IPMI ©[®] PRECIOUS METALS NEWS

MARCH 2023 VOLUME 48 • ISSUE 03

IPMIQ: WEBSITE LAUNCHED

A Look at Some of the Key Sections and Features

Recap of the 2023 Winter Meeting

Another Successful Winter Meeting in Orlando

The Student Award Winners for 2023

PLUS:

A Look at the Upcoming 47th Annual Conference

June 10-13 The Phoenician Resort Scottsdale, Arizona

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Seminar

May 3 2023 New York, New York

Metro New York Chapter Spring

More Info

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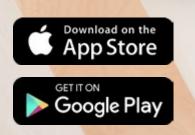
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We are excited to announce that IPMI has migrated to a new membership platform powered by Glue Up. Our goal is to enhance our communication with you and provide you with improved access to the valuable member benefits you've come to expect.

With this new platform, you can easily register for events, customize subscriptions, your and manage your membership online or through the IPMI mobile app.

Get the My Glue App and login into your **IPMI account, and join** the new IPMI community.



As we transition to the new IPMI website, we kindly ask for your patience and understanding. The migration may take time as we import all member information into the new portal. If you need assistance, you can find a how-to document that details the registration process with screenshots HERE. We're working diligently to ensure a smooth experience for all users.

If you encounter any issues or difficulties, we encourage you to try again later in the day. Should the problem persist, please don't hesitate to contact us at mail@ipmi.org. We're here to help and appreciate your support as we strive to enhance your online experience with IPMI.

Take the next step and register your account to embark on a refreshed IPMI experience. We look forward to connecting with you in this upgraded digital space!

47TH ANNUAL CONFERENCE

Conference Agenda

IPMI

Saturday June 10

7:00 AM IPMI Golf Tournament at the Phoenician Golf Club

- Shotgun Start

Golf Breakfast, Longest Drive and Closest to Pin - Sponsored by Auramet
Longest Drive Sponsored by CAC Specialty Natural Resources
Hole in One Sponsored by Hugh Wood
Golf Trophies Sponsored by Axium Scientific 8:00 AM - 5:00 PM **Registration Room Opens** Registration Room Sponsored by Heraeus

9:00 AM - 4:00 PM The Meeting Place ... an informal area to hold meetings Sponsored by Sims Lifecycle Services

3:30 - 5:00 PM Women of IPMI Sponsored by FideliTrade 5:00 - 6:00 PM Student Meet & Greet — by invitation only

6:00 - 8:00 PM Welcome Reception Sponsored by Johnson Matthey

8:00 - 10:30 PM Dueling Piano Bar

• Entertainment Sponsored by Dillon Gage

Open Bar Sponsored

- by RS Bruce
- Dessert Sponsored by Techemet

Sponsorships are Still Available

There are still some excellent sponsorship opportunities available for the biggest IPMI event of the year. These include golf sponsorships, spots for evening entertainment, coffee breaks, the awards banquet and the heavily trafficked phone charging and hand sanitizer stations.

In addition to the above acknowledgement and signage ALL SPONSORSHIPS will be listed in the Agenda as well as on the Conference Sponsor Board near the Registration Room. All sponsorships will be on the Conference App as well as the IPMI website.

To get more information, please contact Sandra at mail@ipmi.org



IPMI C

47TH ANNUAL CONFERENCE

Conference Agenda

Sunday, June 11

7:30 AM Continental Breakfast Sponsored by Hensel Recycling

7:30 AM - 3:00 PM **Registration** Registration Room Sponsored by Heraeus

8:00 AM - 4:00 PM Exhibit Booths

8:00 AM - 4:00 PM **The Meeting Place ... an informal area to hold meetings** Sponsored by Sims Lifecycle Services

Technical Sessions Sponsored by Reldon

Wi-Fi Sponsored by Metallix

8:30 - 10:00 AM Session A - World of PM Finance -Jonathan Butler, Moderator Presenters:

• Jonathan Butler, Mitsubishi -Demand - PGM Demand in a Changing Economic Landscape

• Wilma Swarts , Metals Focus- Supply - Implications of Tightening Margins on Miners and Recyclers Expansion Plans

Panelists:

David Holmes, Heraeus Grant Stewart, Sibanye Stillwater Wilma Swarts , Metals Focus- Supply Thierry Van Kerckhoven, Umicore 9:30 - 11:00 AM Spouse Brunch

