

**Steel Founders' Society of America**  
**National T&O Conference – December 9-11 2021**  
**Wright Ballroom, Loews Hotel, Chicago, IL**

**Session 1**

**Thursday Morning – December 9**

**9:00 AM**

- **1.1 The Benefits and Opportunities of Using Co-Botic Grinders**  
Matthew Morley, John Sanderson, Sheffield Forgemasters
- **1.2 Automation in a Job Shop Environment**  
Dean Sampson and Dave Sarvela, ME Global - Duluth
- **1.3 Robotic Grinding - Lessons Learned and Where We Are Today**  
John Anderson, Northern Stainless Corp.
- **1.4 Machine Learning with Small Datasets**  
Adam Kopper, Mercury Marine
- **1.5 Increase in the Durability of the Refractory in the Melting Processes in AMM**  
Mario Terrazas, Acerlan Matrix Metals
- **1.6 Digital Regulator Implementation of Electrodes in EAF**  
Joel Resendiz Benitez, Mario Terrazas, Acerlan Matrix Metals
- **1.7 Our Melting Program's Evolution**  
Shawn Martin, Harrison Steel Castings Co.
- **1.8 Charge Builder App**  
Jeff B. Burek, DW Clark
- **1.9 Optimization of AOD Carbon End Point Detection by Flame Image Analysis and Steel Chemistry Modeling**  
Patrick Ray, V. Hernandez, G. Vellejo, J. Maiolo, Regal Cast/Linde
- **1.10 Slag Recycling**  
Amoldeep Jaggi, Magotteaux - Pulaski
- **1.11 Surviving a Ransomware Attack**  
Nic Tarzwell, Eagle Alloy
- **1.12 Productivity Bonus**  
Jorge H. Okhuysen V., Corporacion POK
- **1.13 Economic Forecasting, Trend Analysis Methodology.**  
Joe Plunger, Midwest Metal Products
- **1.14 Market Forecast**  
Jessica Okhuysen, Corporaçion POK

**Industry Luncheon**

- 2.1 The T&O - Yesterday, Today and Tomorrow  
David Poweleit, SFSA
- ◆ 2.2 A Melting Literature Review  
Ken Sandell, SFSA Alumni
- ◆ 2.3 SFSA Project 80 - 50 years later  
Paul Rudd, SFSA Alumni
- ◆ 2.4 Project A-54 Review; It's All About the Oxygen  
Ken Murphy, SFSA Alumni
- ◆ 2.5 HSLA Best Practices  
George Hartay, SFSA Alumni
- ◆ 2.6 Steel Casting Design: GD&T - Designer & Producer's Best Friend  
Mike Gwyn, SFSA Alumni
- ◆ 2.7 Direct Castings Utilizing Engineered Processed Molds/Components  
Donald Deptowicz, SFSA Alumni
- 2.8 3D Printed Foundry Tooling; Pros, Cons and Practices  
Joel Kovacs, Abel Ardis, American Foundry Group
- 2.9 Useful 3D Printing Applications in the Foundry  
Antonio Pizzuto, Roberto Aguilar, RAMSA de CV

**Discussion Session followed by Industry Reception**

- 3.1 Shutdown Due to Deep Freeze  
Mitchell Wright, Henderson Manufacturing
- 3.2 National Emphasis Program, (NEP) and MIOSHA: A Case Study  
Dave Fazakerley, Eagle Alloy
- 3.3 Safety  
Alejandro Cortes, Corporacion POK
- 3.4 Continuous Process Improvement:  
A Case Study of Unexpected Outcomes  
Tony Badamo, Ashland Foundry & Machine Works
- 3.5 Casting Quality Improvements in a Jobbing Foundry  
Michael Graebner, Bay Cast
- 3.6 The Benefits of Process Record Development  
Jonathan May, Howell Foundry
- 3.7 Heat Treatment Tracking and Quality Assurance  
Alex Distel and Nicholas Gerdes, Nicholas Gerdes, Fisher Cast Steel Products
- 3.8 Tube Tracking Project  
Zach Bartels, MetalTek - Wisconsin Centrifugal
- 3.9 Fracture Surface and Metallurgical Characterization of  
Cyclically Loaded Steel Castings  
Robin D. Foley, John Griffin, University of Alabama - Birmingham
- 3.10 MPI Testing, Productivity Improvement by 3D Turning Magnetic Field  
Rémi Godfroy, Cyril Millot, Ferry Capitain
- 3.11 PA-UT VS X-ray, the Next Steps  
Johann Speekhout, McConway and Torley
- 3.12 Welding of Steel Castings to ASTM A488  
Roman Pankiw, Duraloy
- 3.13 United Kingdom's UKCA compared to the EU's 2014/68/EU PED -  
A Comparison  
Michael Porfilio, Stainless Foundry & Engineering

