

Dr. Ronald J. O'Malley

F. Kenneth Iverson Chair Professor in Steelmaking Technologies
Director of the Kent D. Peaslee Steel Manufacturing Research Center
Department of Materials Science and Engineering
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EDUCATION

PhD • Metallurgy

Massachusetts Institute of Technology • Cambridge, MA, September 1983

MS & BS • Materials Engineering

Drexel University • Philadelphia, PA, June 1978

PROFESSIONAL EXPERIENCE

F. Kenneth Iverson Chair Professor and Director, Kent D. Peaslee Steel Manufacturing Research Center

Department of Material Science & Engineering, Missouri University of Science and Technology, Rolla, MO

January 2014 – Current.

Chief Metallurgist, Nucor Steel Decatur, LLC, Decatur AL

October 2002 – January 2014.

Principal Research Engineer - Casting & Steelmaking, AK Steel/Armco Inc.*, Middletown, OH

May 1995 - September 2002.

Senior Staff Engineer - Casting & Steelmaking, AK Steel/Armco Inc.*, Middletown, OH

March 1991 - May 1995.

Senior Research Engineer - Casting & Steelmaking, AK Steel/Armco Inc.*, Middletown, OH

July 1988 - March 1991.

Staff Engineer - Molten Metal Processing, Alcoa Laboratories, Alcoa Center, PA

July 1984 - June 1988.

Post-Doctoral Research Associate, Massachusetts Institute of Technology, Cambridge, MA

June 1983 - July 1984.

Cooperative Engineer, Foote Mineral Company, Exton, PA

June 1975 - September 1977.

HONORS AND AWARDS

1. AIST Richard J. Fruehan Award, "Effect of Phase Solidification Sequence in Stainless Steel on Grain Refining Efficiency", MS&T 2019, Portland, OR, October 2019.
2. Missouri S&T Mine and Metallurgy Academy Senior Faculty Award, April 26, 2019.
3. AFS Steel Division 2019 Best Paper Award "Efficiency of Solid Inclusion Removal from the Steel Melt by Ceramic Foam Filter: Design and Experimental Validation", CastExpo19 / 123rd Metalcasting Congress, Atlanta GA, April 28, 2019.
4. Alpha Sigma Mu Lecturer, MS&T, October 2018.
5. AIST Richard J. Fruehan Award, "Inclusion Removal during Ladle Refining", MS&T 2018, Columbus, OH, October 2018.
6. AIST Kent D. Peaslee Award "Inclusion Removal during Ladle Refining", AISTech 2018, Philadelphia, PA, May 2018.
7. AIST Ladle and Secondary Refining Best Paper award: "Inclusion Removal during Ladle Refining", AISTech 2018, Philadelphia, PA, May 2018.
8. AIST Ladle and Secondary Refining Best Paper Award: "Mechanism for Carbon Transfer from Magnesia-Graphite Ladle Refractories to Ultralow-Carbon Steel", AISTech 2017, Nashville, TN, May 2017.
9. AIST 2015 Jerry Silver Award for best paper: "The Effect of Coiling Temperature on the Mechanical Properties of Ultrahigh-Strength 700 MPa Grade Processed via Thin-Slab Casting".
10. F. Kenneth Iverson Chair, Missouri University of Science & Technology, January 2014.
11. AIST Presidential Citations, May 2010, May 2013.
12. AIST Distinguished Member and Fellow, May 2012.
13. AISE Benjamin F. Fairless Award, May 2012.
14. ISS Steelmaking Division's Charles Herty Jr. Award for best paper: "Observations of Various Steady State and Dynamic Thermal Behaviors in a Continuous Casting Mold", ISS Steelmaking Conference, Chicago, IL, March 21-24, 1999.

15. Best Experimental Paper Award: “Measurement of Temperature, Solidification, and Microstructure in a Continuous Cast Thin Slab” - Modeling of Casting, Welding & Advanced Solidification Processes VIII, TMS, San Diego, CA, June 7-12, 1998.
16. 5 Technical Achievement Awards from Armco Inc.: “Elimination of Line Lamination Defect on Cr-Ni Stainless”, “Improved Surface Quality on Ferritic Stainless Grades”, “Calcium Treatment Method for Ferritic Stainless”, “Successful Production of High Quality 409 Stainless at Mansfield Operations” and “Development of a 430 Stainless Casting Practice at Mansfield Operations”.

TEACHING ACTIVITIES

Internal

- MSE 6130 – Kinetics for Materials: SP2015, SP2016, SP2017, SP2018, SP2019
- MET 4450 – Steelmaking: F2015, F2017
- MET 5450 – Advanced Steelmaking: F2015, F2017
- MET 5440 - Metals Deformation Processing, F2014, F2018

External

- Lecturer – Steelmaking and Casting, Brimacombe Continuous Casting Course, Vancouver, BC, April 2015, 2016, 2017, 2018, 2019.
- Lecturer – AIST Bar and Rod Technology Short Course, Ft. Worth 2014.
- Lecturer – AIST Making Shaping and Treating of Steel, Nashville 2014, Cleveland 2014, Charolette 2015, Hamiton 2015, Huntsville 2016, Dearborn 2017.
- Lecturer – AIST Pipe and Tube Technology Short Course, Pittsburgh 2014.
- Lecturer – AIST Continuous Casting A Practical Training Seminar, Indianapolis 2014, Charleston 2015, Memphis 2016, Ft. Wayne 2017, Dearborn 2018.

PUBLICATIONS

Pending Publications

1. Xueliang Zhang, Simon N. Lekakh, Ronald J. O’Malley, Eduardo Scheid, “Effect of Selenium on the Machinability of As-Hot Rolled and Heat Treated 4140 Steel”, submitted to Int. J. Metal Casting.
2. X. Wang, K. Chandrashekhara, M. F. Buchely, S. Lekakh, D. C. Van Aken, R. J. O’Malley, G. W. Ridenour and E. Scheid, “Experiment and Simulation of Static Softening Behavior of Alloyed Steel During Round Bar Hot Rolling”, submitted to Journal of Manufacturing Processes.
3. Obinna Adaba, Ronald O’Malley, and Laura Bartlett, "Effect of Pre-Existing Inclusions on the Size and Morphology of Al₂O₃ - Results from Two Stage and Fixed Supersaturation Deoxidation", submitted to Metallurgical and Materials Transactions B.
4. Obinna Adaba, Ronald O’Malley, and Laura Bartlett, "Effect of Pre-Existing Inclusions on the Size and Morphology of Al₂O₃ - Single Stage Deoxidation with Varying Levels of Supersaturation", submitted to Metallurgical and Materials Transactions B.
5. Soumava Chakraborty, Ronald J. O’Malley, Laura Bartlett and Mingzhi Xu, “Removal of Alumina Inclusions from Steel Melt by Ceramic Foam Filter”, submitted to Int. J. Metal Casting.
6. Rairu Vaz Penna, Laura Bartlett, Ron O’Malley, "Influence of TiN Additions on the Microstructure of a Lightweight Fe-Mn-Al Steel", submitted to Int. J. Metal Casting.
7. Xueliang Zhang, Simon N. Lekakh, Ronald J. O’Malley, Eduardo Scheid, Mark Emmendorfer, and Mike Fox, Proc., “Effect of V and Al Grain Refining Treatment on Steel Machinability”, Symposium on Advanced Shaping & Forming for Metal Manufacturing, MS&T 2020, Pittsburgh, PA, October 2019.