10:00 - 10:15 AM Morning Break Sponsored by CIBC

10:15 - 11:30 AM Session B - Alternative Energy & Future Impact on PGM's Matt Watson, Moderator Presenters:

Stewart Brown, Johnson Matthey
PGM in the Hydrogen Economy, Addressing Availability Challenges
Matt Watson – Precious Metals Commodity Mgmt. LLC- Alternative Energy & Future Impact on PGM's
H2 Economy Panel: Stewart Brown, Johnson Matthey

Bodo Albrecht, BASF

11:30 - 1:30 PM Member's Meeting and IPMI Luncheon Sponsored by BASF

1:45 - 3:00 PM Session C - World of PM Finance -Gold & Silver Philip Newman, Moderator Presenters: • Rohit Savant, CPM Group - The Gold

Market Outlook • Bart Melek, TD Securities - Silver Has Game **H2 Economy Panel:**

All Presenters plus Steve Scacalossi, CIBC Keith Weiner, Monetary Metals 3:30 - 4:30 PM Young Professionals Social Sponsored by United Catalyst

2:00 - 4:00 PM **Spouse Event**

5:00 - 6:00 PM **Premier Member Social** — by invitation only

6:00 - 8:00 PM Tanaka/Metalor Reception

8:00 - 10:30 PM The IPMI Concert Event - Radio Gaga Tour: The Music and Spirit of Queen meets Lady Gaga Sponsors: Open Bar: PGM of Texas Dessert Sponsor: Loomis Entertainment Sponsors Platinum: KBI, Multimetco Gold: Colt Refining, Mitsubishi, Rand Refinery, Hugh Wood

Silver: Cotenca, United PMR

Additional Sponsorships Available

IPMI C

47TH ANNUAL CONFERENCE

Conference Agenda

Monday, June 12

7:30 AM Continental Breakfast Sponsored by PMR

7:30 AM - 2:00 PM **Registration** Registration Room Sponsored by Heraeus

8:00 AM - 4:00 PM Exhibit Booths

8:00 AM - 4:00 PM **The Meeting Place ... an informal area to hold meetings** Sponsored by Sims Lifecycle Services

Technical Sessions Sponsored by Reldon

Wi-Fi Sponsored by Metallix

8:30 - 9:45 AM Session D - Sustainability ESG

Jimmy Gavilan, Sam Sabin Moderators

Presenters:

John Mulligan, World Gold Council
Gold Industry Responsible and Sustainability Principles
Malcom Harris, Novisto - ESG Metrics and Reporting Platform
Nirali Shah, Responsible Gold -Digitization and Tokenization Gold Provenance Platform

Panelists:

Panelists will be all the presenters

9:45 - 10:00 AM AM Break Sponsored by PMR

10:00 - 11:15 AM

Session E - Responsible Sourcing Monica Mellas, Moderator

Presenters:

Neil Harby, LBMA - LBMA Responsible Sourcing
Jonathan Butler for LPPM -Accepting Responsibility – The LPPM's Programme and the PGM Supply Chain
Randy Weinerman, Mitsubishi - US

Corporate Transparency Act **Panelists**:

All Presenters plus Ruth Leland, Johnson Matthey Samantha McCourt, Metalor

11:15 - 12:30 PM Session F PGM & AutoCat Recycling and Refining Mark Caffarey, Moderator

Presenters:

Mohammed Doost, pH7 -Circular Economy for the Green Transition: An Overview of pH7 Technologies' Sustainable Process
Don Weatherbee, Regenx Tech

Corp. - The Future of Precious Metal Recovery – An iIntroduction to Regenx Panelists:

All Presenters plus David Carl, BASF Lee Hockey, Lee Hockey Consultancy

1:45 - 3:00 PM

Session G - Jewelry Zibi Milkiewicz, Moderator

Presenters:

• Gaetano Cavalleri, CIBJO - A Holistic Approach to Responsible Sourcing and Supply Chain Integrity in the Jewelry Industry

• Joe Cavatoni, World Gold Council

- Gold Demand for Jewelry -Past, Present Trends and Future
- Possibilities

• Elan Farbiarz, Italpreziosi - Sourcing the Jewelry Supply Chain Ethically: Today and Tomorrow

