



Precious Metals News

A Publication of the International Precious Metals Institute
(850) 476-1156 • Fax (850) 476-1548 • E-mail: mail@ipmi.org • www.ipmi.org

Volume 42, Number 6

June 2018



IPMI 42nd Conference

The IPMI 42nd Conference was a terrific success with over 550 attendees and guests attending at the beautiful and scenic JW Marriott San Antonio Hill Country Resort. The change in Technical Session format resulted in well attended sessions, such as Sampling and Analytical, New Technology, Finance as well as Legal and Environmental. A Plenary Session featuring a talk by Marc Chandler of Brown Brothers Harriman, was held on Sunday morning. New Features this year included New Technology - What's on the Horizon as well as an Ask the Experts Panel. Both of these new events were well attended and will be featured at future conferences. There was something for everyone at the 42nd Conference.

The Exhibit Hall was open Sunday Monday and Tuesday and held 12 booths. Delegates and guest could come in and meet with vendors who offered a variety of product and services to the precious metal industry.

A new event this year was the Patron Member Social in which IPMI hosted a small reception to thank IPMI's faithful and supportive Patron level member reps. Two corporate sponsored afternoon events proved to be very popular. Gannon & Scott hosted a sports themed party where delegates sported their favorite

team jerseys and Inspectorate hosted a western themed Ladies Only Social where the ladies donned cowgirl hats and rumor has it that there was even a horse there.

The evening events were spectacular starting with the Welcome Reception sponsored by Tanaka Kikinzoku Kogyo and Metalor Technologies where guests enjoyed a special sushi menu. JM held an outdoor event on Sunday evening and the beautiful grounds of the Marriott. On Monday delegates and guests were entertained with a cocktail reception-the first ever sponsored by multiple IPMI member companies-and the LBMA sponsored Cap City Band concert.

The Conference ended on Tuesday evening just after the Closing Reception which followed the Awards Banquet where four Premier Awards, a Posthumous Award and nine Student Awards were presented. An education driven institute, IPMI is proud to bestow the awards that recognize the career, and research achievements of the Award Winners.

IPMI thanks the delegates, vendors, speakers, moderators and sponsors who made this event possible.

We hope to see you all in Reno for the 43rd Conference!

IPMI 6th Annual Platinum Dinner

The IPMI's 6th Annual Platinum Dinner will again be held at the historic and elegant Lotte Palace New York Hotel on Madison Avenue in Manhattan Thursday September 13. Guest speaker will be Derek Sammann of the CME Group. You can register for your table or seat online on our website www.ipmi.org under Event Calendar. Platinum, Silver and Gold Sponsored Tables are again offered as well as single seats.

- Platinum Sponsored Tables are for 10 guests of the Sponsor and includes table signage as well as company name on sponsor banner. All guests of sponsor receive one year membership in IPMI provided they do not already have a membership. \$5350.00
- Gold Sponsorship includes 4 dinner seats and table signage as well as company name on sponsor banner. \$2500.00
- Silver Sponsorship includes 2 dinner seats and table signage as well as company name on sponsor banner. \$1400.00
- Single seat for member \$375.00 Non Member or those not current on dues \$425.00 (includes a one year membership)

Other sponsorship available

Drink Sponsor- have your owned named drink at the Platinum Dinner Cocktail hour! Also includes sponsor banner. Call IPMI office for details. 850-476-1156

We hope to see you at the Palace in September!



42nd Conference Awards and Recognition Recipients



Chris Jones presents the Gannon and Scott sponsored IPMI Founders Award to Bodo Albrecht



Weiping Liu accepting the IPMI Colonial Metals George Benvegno Memorial Student Award



Pranaw Kunal accepting the IPMI Republic Metals Richard Rubin Memorial Award by Jonathan Jodry



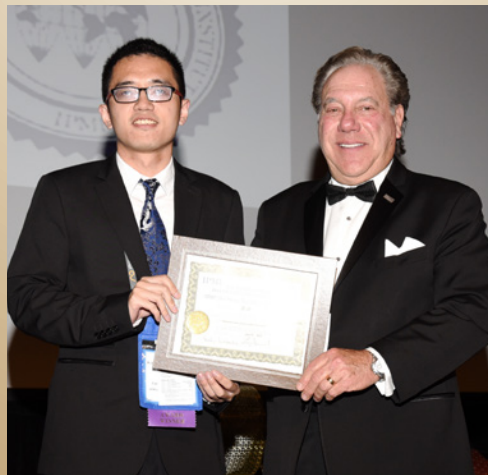
Andrea Bruck accepts the IPMI Student Award by Jonathan Jodry