Peer Reviewed Journal Publications

1. Tihe Zhou, Hatem Zurob, Ronald O’Malley, “A New Alloy System Having Autogenous Grain Pinning at High Temperature”, *Materials Processing Fundamentals 2019*, The Minerals, Metals & Materials Series, G. Lambotte, et al. (eds), pp 73-86, 2019, https://doi.org/10.1007/978-3-030-05728-2_7.
2. Dustin A. Arvola, Mark C. Emmendorfer, Ronald J. O’Malley, Simon N. Lekakh, Laura N. Bartlett, “Effect of Grain Refining on Properties of Super Austenitic Stainless Steel”, *Journal of Materials Engineering and Performance*, <https://doi.org/10.1007/s11665-019-03895-6>.
3. Tihe Zhou, Ronald J. O’Malley, Hatem S. Zurob, Mani Subramanian, Sang-Hyun Cho, and Peng Zhang, “Control Upstream Austenite Grain Coarsening during Thin Slab Casting Direct Rolling (TSCDR) Process”, *Metals*, 2019, 9, 158 doi:10.3390/met020158, pp 1-18.
4. M.F. Buchely, X. Wang, D.C. Van Aken, R.J. O’Malley, S. Lekakh, K. Chandrashekhara, “The use of Genetic Algorithms to calibrate Johnson-Cook strength and failure parameters of AISI/SAE 1018 steel”, *Journal of Engineering Materials and Technology*, ASME. J. Eng. Mater. Technol. 2018. doi:10.1115/1.4042382.

5. Dustin A. Arvola, Simon N. Lekakh, Ronald J. O'Malley, Laura N. Bartlett, "Two Inoculation Methods for Refining As-cast Grain Structure in Austenitic 316L Steel", *International Journal of Metal Casting*, 2018, <https://doi.org/10.1007/s40962-018-0260-1>, pp.1-15.
6. Simon N. Lekakh, Ron O'Malley, Mark Emmendorfer and Brenton Hrebec, "Control of Columnar to Equiaxed Transition in Solidification Macrostructure of Austenitic Stainless Steel Castings", *ISIJ International*, Vol. 57 (2017), No. 5, pp. 824–832.
7. X. Wang, H. Li, K. Chandrashekhara, S.A. Rummel, S. Lekakh, D.C. Van Aken, R.J O'Malley," Inverse finite element modeling of the barreling effect on experimental stress-strain curve for high temperature steel compression test", *Journal of Materials Processing Technology*, Vol. 43, May 2017, pp. 465-473.
8. X. Wang and K. Chandrashekhara, S. A. Rummel, S. Lekakh, D. C. Van Aken and R. J. O'Malley, "Modeling of Mass Flow Behavior of Hot Rolled Low Alloy Steel based on Combined Johnson-Cook and Zerilli-Armstrong Model", *Journal of Materials Science* 52.5 (2017): 2800-2815.
9. S.N. Lekakh, J. Ge, V. Richards, R. O'Malley & J.R. TerBush, "Optimization of Melt Treatment for Austenitic Steel Grain Refinement", *Metallurgical and Materials Transactions B*, Vol. 48, Issue 1, Feb 2017, pp. 406-419.
10. M. Mohammadi-Ghaleni, M.A. Zaeem, J.D. Smith, & R.J. O'Malley, "Comparison of CFD Simulations with Experimental Measurements of Nozzle Clogging in Continuous Casting of Steels", *Metallurgical and Materials Transactions B*, 47(6), December 2016, pp. 3384-3393.
11. Monica Kapoor, Ronald O'Malley, and Gregory B. Thomson, "Atom Probe Tomography Study of Multi-Microalloyed Carbide and Carbo-Nitride Precipitates and the Precipitation Sequence in Nb-Ti HSLA Steels", *Metallurgical and Materials Transactions A*, May 2016, Volume 47, Issue 5, pp 1984-1995.
12. Lance C Hibbeler, Melody M Chin See, Junya Iwasaki, Kenneth E Swartz, Ronald J O'Malley, Brian G Thomas, "A Reduced-Order Model of Mould Heat Transfer in the Continuous Casting of Steel:", *Applied Mathematical Modeling*, Vol. 40 (19), May 2016, pp. 8530-8551.
13. Mahdi Mohammadighaleni, Mohsen Asle Zaeem, Jeffrey D. Smith, and Ronald O'Malley, "Computational Fluid Dynamics Study of Molten Steel Flow Patterns and Particles-Wall Interactions inside a Slide-Gate Nozzle by a Hybrid Turbulent Model", *Metallurgical and Materials Transactions B*, Vol. 47, Issue 5, April 2016, pp. 1-10.
14. T. Zhou, H. S. Zurob, R. J. O'Malley and K. Rehman, "Model Fe-Al Steel with Exceptional Resistance to High Temperature Coarsening. Part I: Coarsening Mechanism and Particle Pinning Effects" *Metallurgical and Material Transactions A*, October 2014.
15. T. Zhou, P. Zhang, R. J. O'Malley, H. S. Zurob, and M. Subramanian, "Model Fe-Al Steel with Exceptional Resistance to High Temperature Coarsening. Part II: Experimental Validation and Applications" *Metallurgical and Materials Transactions A*, October 2014.
16. V.S.A. Challa, W.H. Zhou, R.D.K. Misra, R.O'Malley, S.G. Jansto, "The effect of coiling temperature on the microstructure and mechanical properties of a niobium–titanium microalloyed steel processed via thin slab casting," *Materials Science and Engineering A*, 595 (2014) 143-153.
17. L. Hibbeler, I Hwang, M. Langeneckert, J. Iwasaki, B.G. Thomas, R.J. O'Malley, "Calibration of Thermal Models of Steel Continuous Casting Molds", *AIST Transactions*, Sept 2013, pp. 199-210.
18. J. Stock, C.M. Enloe, R. J. O'Malley, K.O. Findley, and J. G. Speer, "Cooling Rate Effects on the As-Cast Titanium Nitride Precipitation Size Distribution in a Low-Carbon Steel", *AIST Transactions*, Vol.11, No. 4, June, 2014, pp. 180-187.
19. Lance C Hibbeler, Melody M Langeneckert, Junya Iwasaki, Inwho Hwang, R J OMalley, Brian G Thomas, "Calibration of Thermal Models of Continuous Casting of Steel", *AIST Transactions*, Vol. 10, issue 5, Sept, 2013, pp. 199-213.
20. I.C. Okafor, R.J. O'Malley, K.R. Prayakarao, and H.A. Aglan, "Effect of Zinc Galvanization on the Microstructure and Fracture Behavior of Low and Medium Carbon Structural Steels", *Engineering*, 5, August 2013.
21. R.K. Misra, Z. Jia, R. O'Malley, S.J. Jansto, "Precipitation Behavior During Thin Slab Thermomechanical Processing and Isothermal Aging of Copper-bearing Niobium-Microalloyed High Strength Structural Steels: The Effect on Mechanical Properties", *Materials Science and Engineering A* 528, 2011, 8772– 8780.
22. Z. Jia, D.D.K. Misra, R. O'Malley, S.J. Jansto, "Fine-Scale Precipitation and Mechanical Properties of Thin Slab Processed Titanium–Niobium Bearing High Strength Steels", *Materials Science and Engineering A*, Vol. 528, 2011, pp. 7077– 7083.
23. Kun Xu, Brian G. Thomas, Ron O'Malley, "Equilibrium Model of Precipitation in Microalloyed Steels" *Metallurgical and Materials Trans. A*, Vol. 42, Issue 2, pp. 524-539, Feb. 2011.
24. Tihe Zhou, Ronald J. O'Malley, Hatem S. Zurob, "Study on Grain Growth Kinetics in Delta Ferrite and Austenite with Application to Thin-Slab Cast Direct-Rolling Microalloyed Steels" *Metallurgical and Materials Trans. A*, Volume 41A, August 2010, pp, 2112-2122.
25. B. Zhao, B.G. Thomas, S.P. Vanka, and R.J. O'Malley, "Transient Flow and Temperature Transport in Continuous Casting of Steel Slabs", *Journal of Heat Transfer*, Vol. 127, August 2005, p. 807.
26. B. Zhao, B.G. Thomas, S.P. Vanka, and R.J. O'Malley, "Transient Flow and Temperature Transport in Continuous Casting of Steel Slabs", *Met and Mat Trans B*, Vol. 36, (6) December 2005, p. 801-823.

