



AIST/IAS MAINTENANCE, LUBRICATION, HYDRAULICS AND FORENSIC ENGINEERING SEMINAR

The Association for Iron & Steel Technology (AIST) and the Instituto Argentino de Siderurgia (the Argentine Institute for Iron & Steel, IAS) joined forces once again and held the Maintenance, Lubrication, Hydraulics and Forensic Engineering Seminar on 20–22 October 2015 at the Ros Tower Hotel in Rosario, Santa Fe, Argentina.

This international seminar opened with an introduction by Oscar Simaro, technical director at IAS (pictured above). Over the course of three days, 30 presentations were given, along with three keynote speeches. A total of 157 industry professionals (103 from producer companies Tenaris, Ternium Siderar, Acindar Grupo ArcelorMittal, Gerdau, Ternium México and ArcelorMittal USA) from four countries (U.S., Argentina, Mexico and Spain) attended the seminar.

On Tuesday, 20 October, the discussion focused on issues related to lubrication. Presentations included:

- ▶ *“Centralized Lubrication System Technologies”*
Bijur Delimon International
- ▶ *“Air-Oil Technology Lubrication at Rolling Mill Stands”*
SKF Latinoamerica
- ▶ *“Hydraulic Systems – Fluid Connector Technology”*
Parker Hannifin Argentina
- ▶ *“Reliability 101: Return to the Basics”*
ArcelorMittal Indiana Harbor
- ▶ *“Lubrication Management”*
SKF Argentina
- ▶ *“Low-Viscosity Lubricants and Their Influence on Energy Efficiency in the Automotive Industry”*
Shell



- ▶ **“Improving Gear and Gearbox Reliability”**
Xtek Inc.

- ▶ **“Environment Control Management in Maintenance of Ternium Siderar”**
Ternium Siderar

- ▶ **“Care, Handling, and Maintenance of Turret and Other Large Bearings”**
Messinger Bearings

- ▶ **“Monitoring, Diagnostics and Control of Hydraulic Oil in Large Processes”**
Parker Hannifin Argentina

The keynote lecture, “New Synthetic-Based Oil Technology Obtained From Natural Gas (GTL) and Its Application in Lubricants Used in the Steel Industry,” was given by Paolo Romorini, lubrication technical advisor from Shell Industries. This presentation demonstrated how features such as high oxidation stability, low friction, high purity, sulfur content of less than 5 ppm, low volatility and low pour point make it possible to obtain finished lubricants with higher levels of performance than those formulated with conventional-based oils. Real-world case studies from steel plant applications (turbine oils, electrical insulating oils for transformers and as washing oil in a byproduct coke plant) were used to showcase the results.

On Wednesday, 21 October, the main focus of the day was forensic engineering. The presentations included:

- ▶ **“Condition-Based Monitoring Techniques for the Steelmaking Industry”**
IVC Technologies
- ▶ **“Process Troubleshooting and Optimization Using Computational Simulation and 3D Visualization”**
Purdue University Calumet
- ▶ **“Structures Verification Plan at Ternium Siderar”**
Ternium Siderar
- ▶ **“Failure Analysis and Material Characterization of a Shaft Used in Tube Forming Machine”**
Instituto Argentino de Siderurgia
- ▶ **“Failure Analysis of a Compressor Breakdown”**
Molysil
- ▶ **“Getting to the Root Cause of Bearing Failures”**
Messinger Bearings
- ▶ **“Gearbox Failure Forensic Analysis”**
Estudio Piña
- ▶ **“Boroscopy Predictive Technique That Generated Benefits in the BF2 at Siderar”**
Ternium Siderar
- ▶ **“Fastener Disassembling on HAGC Guide Shelf F2 at Hot Mill 3-Churubusco Plant”**
Ternium México



▶ ***“A Way to Fight Against the Working Capital Increases”***

Ternium Siderar

Wednesday’s keynote lecture, “Forensic Engineering: Root-Cause Analysis in Machinery Breakdown,” was given by José Manuel Herrero Sánchez of Investigación de Siniestros, Spain. This presentation introduced some concepts related to machinery breakdowns and covered terminology and degradation processes. It also covered forensic engineering methodology and special features related to forensic engineering, using illustrative examples.

On Thursday, 22 October, a variety of case studies were presented that focused on key maintenance topics of interest for those who work in industrial facilities. These presentations included:

▶ ***“Reliability: Building a Culture for Sustained Success”***

ArcelorMittal Indiana Harbor

▶ ***“Plastic Piping in the Steel Industry”***

Georg Fischer

▶ ***“Steelmaking Shop Bay Maintenance”***

Acindar Grupo ArcelorMittal

▶ ***“How to Fight Rust and Paint New Technologies”***

Sherwin-Williams

▶ ***“Process Safety Management Systems, Pathologies, Reinforcements, Recovery, and Intervention of Concrete and Steel Structures”***
Soluciones Constructivas

▶ ***“Technology-Based Crane Monitoring and Diagnostics”***

IVC Technologies

▶ ***“3D Measurements Into Steel Works”***

Ternium Siderar

▶ ***“Energy-Saving Maintenance — Replacing Traditional Combustion System of the TS Rolling 1 Intermediate Reheating Furnace by a System Using High-Efficiency Burners (Recuperative)”***

Tenaris Siderca

Thursday’s keynote lecture, given by Pablo Barassi, Integrar-RRHH, was titled “The Importance of a Conscious Leadership to Succeed in Maintenance Activities.” This dynamic presentation addressed leadership issues and best practices with common maintenance-related practices.

A special thank-you goes out to our partners, the IAS staff, who worked hard to make this seminar a success. ♦