, the 3rd North American Hydroforming Conference, Novi, MI, Sept. 26-28, 2005.
277. A.A. Luo, “Magnesium Alloy Development for Automotive Applications”, Canada-China-US Workshop on Automotive Magnesium, Dearborn, MI, USA, October 17-19, 2005.
278. A.A. Luo and A.K. Sachdev, “Bending and Hydroforming of Aluminum and Magnesium Alloy Tubes for Automotive Applications”, the 3rd North American Hydroforming Conference, Novi, MI, USA, Sept. 26-28, 2005.
279. A.A. Luo and A.K. Sachdev, “Aluminum Tube Hydroforming and Formability Issues”, **Invited Seminar Talk**, Indian Institute of Science, Bangalore, India, September 2, 2005.
280. L. Jiang, S. Godet, J.J. Jonas, G. Huang, A.A. Luo, “Dynamic Recrystallization in Coarse-Grained AZ31 Alloy at Elevated Temperatures,” Calgary, Alberta, Canada, August 21-24, 2005.
281. A.A. Luo and A.K. Sachdev, “Aluminum Tube Hydroforming for Structural Applications”, **Invited Talk**, the 2nd International Light Metals Technology Conference, St. Wolfgang, Austria, June 8-10, 2005.
282. P. Martin, D. Baragar, K.P. Boyle, A.A. Luo, J.J. Jonas, S. Godet, K.W. Neale, “Elevated Temperature Property Measurements for Warm Forming Aluminium Alloy Tubes”, the 2nd International Light Metals Technology Conference, St. Wolfgang, Austria, June 8-10, 2005.
283. A.A. Luo, “Wrought Magnesium Alloys and Manufacturing Processes for Automotive Applications”, SAE 2005 World Congress, Detroit, MI, April 11-15, 2005.
284. A.A. Luo and A.K. Sachdev, “Aluminum Tube Hydroforming: Formability and Mechanical Properties”, SAE 2005 World Congress, Detroit, MI, April 11-15, 2005.

285. A.A. Luo and A.K. Sachdev, “Low-Cost Aluminum Tubes for Hydroforming Applications”, TMS Annual Meeting, San Francisco, CA, February 13-17, 2005.
286. A.A. Luo, A.K. Sachdev, R.K. Mishra and R.C. Kubic “Bendability and Microstructure of Magnesium Alloy Tubes at Room and Elevated Temperatures”, TMS Annual Meeting, San Francisco, CA, February 13-17, 2005.
287. Y. Zhong, A.A. Luo, J.F.Nie, J.O. Sofu, Z-K Liu, “New phases in Mg-Al-Ca system”, TMS Annual Meeting, San Francisco, CA, February 13-17, 2005.
288. Y. Wang, X Zeng, W. Ding, A.A. Luo and A.K. Sachdev, “Effect of Strontium on the Microstructure and Mechanical Properties of AZ31 Magnesium Alloy”, TMS Annual Meeting, San Francisco, CA, February 13-17, 2005.
289. P. Martin, D. Baragar, J. J. Jonas, A. A. Luo, “Warm Forming of 5754 Aluminum Alloy Tubes,” the North American Hydroforming Conference and Exhibition, Waterloo, ON, September 27-29, 2004.
290. A.A. Luo, “Magnesium Research and Automotive Applications”, **Invited Seminar Talk**, Chongqing Univ, Chongqing, China, September 23, 2004.
291. A.A. Luo, “Magnesium Alloys and Manufacturing Processes for Automotive Applications”, **Plenary Session Talk**, International Conference on Magnesium, Beijing, China, September 20-24, 2004.
292. Y. Zhong, A.A. Luo, J.O. Sofu and Z-K Liu, “First-Principle Investigation of Laves Phases in Mg-Al-Ca System”, International Conference on Magnesium, Beijing, China, September 20-24, 2004.
293. L. Jiang, G. Huang, S. Godet, J.J. Jonas and A.A. Luo, “Particle-Stimulated Dynamic Recrystallization in AZ31 Alloy at Elevated Temperatures,” International Conference on Magnesium, Beijing, China, September 20-24, 2004.
294. A.A. Luo and A.K. Sachdev, “Development of a Moderate Temperature Bending Process for Magnesium Alloy Extrusions”, International Conference on Magnesium, Beijing, China, September 20-24, 2004.
295. A.A. Luo, “Light Metals Research and Applications at General Motors Corporation”, **Invited Seminar Talk**, Tsinghua Univ, Beijing, China, September 20, 2004.
296. A.A. Luo, “Lightweight Materials for Automotive Applications,” **Invited Talk**, the 3rd Annual Materials Day, Pennsylvania State Univ, State College, PA, USA, April 15, 2004.
297. A.A. Luo, “Automotive Applications of Aluminum and Magnesium Alloys”, **Invited Talk**, Detroit Automotive Technology Conference, Detroit Chinese Engineers Association, Southfield, MI, USA, April 5, 2003.
298. A.A. Luo and A.K. Sachdev, “Mechanical Properties and Microstructure of AZ31 Magnesium Alloy Tubes”, MS Annual Meeting, Charlotte, NC, March 15-18, 2004.
299. Y. Zhong, A.A. Luo, J.O. Sofu, Z-K Liu, “Laves Phases in Mg-Al-Ca Alloy,” MS Annual Meeting, Charlotte, NC, March 15-18, 2004.