27. R. J. O'Malley: "Casting Technologies for Direct Hot Charging at Armco Mansfield", *Steel Times Int.*, Vol. 22, No. 1, January 1998, pp. 12-19.
28. R. J. O'Malley, M. E. Karabin, and R. E. Smelser, "The Roll Casting Process: Numerical and Experimental Results", *Journal of Materials Processing & Manufacturing Science*, Vol. 3, July 1994, pp. 59-71.
29. R. J. O'Malley, C. E. Dremann, and D. Apelian, "Alloying of Aluminum by Manganese Powder Injection", *Journal of Metals*, Vol. 31, No. 2, Feb. 1979, pp. 14-19.
30. R. J. O'Malley, C. E. Dremann, and D. Apelian, "Alloying of Aluminum by Manganese Powder Injection", *Journal of Metals*, Vol. 31, No. 2, Feb. 1979, pp. 14-19.

Journal Publications

1. D.A. Arvola, R.J. O'Malley, S.N. Lekakh and L.N. Bartlett, "Effect of Phase Solidification Sequence in Stainless Steel on Grain Refining Efficiency", *Iron & Steel Technology*, AIST, Oct. 2018 (**AIST best paper award**).
2. R. J. O'Malley, E. I. Peterson, J. D. Smith, S. Jauch, M. McClymonds, and N. Sutcliffe, "Influence of Mold Flux Crystallite Film Fracture on Thermal Fluctuations in a Thin Slab Funnel Mold", *Iron & Steel Technology*, AIST, July, 2018, pp 58-66 (**Selected for publication**).
3. X. Wang, K. Chandrashekhara, S. N. Lekakh, D. C. Van Aken and R. J. O'Malley, "Modeling and Simulation of Dynamic Recrystallization Behavior in 15V38 during Hot Rolling", *Steel Research International*, <https://doi.org/10.1002/srin.201700565>, March 5, 2018.
4. Obinna Adaba, Pallava Kaushik, Ronald J. O'Malley, Simon N. Lekakh, Von L. Richards, Erik Mantel, Randy Hall, Eric J. Ellis, "Characteristics of Spinel Inclusions Formed after Reoxidation of Calcium Treated Aluminum Killed Steel", *Iron & Steel Technology*, July 2017, pp. 38-49 (**Selected for publication**).
5. R. J. O'Malley, "Inclusion Evolution and Removal in Ladle Refining", *Proc.*, AISTech 2017, Nashville, TN, May, 2017 (**AIST best paper award, Peaslee award, Fruehan award**).
6. Andrew A. Russo, Jeffrey D. Smith, Ronald J. O'Malley, Von L. Richards, "Mechanism for Carbon Transfer from Magnesia-Graphite Ladle Refractories to Ultralow-Carbon Steel", *Iron & Steel Technology*, Oct, 2016 (**Selected for publication – best paper award**).
7. Madeline Rembold, Oscar Chahin, Neal Ross, Bob Williams, Ron O'Malley, "Investigation of Stopper Rod Tip Wear on a Thin-Slab Caster", *Iron & Steel Technology*, July 2015, pp.43-51 (**Selected for publication**).
8. R. Bachowski, R.J. O'Malley, M.M. Mohajery, "Continuous Casters for Aluminum Mini-Sheet Mills - an Alcoa Perspective", *Light Metal Age*, Vol. 47, Nos. 7 & 8, August 1989, pp. 6 - 12.

Conference Proceedings

1. Soumava Chakraborty, Ronald J. O'Malley, Laura Bartlett, "Effect of Physical State of Non-metallic Inclusions on the Accumulation and Distribution within Magnesia-Stabilized Zirconia Foam Filter", *AISTech2019*, Pittsburgh, PA, May, 2019.
2. Koushik K. Balasubramanian, Soumava Chakraborty, Laura Bartlett, Ronald O'Malley, Mingzhi Xu, "Filtration efficiency of inclusions in FeMnAl steels", *123rd Metalcasting Congress*, Atlanta, GA, April 2019.
3. Mark Emmendorfer, Simon N. Lekakh, Laura N. Bartlett, Ronald J. O'Malley, "Effect of Aluminum and Vanadium Fine Grain Practice on the Machinability of 4140 Steel", *Proc.*, MS&T 2018, Columbus, OH, Oct. 2018.
4. Mark Emmendorfer, Simon N. Lekakh, Laura N. Bartlett, Ronald J. O'Malley, "An Investigation of the Machinability of Abrasion Resistant AR450 Steel, *Proc.*, MS&T 2018, Columbus, OH, Oct. 2018.
5. Obinna M. Adaba, Ronald J. O'Malley, Mingzhi Xu, Laura N. Bartlett, "Size Distribution Evolution of Inclusions in Aluminum Killed - Calcium Treated Steel During Steelmaking, Casting and Hot Rolling", *Proc. 10th International Conference and Exhibition on CLEAN STEEL*, 18 - 20, Budapest, Hungary, Sept. 2018.
6. M.F. Buchely, X. Wang, D.C. Van Aken, R.J. O'Malley, S.N. Lekakh, K. Chandrashekhara, "Rolling Pressures during the Hot-Roll of Three Different Steel Plates: Experimental, Analytical and FEA", *Proc.*, 2nd International Symposium on the Recent Developments in Plate Steels, Orlando, FL, June 3-6, 2018.
7. X. Wang, S. Ganguly, K. Chandrashekhara, M. F. Buchely, S. N. Lekakh, D. C. Van Aken and R. J. O'Malley, D. Bai, Y. Wang, and T. Natarajan, "Modeling and Simulation of Mass Flow of Steel Plate/Slab during Hot Rolling", *Proc.*, AIST 2nd International Symposium on the Recent Developments in Plate Steels, Orlando, FL, June 3-6, 2018.
8. Dustin A. Arvola, Ronald J. O'Malley, Simon N. Lekakh, Laura N. Bartlett, "Effect of Phase Solidification Sequence in Stainless Steel on Grain Refining Efficiency", *Proc.*, AISTech 2018, Philadelphia, PA, May 2018.
9. Obinna M. Adaba, Ronald J. O'Malley, Mingzhi Xu, Laura N. Bartlett, Simon N. Lekakh, "Three-Dimensional Study of Inclusion Size Distribution and Morphology in Mn-Si Killed Steel", *Proc.*, AISTech 2018, Philadelphia, PA, May 2018.
10. Soumava Chakraborty, Ronald J. O'Malley, Laura Bartlett, Mingzhi Xu, "Efficiency of Solid Inclusion Removal from the Steel Melt by Ceramic Foam Filter: Design and Experimental Validation", *Proc.*, AFS 122nd Metalcasting Congress, Ft. Worth, TX, April 3-5, 2018 (**AFS best paper award**).