3:00 - 5:00 PM Afternoon Party Sponsored by Gannon and Scott

5:00 - 6:00 PM Happy Hour Sponsored by Bureau Veritas

6:00 - 8:00 PM Sabin Metal Corporation Reception

8:00 - 10:30 PM

One of These Nights - A Tribute Concert to the Music of The Eagles Sponsored by Mastermelt

IPMI C

47TH ANNUAL CONFERENCE

Conference Agenda

Tuesday, June 13

7:30 AM Continental Breakfast Sponsored by Brinks

7:30 AM - 12:00 PM Registration Registration Room Sponsored

Registration Room Sponsored by Heraeus

8:00 AM - 12:00 PM Exhibit Booths

8:00 AM - 12:00 PM **The Meeting Place ... an informal area to hold meetings** Sponsored by Sims Lifecycle Services

Technical Sessions Sponsored by Reldon

Wi-Fi Sponsored by Metallix

8:30 - 9:45 AM **Cybersecurity Workshop** Scott Schwartz, FideliTrade *Open to All*

9:45 - 10:00 AM AM Break Sponsorship is Available

10:00 - 11:15 AM SAC Workshop

Algis Naujokas, Sabin Metal and Stacey Santolli, BASF

Presenters: Jonathan Jodry, Metalor - A Deep Dive into Method Validation

Panelists: SAC Round Robin discussion and path forward - Algis Naujokas and Stacey Santolli Open to All

11:15 - 12:00 PM New Horizons

Federico Padrono Martini, IKOI **Presenters:**

Steve Izatt, IBC Advanced
 Technologies - Achieving Iridium
 Sustainability from Spent Secondary
 Sources
 Federico Padrono Martini, IKOI,

Moderator - Mechanical Operation for Producing Silver Bars: A More Sustainable Alternative • Laura Poli, Tera Automation - Gold and Silver Bar Production with T Barmaster High Vaccum • Calvin Rey, Precient Technologies -Membrane Biofilm Reaction • Ingo Wolf, Osmium Institute -International Expansion of Crystalline

Osmium Business Open to All 12:30 PM **Student Lunch** *— by invitation only* Sponsored by IPMI European Chapter

1:30 - 2:45 PM Student Presentations Part 1 Open to All

2:45 - 3:00 PM PM Break Sponsorship is Available

3:00 - 4:15 PM Student Presentations part 2 Open to All

6:00 - 7:00 PM **President's Reception** Sponsored by Umicore

7:00 - 9:00 PM **Awards Banquet** Wine Sponsored by QML *Entertainment Sponsorship is Available*

9:00 - 10:00 PM **Closing Dessert Reception** Sponsorship is Available

IPMI's 2023 Winter Meeting was held at the Hyatt Grand Cypress Resort in Orlando, Florida Feb 28-March 2. A record turnout of 215 delegates attended the three-day event featuring all day sessions devoted to Security and Anti-Money Laundering, PGM Refining and Sampling and Analytical. The first day was Security and Anti Money Laundering, organized by Monica Mellas of Materion and Randy Weinerman of Mitsubishi. Featured speakers were Peter Quinter of Gunster, Emmy Richardson of LBMA, Steve Contreras of PGM of Texas, Si-mon Codrington of Hugh Wood and Brian Hayward of Loomis. Topics on this day included AML Compliance, Auto Catalyst Theft and Supply Chain Risks. Panel discussions were also held on subjects: Efforts to Improve your KYC Program, AML and a new feature: Women of IPMI Committee. The Security and Anti Money Laundering Session was sponsored by Hugh Wood.

The next day was centered on PGM Refining and highlighted speakers Wilma Swarts of Metals Focus, John Bachelor of PGMP, Jonathan Butler of Mitsubishi, Logan McCain of BASF, Matt Watson of Precious Metals Commodity Management, The Akerman Group and Oliver Krestin of Hensel Recycling. Topics included: PGM Mining and Supply, Plasma Arc Furnace, Alternative Energy, PGM Demand, and Auto Catalyst Theft Lobby-ing. Panel Discussions on Sustainability and ESG, Alternative Energy and PGM Mining were also featured. Many thanks to the organizers of this Session, Jimmy Gavilan, Gavilan Commodities; Sam Sabin, Sabin Metal; Jonathan Butler, Mitsubishi; Mark Caffery, Umicore and Craig Ostroff of BASF. The session was sponsored by Hensel Recycling and PGM of Texas.