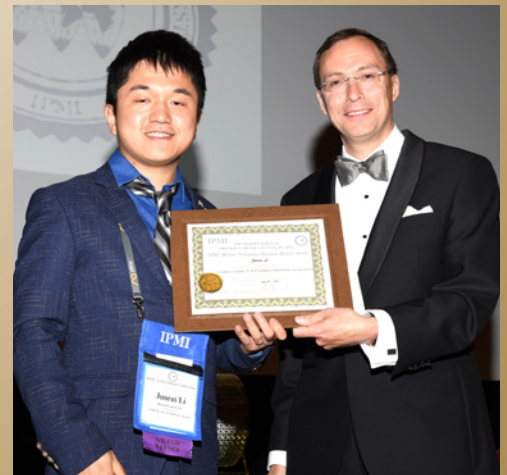
Jonathan Jodry presents IPMI Student Award to Kent Kirlikovali



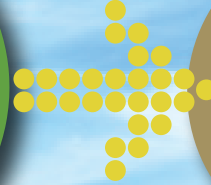
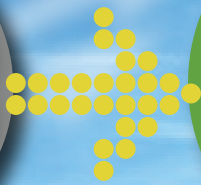
Yolanda Bonita accepts the IPMI Johnson Matthey Award



IPMI Bright Futures Award sponsored by the Gero Family Trust presented by Alan Kaye to Qi Li



Junrui Li is presented the IPMI Metalor Technolgoies Student Award by Jonathan Jodry



Refine Your Assets With the Leader For Maximum Value



Capabilities

The combination of state-of-the-art equipment using leading edge technology and our highly trained, knowledgeable staff allows us to process material for **Diverse** industries.



Environmental Footprint

We are committed, responsible stewards of the environment. Our facilities are **Zero Discharge** and feature the most sophisticated pollution control systems in the industry.



Financial Strength

Our **Strong Financial Position** and direct relationships with several worldwide market leaders allow us to flawlessly execute your transactions. We offer a variety of settlement options to meet your specific pricing and hedging requirements.



Results

A singular focus on your bottom line drives us to use the **Optimal** refining processes every time. Partner with us for transparent, timely and accurate settlements, coupled with superior customer service.



GANNON & SCOTT
Advancing Precious Metals Refining & Assaying Since 1919



East Coast/Corporate Offices - 33 Kenney Drive, Cranston, RI 02920
 West Coast - 2113 East Sky Harbor Circle South, Phoenix, AZ 85034
 800.556.7296 - www.Gannon-Scott.com

42nd Conference Awards and Recognition Recipients



Hannah Na accepting the IPMI Sabin Metal Student Award from Brad Cook



Jonathan Jodry and Brent Vesa display the Larry Manziek Posthumous Award that was bestowed to the late Dr. Robert Jacobsen



Bodo Albrecht accepting Past President Award from Larry Drummond



Jonathan Jodry congratulating Professor Cathleen Crudden on the Carol Tyler Award, along with her daughter Caitlin



IPMI Metro NY Chapter Award presented by Larry Drummond to Timothy Gorey



Koichiro Tanaka presents the IPMI Jun-ichiro Tanaka Distinguished Achievement Award to Dr. Stewart Murray



Dr. Zachary Henneman presenting the IPMI BASF Henry J Albert Award to Professor Robert Grubbs



ALFRED H KNIGHT

**GLOBAL METALS &
MINERALS SPECIALISTS**

'We deliver a full range of analytical services to our clients, in addition to providing independent inspection and technical expertise.'

The Alfred H Knight North American laboratory is ISO17025 accredited and specialises in analysing precious and platinum group metals in a broad range of commodities.

In addition to our experienced chemists and technicians, our operations have dedicated teams of knowledgeable support staff committed to assisting our clients in all aspects of precious and platinum group metals inspection and analysis.

AHK North America offers independent inspection, weighing and sampling services to the precious and platinum group metals industry. Our locally based, experienced inspectors cover all major precious metal refineries, producers and re-claimers in the US and Canada.

For more information:

✉ us.enquiries@ahkgroup.com

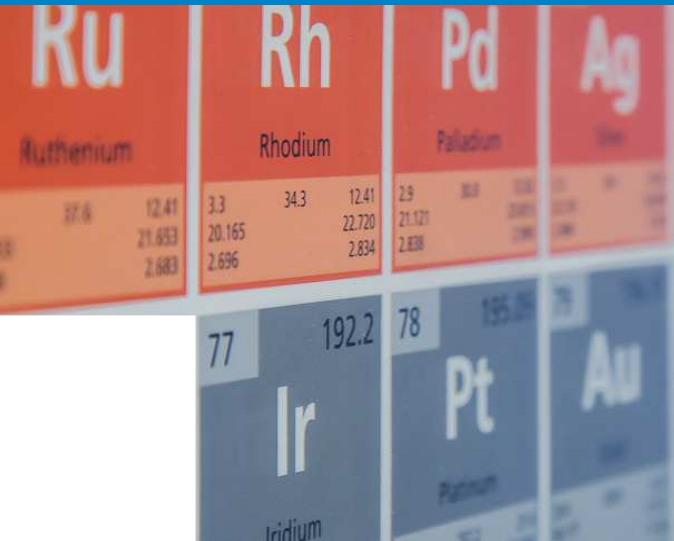
🌐 www.ahkgroup.com/NorthAmerica



ALFRED H KNIGHT

At the forefront of the **metals** and **minerals** industry for over **135 years**