11. Obinna Adaba, Laura Bartlett, Mingzhi Xu and Ronald J. O'Malley, "Factors Affecting the Evolution of Inclusion Population During Steelmaking and Casting", Proc., STIS 2017, 3rd International Conference on Ironmaking and Steelmaking, IIT Kanpur, India, Dec 11-13, 2017, pp. 55-58 (**Keynote paper**).
12. M.F. Buchely, D.C. Van Aken, R.J. O'Malley, S. Lekakh, K. Chandrashekhara, "Hot Rolling effect upon the High Temperature Johnson-Cook Strength and Failure models for a 15V38 Grade Steel", Proc., MS&T17, Pittsburgh, PA, Oct. 8-12, 2017.
13. Tarak Amine, Joseph W. Newkirk and Ronald O'Malley, "Evaluating Material Property Variations in Components with Difficult Geometries", Proc. International Mechanical Engineering Congress & Exposition, ASME, Tampa, FL, November 3-9, 2017.
14. Mario Buchely, David Van Aken, Ronald O'Malley, K. Chandrashekhara, Simon Lekakh, "Hot Rolling Effect upon High Temperature Johnson-Cook Strength and Failure Models for a 15V38 Grade Steel", Proc., MS&T17, Pittsburgh, PA, October 2017, pp. 1045-1053.
15. Zachary T. Hilton, Joseph W. Newkirk, and Ronald J. O'Malley, "Studying Chromium and Nickel Equivalency to Identify Viable Additive Manufacturing Stainless Steel Chemistries", Proc., 28th Annual International Solid Freeform Fabrication Symposium, Zachary, August, 7-9, 2017.
16. R. J. O'Malley, E. I. Peterson, J. D. Smith, S. Jauch, M. McClymonds, and N. Sutcliffe, "Influence of Mold Flux Crystallite Film Fracture on Thermal Fluctuations in a Thin Slab Funnel Mold", Proc., AISTech 2017, Nashville, TN, May 2017.
17. R. J. O'Malley, "Inclusion Evolution and Removal in Ladle Refining", Proc., AISTech 2017, Nashville, TN, May, 2017 (**AIST best paper award, Peaslee award, Fruehan award**).
18. E. I. Peterson, T. P. Sander, J. D. Smith, and R. J. O'Malley, "Investigation of Mold Flux Crystallization by Rapid Quenching and Isothermal Aging in Molten Tin", Proc., AISTech 2017, Nashville, TN, May 2017.
19. Obinna Adaba, Pallava Kaushik, Ronald J. O'Malley, Simon N. Lekakh, Von L. Richards, Erik Mantel, Randy Hall, Eric J. Ellis, "Characteristics of Spinel Inclusions Formed after Reoxidation of Calcium Treated Aluminum Killed Steel", Proc. AISTech 2016, Pittsburgh, June 2016.
20. Andrew A. Russo, Jeffrey D. Smith, Ronald J. O'Malley, Von L. Richards, "Mechanism for Carbon Transfer from Magnesite-Graphite Ladle Refractories to Ultra-Low Carbon Steel", Proc. AISTech 2016, Pittsburgh, June 2016.
21. E. Nolte, J. Smith, M. Frazee, N. Sutcliffe, R. O'Malley, "Application of Cathodoluminescence in Analyzing Mold Flux Films", Proceedings of the 10th International Conference on Molten Slags, Fluxes and Salts 2016, Seattle, Washington, May 2016, pp. 317-325.
22. Andrew A. Russo, Jeffrey D. Smith, Ronald J. O'Malley, Von L. Richards, "Kinetics of Carbon Transfer from Magnesite-Graphite Ladle Refractories to Ultra-Low Carbon Steel" Proc., St. Louis Section/RCD 52nd Annual Symposium, St. Louis, March 2016.
23. Obinna Adaba, Marc Harris, Ronald J. O'Malley, Simon N. Lekakh, Von L. Richards and Neil Sutcliffe, "An SEM/EDS Statistical Study of the Effect of Mini-Mill Practices on the Inclusion Population in Liquid Steel", Proc. Clean Steel 9, 9th International Conference and Exhibition on Clean Steel, September 8-10, 2015, Budapest, Hungary, Chapter 4, Paper 5.
24. Marc Harris, Von L. Richards, Ron O'Malley, Simon Lekakh, "Evolution of Non-Metallic Inclusions in Foundry Steel Casting Processes", Proc. 69th Annual Technical and Operating Conference, Chicago, December 2015.
25. Marc Harris, Obinna Adaba, Simon Lekakh, Ron O'Malley, and Von L. Richards, "Improved Methodology for Automated SEM/EDS Non-Metallic Inclusion Analysis of Mini-Mill and Foundry Steels", Proc. AISTech 2015, Cleveland, May 4-7, 2015, pp. 2315-2325.
26. S. A. Rummel, S. N. Lekakh, D. C. Van Aken, R. J. O'Malley, X. Wang and K. Chandrashekhara, "High Strain Rate Hot Deformation of Steels: Measurement and Simulation", Proc. International Conference on Advances in Product Metallurgy of Long and Forged Products, Vail, CO, July 2015.
27. X. Wang and K. Chandrashekhara, S. A. Rummel, S. Lekakh, D. C. Van Aken and R. J. O'Malley, "Modeling and Simulation of Hot Rolling using Nonlinear Material Models", Proc. International Conference on Advances in Product Metallurgy of Long and Forged Products, Vail, CO, July 2015.
28. Gun Ge, Simon Lekakh, Von Richards, and Ron O'Malley, "Enhancing Grain Refinement of Austenitic Steel with Ti Additions by Melt Treatment Sequence Optimization", Presentation, AISTech 2015, Cleveland, May 4-7, 2015.
29. M. Kapoor, R. O'Malley, G. Thompson, Proc. "Atom Probe Compositional Analysis of Nanoscale Carbide and Carbo-Nitride Precipitates in Nb-Ti-Microalloyed Steels", Materials Science & Technology 2014, Indianapolis, 2014.
30. Madeline Rembold, Oscar Chahin, Neal Ross, Bob Williams, Ron O'Malley, "Investigation of Stopper Rod Tip Wear on a Thin-Slab Caster", Proc. AISTech 2014, May 5-8, 2014, Indianapolis, IN, 2014.
31. V.S.A. Challa, R.D.K. Misra, R. O'Malley, S.G. Jansto, "The Effect of Coiling Temperature on the Mechanical Properties of Ultrahigh-Strength 700 MPA Grade Processed via Thin-Slab Casting", Proc. AISTech 2014, May 5-8, 2014, Indianapolis, IN, 2014.
32. J. F. Elliott and R. J. O'Malley, "Chemical and Physical Changes Occurring as Oxide and DRI Pellets are Heated in Liquid Slags", Proc., Sixth International Iron and Steel Congress, 1990, Nagoya, ISIJ, pp. 131-138.