The third day was entirely focused on Sampling and Analytics. Sponsored by Sims Lifecycle Services, the featured speakers were Algis Naujokas of Sabin Metal, the session organizer and SAC Chair, Meredith Daniel-Prowse of Spectro Analytical, Craig Jones of Agilent, Madeline Gozzi of Inorganic Ventures, Eric Farrell of Milestone, James Han of Ledoux and Tim Zembryski of Sabin Metal. Topics on this session day included Instruments and Analysis Options, Methods for Wavelength Selection in the ICP Analysis of Precious Metals, ISO 17025, PCRM, Laser Ablation ICP-MS, Improving Accuracy in EcD-XRF for Quantification of Rh, Pd and PT in Auto Catalysts. At the end of the day IPMI President Zac Henneman of BASF led a deep dive panel discussion on sampling and analysis.

Delegates enjoyed two evening receptions sponsored by Sabin Metal Corporation and BASF.

The IPMI thanks all the sponsors, organizers, presenters and attendees for a successful and well attended 2023 Winter Meeting.

2023 IPMI WINTER MEETING



H



IBC Advanced Technologies, Inc.

www.ibcmrt.com

Advanced Technologies

Highly Selective Separations of Precious Metals

IBC Advanced Technologies, Inc. constructs and supplies engineered separation systems for customers worldwide. Founded in 1988 and headquartered in American Fork, Utah, IBC has pioneered the development and implementation of Molecular Recognition Technology™ (MRT[™]) as a greener, more efficient and more cost-effective means of separating and purifying precious metals. The high selectivity and efficiency of IBC's SuperLig® MRT[™] systems make them ideal for recovering and refining Platinum Group Metals (PGMs), gold and silver at high purities.

Advantages of MRT[™] Systems in PGM Refining

- Highly selective single-pass recoveries of 99%+
- Product purities of 99.95 99.99%
- Dramatic reduction of PGMs in the processing pipeline, thus reducing metal financing costs, and releasing metal earlier for sale
- Option to target specific, commercially important PGMs such as rhodium and palladium early in the flowsheet
- High loading and elution flow rates, online processing and efficient production
- Simple flowsheets that conserve equipment, chemicals, labor, space and time with recycling of process solutions and minimal waste
- Minimization of health, safety, security, and environmental risks by using a closed system and avoiding harsh chemicals and organic solvents
- Treatment of both dilute and concentrated feed streams
- Multi-cycle use of SuperLig® resins



SepraMet: Excellence in PGM Refining

IBC's wholly owned subsidiary, SepraMet, specializes in refining Iridium (Ir) for a sustainable, circular economy that preserves iridium as a critical resource. Iridium is a key component of the catalyst that produces hydrogen in membrane fuel cells. Iridium is one of the scarcest elements in the Earth's crust and it is the most effective catalyst known for producing hydrogen in fuel cells. The projected future growth of the hydrogen economy requires a reliable, adequate supply of iridium which is provided through efficient and cost-effective recycling by SepraMet.



SepraMet makes possible the recovery of low-grade PGM values from various spent sources including plating baths, catalysts, and electrodes. Using MRT[™], a circular economy in PGM recycling is achieved leading to sustainability and conservation of PGMs. Rather than installing an entire PGM refining plant, individual PGMs, present at a low concentration level, are recovered from solutions with a modular SuperLig® MRT[™] system at the generation site. Then, the loaded SuperLig[®] column is shipped to SepraMet where the PGM is eluted from the SuperLig® column and refined. The SuperLig® column is then returned to the generation site to be reloaded, thus completing the cycle. SepraMet refining eliminates the costs and waste treatment associated with alternative refining routes as well as the need to sell small amounts of PGMs on the market.



Catalytic Converter Recycling Leaders Unite to Combat Growing Theft Problem

The International Precious Metals Institute (IPMI) has announced the formation of the Preventing Auto Catalyst Theft (PACT) Committee, which aims to propose practical solutions for preventing catalytic converter theft and to promote public understanding about the importance of precious metals in the catalytic converter recycling industry.