300. R. Beals, L. Kopka, J. Allison, J.A. Hines, B. McCune, A.A. Luo, B.R. Powell and P. Ried, “Fundamental Research Needs for the Magnesium Powertrain Cast Components (MPCC) Project”, MS Annual Meeting, Charlotte, NC, March 15-18, 2004.
301. K. Ozturk, Z-K Liu, and A.A. Luo, “Phase Identification and Microanalysis in the Magnesium-Aluminum-Calcium Alloy System,” TMS Annual Meeting, San Diego, CA, USA, March 2-6, 2003.
302. A.A. Luo, R.C. Kubic, and J.M. Tartaglia, “Fatigue Performance of Hydroformed Aluminum Tubular Sections”, TMS Annual Meeting, San Diego, CA, USA, March 2-6, 2003.
303. A.A. Luo, “Recent Magnesium Alloy Development for Automotive Powertrain Applications”, **Invited Talk**, the 2nd Osaka International Conference on Platform Science and Technology for Advanced Magnesium Alloys, Osaka, Japan, January 26-30, 2003.
304. A.A. Luo and A.K. Sachdev, “Strain Development and Microstructural Evolution in Aluminum Tube Bending and Hydroforming”, TMS Annual Meeting, Seattle, WA, USA, February 17-21, 2002.
305. B.R. Powell, A.A. Luo, B.L. Tiwari, and V. Rezhets, “The Die Castability of Calcium-Containing Magnesium Alloys: Thin-Wall Computer Case”, TMS Annual Meeting, Seattle, WA, USA, February 17-21, 2002.
306. Y. Zhang, K. Ozturk, Z.-K. Liu and A.A. Luo, “Computational Thermodynamics and Experimental Investigation of the Mg-Al-Ca-Sr Alloys”, TMS Annual Meeting, Seattle, WA, USA, February 17-21, 2002.



307. A.A. Luo, “Automotive Magnesium Applications and Alloy Development”, **Invited Talk**, Sinomag Magnesium Die Casting Seminar, Shanghai, China, August 27-28, 2001.
308. B.R. Powell, A. Luo, V. Rezhets, J.J. Bommarito and B.L. Tiwari: “Development of Creep-Resistant Magnesium Alloys for Powertrain Applications: Part 1 of 2”, SAE 2001 World Congress, Detroit, MI, USA, March 5-8, 2001.
309. A. Luo, M. Balogh and B.R. Powell: “Tensile Creep and Microstructure of Magnesium-Aluminum-Calcium Based Alloys for Powertrain Applications: Part 2 of 2”, SAE 2011 World Congress, Detroit, MI, USA, March 5-8, 2001.
310. A. Luo, “Tensile and Compressive Creep of Magnesium-Aluminum-Calcium Based Alloys”, TMS Annual Meeting, New Orleans, LA, February 13, 2001.
311. K. Ozturk, Y. Zhong, Z-K Liu, A. Luo: “Computational Thermodynamics and Experimental Investigation of Mg-Al-Ca Alloys”, TMS Annual Meeting, New Orleans, LA, February 13, 2001.
312. A. Luo, “Materials Comparison and Potential Applications of Magnesium in Automobiles”, TMS Annual Meeting, Nashville, TN, March 12-16, 2000.
313. A. Luo and T. Shinoda, “Development of a Creep-Resistant Magnesium Alloy for Die Casting Applications”, Magnesium Alloys and Their Applications, Wolfsburg, Germany, April 28-30, 1998.
314. Z. Zhang, A. Couture and A. Luo: “The Creep Properties of Mg-Zn-Al Alloys”, Magnesium Alloys and Their Applications, Wolfsburg, Germany, April 28-30, 1998.
315. A. Luo and T. Shinoda: "A New Magnesium Alloy for Automotive Powertrain Applications", SAE International Congress, Detroit, MI, February 23-26, 1998.
316. Y. Carbonneau, A. Couture, A. Luo and R. Tremblay: “On the Ca Modification of Binary Mg-Si Alloys”, the Conference of Metallurgists, Sudbury, Ontario, Canada, August 17-20, 1997.
317. H. Hu and A. Luo: “Recent Development in Squeeze Casting of Magnesium Alloys and Composites”, The TMS Annual Meeting, Orlando, FL, February 9-13, 1997.
318. A. Luo, H. Hu and J. Lo: “Microstructure and Mechanical Properties of Squeeze Cast AZ91D Magnesium Alloy”, the Conference of Metallurgists, Montreal, Quebec, Canada, August 25-29, 1996.
319. A. Luo, “Understanding the Solidification of Magnesium Alloys”, the Third International Magnesium Conference, Manchester, UK, April 10-12, 1996.
320. A. Luo, J. Renaud and J. Plourde, “Magnesium Castings in the Automotive Industry - Recent Developments and Future Challenges”, the Conference of Metallurgists, Vancouver, BC, Canada, August 20-24, 1995.
321. A. Luo, “Effect of Matrix Alloy Composition on the Interfacial Phenomena and Microstructure of Cast Mg/SiC<sub>p</sub> Composites”, the 10<sup>th</sup> International Conference on Composite Materials, Whistler, BC, Canada, August 14-18, 1995.
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