33. Q. T. Fang, P.N. Anyalebechi, R. J. O'Malley, and D. A. Granger, "Effect of Solidification Conditions on Hydrogen Porosity Formation in Directionally Solidified Aluminum Alloys", Proc. Solidification Processing 1987, Sept. 21-24, 1987.
34. R. J. O'Malley and M. E. Karabin, "A Theoretical and Experimental Study of the Roll Casting Process", Proc., Modeling and Control of Casting and Welding Processes, S. Kou and R. Mehrabian, ed., AIME, 1986, pp. 149-168.
35. R. J. O'Malley and J. F. Elliott, "Heating and Melting of DRI in Electric Furnace Slags", Proc., 69th Steelmaking Conference, 5th International Iron and Steel Congress, Washington, DC, April 1986, pp. 923-927.
36. R. J. O'Malley and J. F. Elliott: "A Physical Model of the Melting of DRI Pellets in Arc Furnaces", Proc., Symposium on Chemical Engineering in Process Metallurgy, Paper 23c, AICh.E. Fall Meeting, Cleveland, Ohio, Aug. 30 - Sept. 3, 1982.
37. D. Apelian, R. J. O'Malley, and C. E. Dremann, "Injection of Non-Buoyant Particles", Proc., Scaninject II, 2nd International Conference on Injection Metallurgy, Lulea, Sweden, June 12-13, 1980, pp. 7:1-7:33.

Book Contributions

1. Tihe Zhou, Ronald J. O'Malley, Hatem S. Zurob, Mani Subramanian, Sang-Hyun Cho and Peng Zhang, Continuous Casting, MDPI Books, Michael Vynnycky (Ed.), Reprinted from: Metals, "Control of Upstream Austenite Grain Coarsening during the Thin-Slab Cast Direct-Rolling (TSCDR) Process", July, 2019, pp. 185-202. ISBN 978-3-03921-321-4.
2. R. J. O'Malley, Inclusion Engineering and Clean Steels, Kent D. Peaslee Commemorative Volume, Chapter 2: "Inclusion Evolution and Removal in Ladle Refining", AIST, Warrendale, PA, 2019, ISBN: 978-1-935117-81-0.
3. Johannes (Hans) Schade, Ronald J. O'Malley, Frank L. Kemeny, Yogeshwar Sahai, Donald J. Zacharias, , Chapter 13 Tundish Operations, The Making Shaping and Treating of Steel. Casting Volume, 11th Edition, Alan W. Cramb, Editor. AIST, Warrendale, PA, 2010, ISBN-13: 978-0930767044.

Patents

1. Patent Application US 2018 / 0100208 A1, Simon Lekakh , Von Richards , Ronald O ' Malley , Rolla , Jun Ge , Grain Refinement of Iron-Based Materials, Issued April 12, 2018
2. Patent No. 6,474,402, Segmented Roll for Casting Metal Strip, Issued Nov. 5, 2002, to J. R. Suer, R. J. O'Malley and R. S. Williams.
3. Patent No. 5,651,412, Method of Applying a Wetting Flux to a Strip Casting Roll, Issued July 29, 1997, to R. S. Williams, R. J. O'Malley, and R. C. Sussman.

PRESENTATIONS

Invited & Keynote Presentations

1. R. J. O'Malley, "Observations of Inclusion, Steel and Refractory Interactions in Steel Processing", Bernard Aimes Seminar, University of Alabama, January, 2019.
2. R. J. O'Malley, "The Role of Rapid Technology Advances and Socio-Environmental Drivers on the Evolution of Process and Product Developments in Steel", **Alpha Sigma Mu Lecture**, MS&T, October 2018.
3. R.J. O'Malley, "Inclusion Related Research at the Kent D. Peaslee Steel Manufacturing Research Center", AIST CCTC Meeting Darlington, SC, Feb, 2018.
4. R.J. O'Malley, "The Evolution of Inclusion Populations during Ladle Refining and Continuous Casting", R.J. Lee Inclusions Workshop, Pittsburgh, PA, Dec, 2017.
5. R.J. O'Malley, "Factors Affecting the Evolution of Inclusion Population During Steelmaking and Casting", STIS 2017, 3rd International Conference on Ironmaking and Steelmaking, IIT Kanpur, India, Dec 11-13, 2017. **Keynote Lecture.**
6. R. J. O'Malley, "Inclusion Evolution and Removal in Ladle Refining", AISTech 2017, Kent. D. Peaslee Clean Steel Session, Nashville, TN, May, 2017.
7. R.J. O'Malley, "University Steel Center Facility Gaps in the US", Arkansas State University, Jonesborough, AK, Oct, 2016.
8. R. J. O'Malley, "Select Topics on Clean Steel and Quality", 5th Course on High Quality Steels, University of Science and Technology Beijing, Beijing China, June 2016.
9. Ronald J. O'Malley, "Steel Related Refractory Research at the PSMRC", St. Louis Section/RCD 52nd Annual Symposium, St. Louis, March 2016.
10. R.J. O'Malley, "Processes, Equipment, and Tools Used in Steel Research and Manufacturing" ASM Materials Camp, Rolla, MO July 2015.
11. R.J. O'Malley, "Undergraduate Research – An Experience worth Pursuing", Undergraduate Research Conference, Rolla, June 2015 (**Invited**).
12. R.J. O'Malley, "Tunnel Furnace Operating Issues Affecting Quality", Bricmont Tunnel Furnace Seminar, Cannonsburg, PA, Sept 2014.

13. R.J. O'Malley, "An Update on Inclusion Research in the PSMRC", ArcelorMittal Mini-Conference on Inclusions, Chicago, July, 2014.
14. R.J. O'Malley, "Influence of Rolls, Nozzles & Mold Coppers on Caster Operation and Slab Quality", VAI Maintenance Conference, ST. Petersburg, FL, April, 2014.
15. R. O'Malley, "Mold Flux Films and Mold Thermal Behavior", Invited Lecture, McGill University FactSage Consortium Meeting, May 2013.
16. R. O'Malley, "API Steel Coil and Plate Production", R. O'Malley, Invited Lecture, Pipeliners Club of Atlanta, Atlanta, GA, Nov. 2011.
17. R. O'Malley, "Everything a Product Metallurgist Needs to Know About Continuous Casting" Invited Lecture, ASPPRC Spring Meeting, Colorado School of Mines, March 2010.
18. R.J. O'Malley, "Tunnel Furnace Operating Issues Affecting Quality", Bricmont Tunnel Furnace Seminar, Pittsburgh, PA, Sept. 2006.
19. R.J. O'Malley, "Some Operational Aspects of Mold Level Control in the Continuous Casting of Steel" AIST Continuous Casting Sub-Committee Meeting, Baltimore, MD, Oct. 2005.
20. R. J. O'Malley and M. E. Karabin, "A Theoretical and Experimental Study of the Roll Casting Process", Proc., Modeling and Control of Casting and Welding Processes, S. Kou and R. Mehrabian, ed., AIME, 1986, pp. 149-168.
21. R. J. O'Malley and J. F. Elliott, "Heating and Melting of DRI in Electric Furnace Slags", Proc., 69th Steelmaking Conference, 5th International Iron and Steel Congress, Washington, DC, April 1986, pp. 923-927.
22. R. J. O'Malley and J. F. Elliott: "A Physical Model of the Melting of DRI Pellets in Arc Furnaces", Proc., Symposium on Chemical Engineering in Process Metallurgy, Paper 23c, AIChE. Fall Meeting, Cleveland, Ohio, Aug. 30 - Sept. 3, 1982.