## Industry Luncheon

- 4.1 Installation of Water Blast Unit at Stainless Foundry and Engineering  
Maxwell Selbach, Stainless Foundry & Engineering
- 4.2 Using Multiple Regression Analysis to Predict Scrap  
John Paul McCarten, Andritz
- 4.3 Investigation into Improvement of Mechanical Properties of CK3MCuN  
Kiersten James, Stainless Foundry & Engineering
- 4.4 3D Sand Printing and the Foundry Process  
Joe Hutto, Howell Foundry
- 4.5 Foundry Training Program  
Margot Henke, Stainless Foundry & Engineering
- 4.6 Metal penetration defect in heavy section steel castings: An exploration of its cause, effects and prevention  
Amir Baghani, Timothy Hays, Paul Kelsey, Harrison Steel Castings Co.
- 4.7 Binder System Conversion at Magotteaux Pulaski  
John Cory, Magotteaux
- 4.8 Mold Wash and Gas-Related Problems  
Willy Oyarzabal, Felipe Ponce, Fimex
- 4.9 Vertical Pour Lip Ladle (VPLL) Design  
Willy Oyarzabal, Fimex
- 4.10 Cerioxide Reduction at Newport News Shipbuilding – Baseline Castings  
Drew Christensen, An Tran, Bryan Staha, Jason Binns, Newport News Shipbuilding
- 4.11 Effects of Gating System and Casting Geometry on Oxide Inclusions in Steel Castings  
Robert Donahue, Richard A. Hardin, Christoph Beckermann, University of Iowa

## Discussion Session

- 5.1 Effect of Composition and Thermal Processing on Mechanical Properties of C1Q and E2Q1  
Daniel Harris, Monett Metals
- 5.2 Heat Treatment of Heavy Section Manganese Steel Castings  
Miroslav Jiras Sponza, Julio Medina, Jhonny Leon, Ricardo Sors, FUNVESA
- 5.3 Discovery of Intermetallic Sigma Phase Present in Heats Cast in ASTM A351 CF3M  
Michael Beining, Badger Alloys
- 5.4 Improving Yield Strength in CF8 Centrifugal Castings  
Derek Kipka, MetalTek - Sandusky
- 5.5 Case Study in Carburization in a Large CA6NM Casting  
Brian Harwood, Bradken - Atchison
- 5.6 Reduction of Cracking in High-Alloy Castings by Reducing the Severity of Quenching  
Mario Terrazas, Lourdes Herrera, Acerlan Matrix Metals
- 5.7 Development of Nickel Alloy Castings for CSP Applications  
Jim Myers, Paul Enders, MetalTek  
Govindarajan Muralidharan, Oak Ridge National Laboratory
- 5.8 Hydrogen in Cast Steel  
Jean-Francois Carton, Safe Metal
- 5.9 Fundamentals of Navy Structural Materials Technology and Confirmation Testing  
Matt Draper, Sam Schwarm, US Navy
- 5.10 Experimental Evaluation of Welded Interfaces Between Steel Castings and Round HSS  
Imraan Bokhari, Robert B. Fleischman, Joseph Moya, University of Arizona  
Hayley Brown, Diana David, SFSA
- 5.11 Study and Properties of Steel Shape Castings as Forging Preforms Before and After Forging  
Charles Monroe, John Griffin, Robin Foley, University of Alabama

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