IPMI® CHAPTER NEWS



SAVE THE DATE!
7 Precious Metals:
A 2-Day Seminar
 sponsored by the European Chapter
 November 12th - 13th, 2018
 Hilton Hotel Budapest, Hungary

Registration will be open soon!
www.ec-ipmi.org

Sponsorship Levels and Prices

Contact: <http://www.ec-ipmi.org> / or officers@ec-ipmi.org

Platinum	Gold	Silver	
1	up to 4	up to 6	Number of packages available
5.000,00 €	2.500,00 €	1.500,00 €	Price
to be organized by the European Chapter			
•	•	•	Logo on programs, visual displays, screens, ...
•	•	•	Logo on banners displayed by the Chapter
•			Possibility to address the participants (opening speech, 3 minutes)
•			Private meeting room next to conference venue available at a discounted rate
to be organized by the sponsor at its expenses			
•	•	•	Distribution of pamphlets at registration desk
•	•	•	Giveaways at registration desk
•			Information on dinner tables (Monday evening)
•	•		Possibility to have a small desk at the venue
	•		Information on break tables (Monday afternoon and Tuesday morning)
		•	Information on cocktail tables (Monday evening, pre-dinner)

One of the world's largest recyclers of scrap automobile catalyst

TECHEMET

www.techemet.com +1-281-991-8300

REPRESENTATION & ANALYSIS

WWW.AXIUMSCI.COM

AXIUM SCIENTIFIC
 PRECIOUS METAL TRADE PROTECTION

MARKETING@AXIUMSCI.COM | SPARKS NV | 775.771.6771

Conference Technical Program Summaries

Session A Francis Pitard presented a powerpoint presentation entitled *“Correct Sampling Systems and Statistical Tools for Metallurgical Processes.”* Some of the topics covered:

- Correct, equi-probabilistic cross-stream sampling system used for Metallurgical Account
- Common sampling systems used for Process Control
- QA-QC Verification Requirements
- Tabular Cumulative Sum Plots
- Bias Tests must be carried on until a conclusive event is reached

Session B was devoted to Student Research in which student award winners gave presentations on their research.

Hanah Na started the session with Synthetic Strategies to Optimize Photophysical Properties of Luminescent Cyclometalated Iridium Complexes. Her powerpoint presentation included photos and graphs and she discussed Luminescent Ir(III) Complexes as well as Luminescent Ir(III) Complexes and Iridium complexes with chelating dicarbene ancillary ligands. Next, **Junrui Li** presented *“Fe Stabilization in Intermetallic L10-FePt and Enhanced Oxygen Reduction Reaction Catalysis in Core/shell L10 FePt/pt Nanoparticles for Fuel Cells.”* He discussed that Proton exchange membrane fuel cell is a green energy power source with high power density and superb power efficiency. It converts the chemical energy stored in sustainable fuels (i.e. hydrogen, alcohol and formic acid) directly into electricity that powers vehicles and electronics. Pt is the state-of-the-art oxygen reduction reaction catalyst for fuel cells. **Weiping Liu** was next on the podium with *“Higher Selectivity of Diisobutyl Monothiophosphate in the Flotation of Elemental Gold from Pyrite.”* He explained Gold contained in copper ores represents an important resource in the gold industry. In some cases, elemental gold can be recovered by flotation. For example, gold is typically associated with chalcopyrite and lesser amounts with pyrite in Grasberg Mine, Indonesia. Minor amounts of elemental gold are also present. A more selective collector for elemental gold would lead to improved gold recoveries. **Pranaw Kunal** rounded out the session with *“Synthesis of Interesting Precious-metal Based Nanoparticles as Highly Active Heterogeneous Catalysts: a comprehensive experimental and theoretical study.”* He shared that his research revolves around applying metallic NPs as catalysts for various chemical reactions. One of the key approaches of his research is dilution of expensive metals (Rh, Pd, Ir, Pt, Au) using readily available cheap metals (Cu, Ag).

Session C was revolved around Finance. The first presented was **Miguel Perez-Santalla** of Heraeus who delivered *“Hedging Metals in a Difficult Market.”* His presentation informed of concepts of hedging precious metals price risk in both normal and backward markets. Delegates next heard from **Neil Meador** of Metals Focus. His presentation was *“Outlook for Global Platinum Jewelry Demand: China, US and India.”* Focussing on PGMs, he spoke about the outlook for global platinum jewellery demand, focussing on China, the US and India and asking if platinum jewellery demand can impact platinum’s physical surplus and, by extension, have any bearing on the platinum price itself. **Bart Melek** centered his talk on *“Precious Metals Outlook”* focusing on the outlook for gold, silver and PGMs, including price trends and demand/supply conditions and exploring key relationships between macroeconomic variables, central bank interest rate policies, currency markets, speculative activity and physical markets, and present the TD Securities’ price outlook. **Jonathan Butler** of Mitsubishi then delivered *“Managing Price Volatility in Precious Metals: How to Navigate Risk and Uncertainty.”* Rising interest rates, soaring equity markets, a choppy US dollar and concerns that the bond market will break from a 30 year bull trend in 2018, all make for volatility and uncertainty in precious metals prices. An understanding of the fundamental supply-demand picture for each metal assists in navigating this uncertainty: taking the example of palladium, one of last year’s top performing metals, and look at how a tight supply situation combined with speculative investment and a drawdown of near market stocks to create exceptional forward market conditions and record high prices.