Conference Presentations

1. R. J. O'Malley, "Inclusion Evolution and Removal in Ladle Refining", Proc., AISTech 2017, Nashville, TN, May, 2017.
2. R. J. O'Malley, E. I. Peterson, J. D. Smith, S. Jauch, M. McClymonds, and N. Sutcliffe, "Influence of Mold Flux Crystallite Film Fracture on Thermal Fluctuations in a Thin Slab Funnel Mold", Proc., AISTech 2017, Nashville, TN, May 2017.
3. Ronald J. O'Malley, "Steel Related Refractory Research at the PSMRC", St. Louis Section/RCD 52nd Annual Symposium, St. Louis, March 2016.
4. R.J. O'Malley, J. Watsinger, F. Wimmer, "409 Casting Trials with Parabolic Mold Taper at AK Steel's Mansfield Operations Using VAI's DIAFACE® Mold Technology" CCC 2000 - Proceedings of the 8th Continuous Casting Conference, Linz, Austria, paper 9, June 5-7, 2000.
5. R. J. O'Malley and J. Neal, "An Examination of Mold Flux Film Structures and Mold Gap Behavior Using Mold Thermal Monitoring and Petrographic Analysis at Armco's Mansfield Operations", Proc. METEC Congress 99, Dusseldorf, June 13-15, 1999.
6. R. J. O'Malley, "Observations of Various Steady State and Dynamic Thermal Behaviors in a Continuous Casting Mold", Proc. 82nd Steelmaking Conf., ISS, Chicago, IL, March 21-24, 1999.
7. R. J. O'Malley, O. Silbermann, and J. Watsinger, "Carbon and Stainless Steel Quality Results from Armco Mansfield's Thin Slab Casting and Direct Rolling Facility using VAI's CONROLL™ Technology", Proc., 56th Electric Furnace Conf., ISS, New Orleans, LA, November 21-24, 1998.
8. R. O'Malley and J. Watsinger, "Direct Hot Charged Stainless Performance at Armco Mansfield", Adv. Tech. Symposium. The High Performance Steel Plant, Baltimore, MD, Oct 4-6, 1998.
9. R. J. O'Malley, "Casting Technologies Supporting the Development of Direct Hot Charged Carbon and Stainless Steel Production at Armco's Mansfield Operations", Proc., 39th Mechanical Working and Steel Processing Conf., ISS, Indianapolis, IN, 19-22 October 1997.
10. R. J. O'Malley, A. J. Flick, and G. Hohenbichler, "Thin Slab Casting Practice Development at Armco's Mansfield Operations", Proc., CCC'96, Linz, Austria, May 1996, Slab Session - Paper 16.

Contributed Presentations

1. Soumava Chakraborty, Ronald J. O'Malley, Laura Bartlett, "Effect of Physical State of Non-metallic Inclusions on the Accumulation and Distribution within Magnesia-Stabilized Zirconia Foam Filter", AISTech2019, Pittsburgh, PA, May, 2019.
2. Mark Emmendorfer, Simon N. Lekakh, Laura N. Bartlett, Ronald J. O'Malley, "Effect of Aluminum and Vanadium Fine Grain Practice on the Machinability of 4140 Steel", Proc., MS&T 2018, Columbus, OH, Oct. 2018.
3. Mark Emmendorfer, Simon N. Lekakh, Laura N. Bartlett, Ronald J. O'Malley, "An Investigation of the Machinability of Abrasion Resistant AR450 Steel, Proc., MS&T 2018, Columbus, OH, Oct. 2018.
4. Obinna M. Adaba, Ronald J. O'Malley, Mingzhi Xu, Laura N. Bartlett, "Size Distribution Evolution of Inclusions in Aluminum Killed - Calcium Treated Steel During Steelmaking, Casting and Hot Rolling", Proc. 10th International Conference and Exhibition on CLEAN STEEL, 18 - 20, Budapest, Hungary, Sept. 2018.

5. M.F. Buchely, X. Wang, D.C. Van Aken, R.J. O'Malley, S.N. Lekakh, K. Chandrashekhara, "Rolling Pressures during the Hot-Roll of Three Different Steel Plates: Experimental, Analytical and FEA", Proc., 2nd International Symposium on the Recent Developments in Plate Steels, Orlando, FL, June 3-6, 2018.
6. X. Wang, S. Ganguly, K. Chandrashekhara, M. F. Buchely, S. N. Lekakh, D. C. Van Aken and R. J. O'Malley, D. Bai, Y. Wang, and T. Natarajan, "Modeling and Simulation of Mass Flow of Steel Plate/Slab during Hot Rolling", Proc., AIST 2nd International Symposium on the Recent Developments in Plate Steels, Orlando, FL, June 3-6, 2018.
7. Dustin A. Arvola, Ronald J. O'Malley, Simon N. Lekakh, Laura N. Bartlett, "Effect of Phase Solidification Sequence in Stainless Steel on Grain Refining Efficiency", Proc., AISTech 2018, Philadelphia, PA, May 2018.
8. Obinna M. Adaba, Ronald J. O'Malley, Mingzhi Xu, Laura N. Bartlett, Simon N. Lekakh, "Three-Dimensional Study of Inclusion Size Distribution and Morphology in Mn-Si Killed Steel", Proc., AISTech 2018, Philadelphia, PA, May 2018.
9. Soumava Chakraborty, Ronald J. O'Malley, Laura Bartlett, Mingzhi Xu, "Efficiency of Solid Inclusion Removal from the Steel Melt by Ceramic Foam Filter: Design and Experimental Validation", Proc., AFS 122nd Metalcasting Congress, Ft. Worth, TX, April 3-5, 2018 (**AFS best paper award**).
10. Obinna Adaba, Laura Bartlett, Mingzhi Xu and Ronald J. O'Malley, "Factors Affecting the Evolution of Inclusion Population During Steelmaking and Casting", Proc., STIS 2017, 3rd International Conference on Ironmaking and Steelmaking, IIT Kanpur, India, Dec 11-13, 2017, pp. 55-58 (**Keynote paper**).
11. M.F. Buchely, D.C. Van Aken, R.J. O'Malley, S. Lekakh, K. Chandrashekhara, "Hot Rolling effect upon the High Temperature Johnson-Cook Strength and Failure models for a 15V38 Grade Steel", Proc., MS&T17, Pittsburgh, PA, Oct. 8-12, 2017.
12. Tarak Amine, Joseph W. Newkirk and Ronald O'Malley, "Evaluating Material Property Variations in Components with Difficult Geometries", Proc. International Mechanical Engineering Congress & Exposition, ASME, Tampa, FL, November 3-9, 2017.
13. Mario Buchely, David Van Aken, Ronald O'Malley, K. Chandrashekhara, Simon Lekakh, "Hot Rolling Effect upon High Temperature Johnson-Cook Strength and Failure Models for a 15V38 Grade Steel", Proc., MS&T17, Pittsburgh, PA, October 2017, pp. 1045-1053.
14. Zachary T. Hilton, Joseph W. Newkirk, and Ronald J. O'Malley, "Studying Chromium and Nickel Equivalency to Identify Viable Additive Manufacturing Stainless Steel Chemistries", Proc., 28th Annual International Solid Freeform Fabrication Symposium, Zachary, August, 7-9, 2017.
15. E. I. Peterson, T. P. Sander, J. D. Smith, and R. J. O'Malley, "Investigation of Mold Flux Crystallization by Rapid Quenching and Isothermal Aging in Molten Tin", Proc., AISTech 2017, Nashville, TN, May 2017.
16. Obinna Adaba, Pallava Kaushik, Ronald J. O'Malley, Simon N. Lekakh, Von L. Richards, Erik Mantel, Randy Hall, Eric J. Ellis, "Characteristics of Spinel Inclusions Formed after Reoxidation of Calcium Treated Aluminum Killed Steel", Proc. AISTech 2016, Pittsburgh, June 2016.
17. Andrew A. Russo, Jeffrey D. Smith, Ronald J. O'Malley, Von L. Richards, "Mechanism for Carbon Transfer from Magnesite-Graphite Ladle Refractories to Ultra-Low Carbon Steel", Proc. AISTech 2016, Pittsburgh, June 2016.
18. E. Nolte, J. Smith, M. Frazee, N. Sutcliffe, R. O'Malley, "Application of Cathodoluminescence in Analyzing Mold Flux Films", Proceedings of the 10th International Conference on Molten Slags, Fluxes and Salts 2016, Seattle, Washington, May 2016, pp. 317-325.
19. Andrew A. Russo, Jeffrey D. Smith, Ronald J. O'Malley, Von L. Richards, "Kinetics of Carbon Transfer from Magnesite-Graphite Ladle Refractories to Ultra-Low Carbon Steel" Proc., St. Louis Section/RCD 52nd Annual Symposium, St. Louis, March 2016.
20. Obinna Adaba, Marc Harris, Ronald J. O'Malley, Simon N. Lekakh, Von L. Richards and Neil Sutcliffe, "An SEM/EDS Statistical Study of the Effect of Mini-Mill Practices on the Inclusion Population in Liquid Steel", Proc. Clean Steel 9, 9th International Conference and Exhibition on Clean Steel, September 8-10, 2015, Budapest, Hungary, Chapter 4, Paper 5.
21. Marc Harris, Von L. Richards, Ron O'Malley, Simon Lekakh, "Evolution of Non-Metallic Inclusions in Foundry Steel Casting Processes", Proc. 69th Annual Technical and Operating Conference, Chicago, December 2015.
22. Marc Harris, Obinna Adaba, Simon Lekakh, Ron O'Malley, and Von L. Richards, "Improved Methodology for Automated SEM/EDS Non-Metallic Inclusion Analysis of Mini-Mill and Foundry Steels", Proc. AISTech 2015, Cleveland, May 4-7, 2015, pp. 2315-2325.
23. S. A. Rummel, S. N. Lekakh, D. C. Van Aken, R. J. O'Malley, X. Wang and K. Chandrashekhara, "High Strain Rate Hot Deformation of Steels: Measurement and Simulation", Proc. International Conference on Advances in Product Metallurgy of Long and Forged Products, Vail, CO, July 2015.
24. X. Wang and K. Chandrashekhara, S. A. Rummel, S. Lekakh, D. C. Van Aken and R. J. O'Malley, "Modeling and Simulation of Hot Rolling using Nonlinear Material Models", Proc. International Conference on Advances in Product Metallurgy of Long and Forged Products, Vail, CO, July 2015.
25. Gun Ge, Simon Lekakh, Von Richards, and Ron O'Malley, "Enhancing Grain Refinement of Austenitic Steel with Ti Additions by Melt Treatment Sequence Optimization", Presentation, AISTech 2015, Cleveland, May 4-7, 2015.

26. M. Kapoor, R. O'Malley, G. Thompson, Proc. "Atom Probe Compositional Analysis of Nanoscale Carbide and Carbo-Nitride Precipitates in Nb-Ti-Microalloyed Steels", Materials Science & Technology 2014, Indianapolis, 2014.
27. Madeline Rembold, Oscar Chahin, Neal Ross, Bob Williams, Ron O'Malley, "Investigation of Stopper Rod Tip Wear on a Thin-Slab Caster", Proc. AISTech 2014, May 5-8, 2014, Indianapolis, IN, 2014.
28. V.S.A. Challa, R.D.K. Misra, R. O'Malley, S.G. Jansto, "The Effect of Coiling Temperature on the Mechanical Properties of Ultrahigh-Strength 700 MPA Grade Processed via Thin-Slab Casting", Proc. AISTech 2014, May 5-8, 2014, Indianapolis, IN, 2014.
29. Madeline Rembold, Oscar Chahin, Neal Ross, Bob Williams, Ron O'Malley, "Investigation of Stopper Rod Tip Wear on a Thin-Slab Caster", Proc. AISTech 2014, May 5-8, 2014, Indianapolis, IN, 2014.
30. V.S.A. Challa, R.D.K. Misra, R. O'Malley, S.G. Jansto, "The Effect of Coiling Temperature on the Mechanical Properties of Ultrahigh-Strength 700 MPA Grade Processed via Thin-Slab Casting", Proc. AISTech 2014, May 5-8, 2014, Indianapolis, IN, 2014.
31. J. Bentsman, B.G. Thomas, B. Petrus, X. Zhou, V. Natarajan, and R. O'Malley, "Hybrid Control of Continuous Casting for Whisker and Crack Prevention and Resonance Control in Mold Oscillation System" Proceedings of 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, Grant # DMI-0900138.
32. B.A. Blumhardt, J.G. Speer, D.K. Matlock, and R.J. O'Malley, "Influence of Chemical and Processing Variables on Annealing Response of Cold-Rolled Microalloyed Steels", Proc., International Conference on Microalloyed Steels: Processing, Properties, Microstructure, and Performance, Pittsburgh, PA, 2007.
33. B. Thomas, R. O'Malley, T. Shi, Y. Meng, D. Creech, and D. Stone, "Validation of Fluid Flow and Solidification Simulation of a Continuous Thin-Slab Caster", Proc. MCWASP IX, Shaker Verlag, GmbH, Aachen, Germany, 2000, pp. 769-776.
34. B. G. Thomas, R. J. O'Malley, and D. Stone, "Measurement of Temperature, Solidification, and Microstructure in a Continuous Cast Thin Slab", Proc. Modeling of Casting, Welding & Advanced Solidification Processes III, Minerals, Metals & Materials Society, San Diego, CA, June 7-12, 1998, pp. 849-860.
35. K. Morwald, J. Watsinger, and R. O'Malley, "Roll Load Measurements for Slab Casting", Proc., Instrumentation and Control Developments in Steelmaking and Casting, The Royal Society, London, UK, 25-26 March 1997.
36. J. F. Elliott and R. J. O'Malley, "Chemical and Physical Changes Occurring as Oxide and DRI Pellets are Heated in Liquid Slags", Proc., Sixth International Iron and Steel Congress, 1990, Nagoya, ISIJ, pp. 131-138.
37. Q. T. Fang, P.N. Anyalebechi, R. J. O'Malley, and D. A. Granger, "Effect of Solidification Conditions on Hydrogen Porosity Formation in Directionally Solidified Aluminum Alloys", Proc. Solidification Processing 1987, Sept. 21-24, 1987.
38. D. Apelian, R. J. O'Malley, and C. E. Dremann, "Injection of Non-Buoyant Particles", Proc., Scaninject II, 2nd International Conference on Injection Metallurgy, Lulea, Sweden, June 12-13, 1980, pp. 7:1-7:33.