Session D’s platform was New Technology. Starting off was **Michelle Lynch** of Enabled Futures with *“Electric Vehicle Battery Recycling: Industry Status, Forecasts and Strategies.”* Her presentation set out strategies to develop a strong and profitable position in the future automotive recycling environment. **Tanja Trosch**, a student at Bayreuth University, was next with *“Development of a Platinum Casting Alloy for Jewelry and Watchmaking.”* She shared that during her PHD she generated a total of 5 new platinum casting alloys and improved them. All alloys were tested for castability, mechanical, microstructural and optical properties and compared to a currently used benchmark alloy and that two very well-suited alloys resulted from the work and a patent application has been filed and that at the beginning of next year the best of these two alloys will go into production in the Swiss company. **Alexey Kornienko** of Krastsvetmet was next with *“Lifecycle Building Information Model and Process Flows Management in Spent Catalyst Processing Facility.”* He discussed that

continued on page 9



Alex Stewart International Corporation



Alex Stewart International provides inspection, weighing, sampling and assay services for the global precious metal industry, including all major and reputable UK, USA, Asian, African and European precious metal refineries.

Your Global Network of Inspection & Analytical Laboratory Services

Alex Stewart (International) Corporation

2b Sefton Business Park, Aintree, Liverpool L30 1RD United Kingdom

T: +44 151 525 1499 **F:** +44 151 523 3760

All PM enquiries, please contact Mr. Andy Smith **E:** andy.smith@alexstewartinternational.com

www.alexstewartinternational.com

Conference Technical Program Summaries

the software platform gives a 3D view of facilities in an easy-to-use format for plant manager that links the asset information with real-time facility operations data acquired by meters and sensors and facility management software. This allows for intelligent analysis of a plant's performance and supports better maintenance practices, resulting in significant reductions in labor hours and energy use. It introduces a complete change management where forecast and planning are done before implementation and rework is reduced. **Bodo Albrecht** of Sabin Metal then presented *"Metal Megatrends: New Applications for Precious Metals in 2019."* His presentation gave a snapshot of today's markets and explore developments that will change these markets next year, and beyond for in an era of rapidly evolving markets for consumer electronics, electric vehicles and sustainable energy generation, the role of precious metals is changing. In some market areas, precious metals are becoming obsolete while thriving in others. **Luca Fiorini** ended the session with *"How Artificial Intelligence Will Change The Future of Bullion Production: What will be the consequences of technological advances upon the bullion industry?"* Bullion production has experienced a vast change thanks to Tera's T-Line: it was provided with new efficient instruments like robotic solutions, vision, big data and module interconnection managing systems. Tera is now planning (developing) the next step: Machine Learning. It is a rapidly advancing technology which makes computers able to mimic the human ability to learn from experience.

Session E was focused on Environmental, Legal and Insurance. First, **Peter Quinter** gave an *"Update on Criminal Investigations and Prosecutions of Gold Dealers and Anti Money Laundering Programs."* Then, **Brian Ledgerwood** of U.S. Department of Commerce talked about *"Global Market Briefing of Trade in Precious Metals,"* briefing on global precious metals trade, identify export opportunities, discuss the impact that NAFTA may have on the precious metals sector, and information to participants on the many ways that the U.S. government can partner with you. **Anthony Lanzilotti** of Homeland Security Investigations rounded out the session with his presentation.

Session F was on Sampling, Assaying and Recovery of Metals. **Karen Paklin** of Olympus shared *"HH XRF for Catalysis Analysis,"* discussing that Handheld X-ray fluorescence (HHHXRF) analyzers have the capability to quickly and accurately display concentrations of platinum group metal (PGM) additives, such as Pt, Pd, and Rh contained within catalytic converters. **Algis Naujokas** of Sabin Metal, Chair of the Sampling and Analytical

Council, gave an *"Introduction to the IPMI Sampling and Analytical Committee."* **Corby Anderson** of Colorado School of Mines presented *"Precious Metals Recycling at the Kroll Institute of Extractive Metallurgy."* Formed in 1974, through the endowment of Dr. William Kroll after his creation of the modern titanium industry, the Kroll Institute continues to provide relevant research and education for industry. He summarized recent Precious Metals activities.

Session G was on Student Research. Student award winners presented their research. **Yolanda Bonita** presented *"Catalytic Applications of Bimetallic Noble Metal Phosphides for Biomass Upgrading."* Furfural hydrogenation is a key step in the production of furfuryl alcohol which is used in resin and lubricants industries. This process is currently catalyzed by an environmentally harmful copper chromite catalyst. Noble metals such as Ru have been explored to substitute the current catalyst. However, due to the highly reactive nature of furfural, the reaction tends to proceed further to form other hydrogenation products. Then, **Andrea Bruck** delivered *"The Silver Lining in Biomedical Batteries."* She informed that the strategy to create batteries that last longer, are more reliable, and can function in extreme conditions, such as biomedical implants, is using electroactive materials that generate silver metal inside the battery during its operation (in situ). Further, a major drawback of current battery systems is the use of carbon as a conductive additive. This traditional electrode design has proven to be an insufficient conductive substrate, leading to slow capacity loss or incomplete electrode utilization from poor contacts between electroactive materials. To fully utilize and understand the impact of a silver metal matrix on device performance, we use synchrotron based x-ray diffraction to map the formation of silver across the electrode. Next, **Timothy Gorey** shared *"Tuning the Structure and Behavior of Atomically-selected Platinum-Tin Cluster Catalysts."* He said that he has constructed a surface science instrument with the unique ability to produce PM clusters, where the number and type of atoms in each cluster can be EXACTLY controlled. With this level of control, he developed a tin-doped platinum catalyst that has shown remarkable stability under dehydrogenation conditions. The specific application for this catalyst is hypersonic aircraft, but coking/sintering are common problems in other industrial applications, such as Fischer-Tropsch, therefore making PtSn clusters a potentially powerful catalytic tool in the industry. **Kent Kirlikovali** presented *"Luminescent Pt (II) and Ir (III) Emitters for Organic Light-Emitting Diode Applications,"* informing that organic light-emitting diodes (OLEDs) incorporating Pt(II)- and Ir(III)-based luminescent

continued on page 10

molecules have achieved remarkable efficiencies in recent years, leading to the development of thinner and less energy-intensive television screens, mobile phone displays, and solid-state lighting sources. In order to realize the full potential of OLED-based devices on a global scale, critical issues related to efficiency and lifetime of blue OLEDs must be addressed. His team has developed unique ligand scaffolds incorporating icosahedral carboranes that can potentially improve the stability of these luminescent molecules in an OLED device. Ultimately, this work may potentially have profound global impacts across many industries and result in both economic and environmental benefits.

A **New Segment** was held on Monday afternoon, a forum for vendors to speak to delegates about their **New Technology on the Horizon**. Starting off the session was **Federico Padrono Martini** of IKOI who offered *“FCC – Melting & Casting Bars System: A Worldwide Technological innovation to Produce Good Delivery Bars at Lower Cost,”* and highlighted key elements in IKOI’s new technology

- Small IKOI SpA introduction
- FCC Description
- Technical data
- Advantages comparing with the actual system
- Video presentation of how FCC works

Next up was **Charlie Fink** of Inductotherm, whose presentation was *“iSense™: The Future of Advanced Diagnostics is Here,”* which reviewed the features and capabilities of Inductotherm’s most recent industry game changer—the technologically advanced iSense™ Melt Shop Equipment Data Visualization System. The system distributes real time data from Inductotherm equipment over network media through a combination of network topology, communication protocols, databases and sensors—all connected through a graphical user interface. Agilent was the next vendor to share their technology. **Paul Krampitz’s** presentation was entitled *“Precious Group Metals Analysis using Inductively Coupled Plasma Spectroscopy: Improving Precision and Spectral Interference Correction.”* Rounding out this new segment and was **Dr. David Deegan** from Tetronics who presented *“Recovery of Precious Metals from E-Waste using Plasma Smelting.”*

The Gold Standard in Precious Metal Business Management Software.

NAV FOR REFINING

Designed for and with Precious Metal Smelters, Refiners and Manufacturers of PM-based Engineered Products, CAI’s NAV for Refining builds on Microsoft’s® award-winning Dynamics® ERP software with a suite of easy-to-use tools that help you operate more efficiently, accurately and at a higher level of profitability.



CAi

Computer Associates

Call (800) 422-4782 or visit
caisoft.com/pm for more information.

IPMI 42nd Annual Conference



Newly Minted Executive Director Larry Drummond welcomes Carlos and Doris Ortiz from Atomic Gold



Sandra and Joann greet delegates



CJSapre, Joe DeRosa and Corey Keller at the Delegate's Reception



AndySmith and Ian Holden at the Patron Member Social



Tanaka and Metalor - a big thank you for a great Welcome Reception!