Research Activities

FY	Title	Source	Shared credit
2019	PSMRC Administration	PSMRC	100
\$ 698,793	Identification of trans by resist.	POSCO	80
	Peritectic Behavior Detection	PSMRC	70
	Mold Heat Transfer Analysis	ATI	70
	Non-Metallic Inclusion Engineering	PSMRC	60
	Cast Strip Research	CASTRIP LLC	50
	Steel Refractory Interactions	PSMRC	40
	Hot Rolling Material Flow Analysis	PSMRC	33
	Machinability	PSMRC	30
	Innovative Casting Quench Techn	ADV TECH INT	30
	Improving EGL Tube Production	REPUBLIC	25
	Scale Formation and Descaling	PSMRC	20
	Hot Tearing, Segregation & Porosity	PSMRC	20
	Microalloy Precip Ductility	PSMRC	20
	High Strength Lightweight HS Steel	SFSA	20
	Cooperative Agreement: Advanced Arm	ARL	17
	Metal Additive Manufacturing	HONEYWELL	5
2018	PSMRC Administration	PSMRC	100
\$ 335,892	Non-Metallic Inclusion Enginee	PSMRC	50
	Machinability	PSMRC	30
	Ultra-thin Cast Strip Product	CASTRIP LLC	30
	Improving EGL Tube Production	REPUBLIC	25
	High Strength Lightweight HS Steel	SFSA	20
	Next Generation Slag Line Ref	PSMRC	10

2017	PSMRC Administration	PSMRC	100	
\$ 503,789	Non-Metallic Inclusion Enginee	PSMRC	90	
	Influence of Mold Flux Crystallization	PSMRC	75	
	Non-Metallic Inclusion Engineering	PSMRC	60	
	Griffin Wheel Characterization	Amstead Rail	50	
	Gerdau APEX Project	Gerdau	50	
	Machinability	PSMRC	50	
	Ultra-thin Cast Strip Product	CASTRIP LLC	30	
	C Pickup	PSMRC	10	
	Next Generation Slag Line Ref	PSMRC	10	
	Metal Additive Manufacturing	HONEYWELL	5	
	2016	PSMRC Administration	PSMRC	100
\$ 393,664	Influence of Mold Flux Crystallization	PSMRC	75	
	Non-Metallic Inclusion Engineering	PSMRC	60	
	Gerdau APEX Project	Gerdau	50	
	CAT Optimized Induction Melting	CAT	50	
	Griffin Wheel Characterization	Amstead Rail	50	
	Ultra-thin Cast Strip Product	CASTRIP LLC	30	
	C Pickup	PSMRC	10	
	Metal Additive Manufacturing	HONEYWELL	5	
	2015	Non-Metallic Inclusion Engineering	PSMRC	60
	\$ 213,467	Influence of Mold Flux Crystallization	PSMRC	75
		PSMRC Administration	PSMRC	100
Ultra-thin Cast Strip Product		CASTRIP LLC	30	
Gerdau APEX Project		Gerdau	50	
CAT Optimized Induction Melting		CAT	50	
Metal Additive Manufacturing		HONEYWELL	5	

ADVISEES

MS, PhD Students

- Yu Shi – PhD Candidate
- Deva Neelakandan – PhD Candidate
- Tiffany Wysong – MS Candidate
- Hurley, Cassandra – PhD Candidate
- Yizhou Du – PhD Candidate
- Damilola Balogun - PhD Candidate
- Richard Osei - PhD Candidate
- Soumava Chakraborty – PhD Candidate
- Obinna Adaba – PhD, completed Summer 2019
- Dustin Arvola – MS, completed Spring 2018
- Mark Emmendorfer – MS, completed Spring 2018
- Elizabeth Peterson– MS, completed Spring 2017
- Obinna Adaba – MS, completed Fall 2015

Post Doctorate and Visiting Researchers

- Rahul Sarkar - Post Doctorate Researcher 2019
- Mario Buchely – Post Doctorate Researcher 2018 - 2019
- Xueliang Zhang – USTB Visiting Researcher 2019
- Hang-Sik Cho – Posco Visiting Researcher 2019

Co-Advised Students

- Okanmisope Fashanu – PhD Candidate
- Shouvik Ganguly – PhD Candidate
- Yanru Lu – PhD Candidate
- Tyler Richards – PhD Candidate
- Muhammad Roman – PhD Candidate
- Madhuri Varadarajan – PhD Candidate
- Dinesh Alla – PhD Candidate
- Colton Dailey – PhD Candidate

SERVICE ACTIVITIES

Professional Society Service

17. AIST President, 2019-2020.
18. AIST Vice President, 2018-2019.
19. AIST Executive Board of Directors, 2015–2018.
20. AIST Awards and Recognition Committee Chair 2016-2017.
21. AIST Conference Planning Committee Chair 2017-2018.
22. Lecturer, Brimacombe Continuous Casting Course, April 2016, 2017, 2018.
23. Lecturer, AIST Bar and Rod Technology Short Course, Ft. Worth 2014.
24. Lecturer, AIST Making Shaping and Treating of Steel, Nashville 2014, Cleveland 2014, Charlotte 2015, Hamilton 2015, Huntsville 2016, Dearborn 2017.
25. Lecturer, AIST Pipe and Tube Technology Short Course, Pittsburgh 2014.
26. Lecturer – AIST Continuous Casting: A Practical Training Seminar, Indianapolis 2014, Charleston 2015, Memphis 2016, Ft. Wayne 2017, Dearborn 2018.

University Service

27. Summer Engineering Research Academy (SERA), Advisor, Summer 2019
28. MRC Senior Investigator (2015-present)

Department Service

29. MSE space committee (2017-present)
30. Wolf Chair professor search committee (2015-2016)
31. Metallurgy curriculum review committee (2018-present)

External Service

- External examiner, April Pitts-Baggett, PhD, University of Alabama, Dept. of Metallurgical and Materials Engineering, 2017.
- External examiner, Saikat Chatterjee, PhD, University of Toronto, Dept. of Materials Science and Engineering, 2017.
- Assisted Missouri Partnership for International Business Recruitment with technical discussions with Sumangala Steel in support of a proposed greenfield steel micro-mill in New Madrid, MO.