Regine and crew await the students at the Student Meet and Greet

Thank You
 for the generous donations provided by the following companies in sponsoring the 42nd Conference

- affinia Metals GmbH
- Alan and Joann Kaye
- Alfred H Knight Group
- ARC Metals
- Atomic Gold
- Axiom Scientific
- BASF
- BRM Services
- Central States Chapter of IPMI
- Chimet
- CME Group
- Colt Refining Inc.
- Delaware Depository
- Dillon Gage
- Europe Chapter of IPMI
- Gannon & Scott
- Glencore
- Hensel Recycling
- Heraeus
- Hugh Wood
- JBR Recovery
- Johnson Matthey
- Kitco News
- Krastsvetmet
- LBMA
- Lee Hockey Consultancy
- Loomis
- MAIREC Precious Metal Recycling
- Metallica Commodities
- Metallix Refining
- Multimetco
- New England Chapter of IPMI
- New York Metro Chapter of IPMI
- PAMP
- QML
- Republic Metals Corp.
- RS Bruce Ltd.
- Sabin Metal Corp.
- Sims Recycling Solutions
- Sipi Metals Corp.
- Techemet LP
- Umicore Precious Metals Refining
- United Catalyst Corp.
- VOTI Detection

IPMI 42nd Annual Conference



Delegates Enjoying the Johnson Matthey Outdoor Party



Alan and Joann Kaye and Sandra Arrants and Bodo Albrecht at the Gannon Afternoon Party



Joe Peixoto and Stanley Kravitz at the Patron Member Social



Delegates Stopping for a Photo at the Patron Member Social



Ask the Experts Panel



Howdy from Sue Strachan and Alyssa Rhoden at the Ladies Social

IPMI 42nd Annual Conference



EAG vendors greeting delegates



Exhibit Hall Vendors Ready to Offer their Wares and Services



Delegates showing their Team Spirit at the Gannon & Scott afternoon party



More guests Enjoying the Warm Breezes at the Johnson Matthey Party



Tina Potts, Birgit Wuest, Susan Hensel and Pauline Henning at the Ladies Social



Cheers to Another Great Conference

IPMI 42nd Annual Conference



The Hensels enjoying the Closing Reception



Brent Vesa offering up a toast to Bob Jacobsen



Outgoing President Bodo Albrecht with the new Officers, Becky Berube, Sascha Biehl, and Oliver Krestin along with new E.D. Larry Drummond



affinia Metals and Metallix Refining Sponsors of the President's Reception



Tom Watt, Zac Henneman, Melinda Combe and Stacy Santolli at the President's Reception



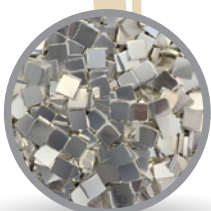
Regine Albrecht, Peg Jones and Tina Potts at the President's Reception

ISO 17034 REFERENCE MATERIAL

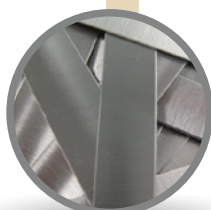
High purity metals for cupellation, spectroscopy, potentiometry & custom made materials



GOLD
Au \geq 999.99‰



SILVER
Ag \geq 999.9‰



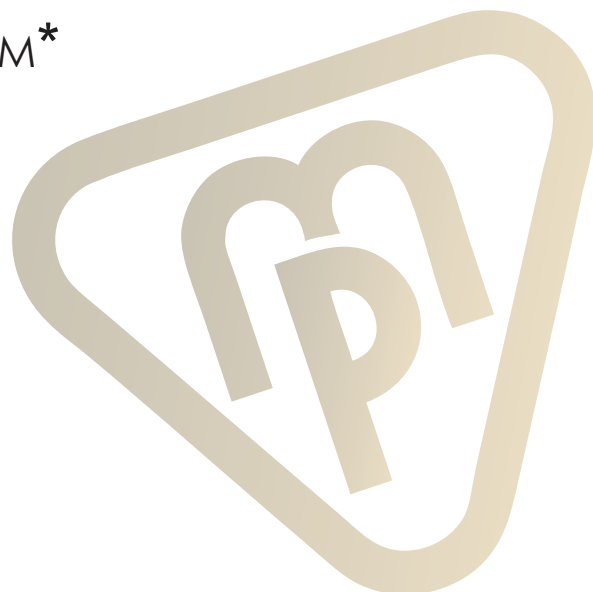
PLATINUM* / PALLADIUM*
Pt \geq 999.9‰ / Pd \geq 999.9‰



COPPER*
Cu \geq 999‰



CUSTOM MADE
Custom made (Certified) Reference Materials from fine metals to alloys can be produced at customer's specification.
Different shapes available.



ISO 17034

Metalor Technologies is the first company to obtain an ISO 17034 accreditation as "Producer of reference materials and certified reference materials in the field of precious metals"

*Non-accredited ISO 17034 Reference Materials



LBMA
Good Delivery
Referee



LPPM
Good Delivery
Referee

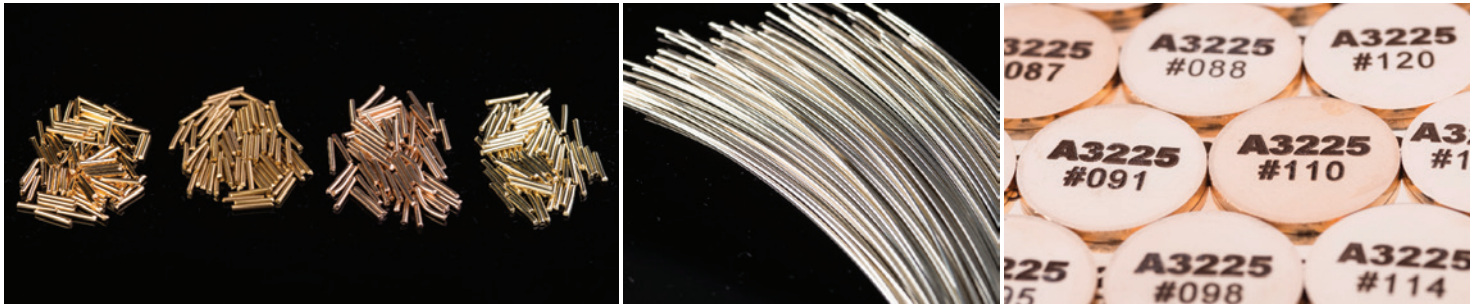


ISO/IEC
17025



ISO 17034

METALOR®



Reference Materials & Certified Reference Materials

High quality, pre-cut, fine Reference Materials for cupellation, ICP-OES & potentiometry.

Custom made (Certified) Reference Materials at customer's specification. Please contact us to discuss your needs and to receive a personalised offer.

FINE METALS

Metal	Size	Weight	Remarks
Au ≥ 999.99	Disk Ø 6 mm	250 mg	-
Au ≥ 999.99	Disk Ø 6 mm	187 mg	-
Ag ≥ 999.9	Square 6x6 mm	675 mg	Au, Pt, Pd ≤ 10 mg/kg
Ag ≥ 999.9	Square 6x6 mm	500 mg	Au, Pt, Pd ≤ 10 mg/kg
Ag ≥ 999.9	Square 6x6 mm	375 mg	Au, Pt, Pd ≤ 10 mg/kg
Ag ≥ 999.9	Square 6x6 mm	250 mg	Au, Pt, Pd ≤ 10 mg/kg
Ag ≥ 999.9	Square 6x6 mm	125 mg	Au, Pt, Pd ≤ 10 mg/kg
Ag ≥ 999.9	Disk Ø 3 mm	25 mg	Au, Pt, Pd ≤ 10 mg/kg
Pt ≥ 999.9	Cut strips	-	-
Pd ≥ 999.9	Cut strips	-	-
Cu ≥ 999	Disk Ø 3 mm	25 mg	Au, Pt, Pd ≤ 10 mg/kg Ag ≤ 100 mg/kg

CUSTOM MADE

Metal	Element & concentration	Remarks
Au alloys	100‰ ≤ Au ≤ 980‰	-
Ag alloys	740‰ ≤ Ag ≤ 980‰	-
Pt alloys	740‰ ≤ Pt ≤ 980‰	-
Pd alloys	400‰ ≤ Pd ≤ 980‰	-
Au	993‰ ≤ Au ≤ 999.99‰	Custom impurities
Ag	993‰ ≤ Ag ≤ 999.99‰	Custom impurities
Pt	993‰ ≤ Pt ≤ 999.99‰	Custom impurities
Pd	993‰ ≤ Pd ≤ 999.99‰	Custom impurities

“The quality of your analysis can never be better than the quality of your proofs & standards”

For more information, please contact us at:
laboratory@metalor.com
www.metalor.com



METALOR®

Derek Sammann to be Featured Speaker at IPMI's 6th Annual Platinum Dinner



The IPMI's 6th Annual Platinum Dinner's guest speaker will be Derek Sammann of the CME Group.

Derek Sammann has served as CME Group's Senior Managing Director, Global Head of Commodities & Options Products since 2014. He is responsible for leading the development, execution and management of

CME Group's global Commodities portfolio, including the Energy, Metals and Agricultural business lines. He also globally leads the company's cross-asset class Options business. Since joining CME Group in September 2006, Sammann also has served as Senior Managing Director of Interest Rates and FX Products, and

as Managing Director, Global Head of Foreign Exchange.

Prior to joining CME Group, Sammann acquired more than 16 years of sell-side trading experience in the global FX market, including serving as Managing Director, Global Head of FX Options and Structured Products at Crédit Agricole Corporate & Investment Bank in London. He also held senior level positions with Crédit Agricole Indosuez in London, Banque Indosuez in Paris and Cooper, Neff & Associates in Chicago.

In addition to serving on CME Group's Management Team, Sammann serves as a member of the Board of Directors of the following entities: the Dubai Mercantile Exchange, the COMEX Board of Governors and the Commodities Markets Council, where he also serves as Treasurer. Sammann also serves on the International Advisory Board of the Shanghai Gold Exchange, in addition to having served on the Founder's Council and as Vice-Chairman of the Foreign Exchange Professionals Association (FXPA) when launched in 2014.

He holds bachelor's degrees in both economics and political science from Northwestern University.



QML Inc. Global Sourcing and MST Domestic Refining



(401) 490-4555
email: sales@qml.us
www.qml.us

**In a sea of refiners, we are
THE BETTER CHOICE.**

(401) 762-0094
email: sales@mstllc.us
www.qml.us/mst

PATRON PROFILE

Welcome to QML, a premier source for precious metal reclamation.



QML industry professionals provide:

- Access to a global collection of refiners and smelters ensuring that unique reclamation needs are met.
- Metal financing vehicles or outright purchase to minimize inventory carrying costs and risk.
- World to world insurance coverage throughout the business cycle
- Complete customer satisfaction through openness and transparent reporting

RISK MANAGEMENT

Our approach to inventory risk management is simple, yet refreshingly different. We listen to our clients, analyze and understand their requirements and provide unique risk solutions. We seek to build real partnerships with our clients. We don't agree to routine approaches to risk management and we won't expect you to either.

Risk management services include:

Transportation and Insurance

QML provides transportation and storage services for scrap and bullion that are both secure and observant of ever changing regulatory compliance. We offer a complete spectrum of insurance to provide global coverage against loss through all phases of the reclamation process.

Material Processing

The QML team includes established relationships with an extensive collection of refiners and smelters, ensuring that your unique reclamation needs are addressed from inspection and sampling to analytical services and final settlement.

Hedging and Financing

QML provides pre-pricing, forward hedging and spot pricing of the metal content of your material to minimize inventory carrying cost and market exposure.

SOURCING

Complimenting our metal sales, QML also sources recyclable precious metals from secondary processors, accumulators, and large industrial accounts for export to major smelters and refineries worldwide.

We offer a transparent business model that follows proven protocols emphasizing security of the valuable materials entrusted to us, through the use of approved partners and confirmation of results by internationally accepted independent laboratories.

When QML manages the precious metal value chain from accumulation through final payment, our clients can be assured of cost effective, proper and ethical transactions.

BUILDING A TRUSTED PARTNERSHIP

QML's team of qualified professionals have the experience necessary to serve the total metal needs of your company - saving time, reducing risk and maximizing your profits. Openness and transparent reporting assure a trackable chain of custody throughout the global market.

FEEES YOU CAN AFFORD

Our experience allows us to obtain maximum profit for our customers in the e-scrap industry. Our service is often paid for with the additional profits we are able to garner for you. We'd welcome the opportunity to provide a risk free quote today.

Call us at (401) 490-4555.



Heraeus Precious Metals Expands Plant in Tennessee

Heraeus Precious Metals expands Wartburg, Tennessee precious metals recycling plant with new state-of-the-art recycling technologies and capabilities to meet growing demand from chemicals, electronics, automotive and jewelry industries.

Heraeus Precious Metals held a ribbon-cutting ceremony on May 30th with customers and government officials to celebrate the completion of a 30,000 square-foot expansion of their Wartburg, Tennessee facility. The multi-million dollar expansion project, which began in the spring of 2016, increases the plant's pre-processing capacity to meet growing demand from customers in the chemical, electronics, automotive and jewelry industries.

With customer materials presenting more complex recycling challenges, Heraeus used the Wartburg physical plant expansion as an opportunity to make a significant investment in new recycling technologies and capabilities, including specialized converters, furnaces and processing equipment. Andre Christl, President of Heraeus Precious Metals, said, "Processing and recovering precious metals has become extremely complex. But today we have a state-of-the-art facility and a world-class team of talented employees at Wartburg to meet our customers' recycling challenges."

One of the newest innovations at Wartburg is its pyrometallurgical recycling converter, which uses a highly-specialized process to recover precious metals faster and more economically. The converter will primarily focus on the recovery of Platinum group metals. In addition to the investments in the physical plant, technology and capital equipment, Heraeus has created nearly 20 new jobs at Wartburg with the goal of creating additional positions as recycling demand grows.

The investment and expansion in Wartburg is part of the company's global effort to strengthen its position as the world leader in precious metals across the entire lifecycle. With a global network of trading offices, processing facilities and recycling sites in Germany, Switzerland, China, South Africa, India, Hong Kong and the United States, Heraeus is the only true worldwide precious metal company serving the global market. Uve Kupka, President of Heraeus Precious Metals North America, noted that its Wartburg plant will serve as a critical processing hub to advance the way precious metals are recycled. He said, "Expanding

our Wartburg plant and creating new jobs is a proud moment for us. But what is particularly exciting is that this facility will help us discover and develop new ways to treat, process and recycle precious metals even faster and more efficiently for our customers."





IPMI Welcomes New Sustaining Member

Recat GmbH
Sulzfeld, Germany



Where are They Now?

Reporting in is **Javier Grajeda**, 2017 Johnson Matthey Student Award Winner who says, "I completed my PhD in inorganic chemistry at UNC Chapel Hill last month and I've just started working at Eastman Chemical Co."

IPMI® Calendar

2018	Sept 13	6 th Annual IPMI Platinum Dinner • New York Palace Hotel, New York NY
	Nov 12-13	IPMI Europe Chapter Seminar • Budapest, Hungary
2019	Feb 5	SAC Meeting • Marriott Hotel, George Bush Airport, Houston, TX
	Feb 6	PRC Meeting • Marriott Hotel, George Bush Airport, Houston, TX