The committee comprises industry leaders representing the processing, smelting, and refining of precious metals recovered from end-of-life catalytic converters. With committee members contributing their time, expertise, and financial resources to address this significant public concern, they hope to offer realistic solutions to combat catalytic converter theft while protecting legitimate recyclers contributing to the global supply of recycled critical minerals.

According to preliminary estimates from the National Insurance Crime Bureau, more than 130,000 catalytic converters were stolen in the U.S. last year, roughly double the number from 2021. The rise in precious metals prices has led to a 10-fold increase in catalytic converters thefts over the previous four years.

Catalytic converters contain three essential and valuable precious metals: platinum, palladium, and rhodium. These metals have been classified as critical minerals by the Secretary of the Interior and require federal involvement to ensure a reliable domestic supply chain within the United States. However, there needs to be uniformity in regulating interstate commerce of catalytic converter recycling, making it easier for state law enforcement to catch thieves and prosecute them without assistance from numerous departments and federal agencies. The catalytic converter recycling industry is increasingly threatened by catalytic converter theft. Industry experts collaborate to help law enforcement prosecute thieves and establish clear standards for legitimate recycling entities.

"The PACT Committee is dedicated to deterring catalytic converter theft by providing law enforcement with the necessary tools to catch and prosecute thieves," said an IPMI spokesperson. "They advocate for a clear nationally recognized standard for legitimate entities dealing in catalytic converter recycling. With their expertise, they hope to shape federal legislation that tackles ongoing issues while supporting legitimate recyclers' business continuity contributing to a global supply chain of recycled critical minerals."

About the IPMI

The International Precious Metals Institute (IPMI) is a global association of professionals in the precious metals industry. Founded in 1976, IPMI has over six hundred members worldwide representing every aspect of the precious metals supply chain, from mining and refining to fabrication, recycling, and investment. The organization promotes excellence through education, research, and networking opportunities that drive innovation and advance sustainable practices. If you want to learn more about IPMI or become a member, please visit our website at https://www.ipmi.org/.

Contact:

Larry Drummond Executive Director IPMI International Precious Metals Institute T. (732) 966-0966 Ijd@ipmi.org www.ipmi.org

metallix Thermal Reduction & the APR³

Metallix Refining's proprietary, technology allows us to optimize our process to enhance value for customers and suppliers.

Most burnable precious metal bearing materials are extremely valuable and sensitive to loss during the thermal reduction process. Meticulous engineering and customization of the furnaces is critical to optimizing outcomes and precious metal values.

Analyzing the physical characteristics, volatility and safety data of each lot, our internal review board draws up ideal atmospheric conditions designed to reduce precious metals loss, while increasing outcomes and control. These factors and more are why our Thermal Reduction department offers unmatched expertise in addition to the most advanced equipment in the market.

WATCH VIDEO

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IPMI Announces Student Award Winners 2023



The IPMI Ames Goldsmith Colonial Metals Student Award Recognizing Achievement in Precious Metals Research recipient is Carolin Wahl of Northwestern University. Her advisor, Vinayak Dravid, is the 2023 Student Advisor Award recipient.

Her research is focusing on accelerating the discovery of new functional nanomaterials using a platform termed nanomaterial megalibraries. A megalibrary consists of up to 106 unique nanomaterials that are spatially encoded on a single chip, which is synthesized using a parallel scanning probe lithography technique and can be screened for properties of interest. A major focus area is electrocatalysis due to its high commercial impact resulting from the extensive need for various noble metals.

She is developing a generalized lithography method for nanoparticle synthesis and compatible screening platforms that allows for the incorporation of up to 54 different metals into nanoparticles, which can be used for combinatorial materials discovery. For instance, this enables the high-throughput synthesis and screening of low-Pt and low-Ir nanomaterials for use in fuel cells and water electrolyzers, with the goal of enabling a widespread adoption of these technologies by maximizing the noble metal utilization in such devices.



The IPMI Student Award recipient is Li (Lee) Hao of Anhui University, China.

Lee's research centers on structures and properties investigation of the supercrystals of atomically precise metal nanoclusters.



Zengran Sun of Washington State University is the **IPMI Sabin Metal Ron Bleggi Student Award** recipient.

His research focuses on the design, synthesis, and characterization of novel nano-scale gold catalysts using a class of ionic liquids called Reversible Ionic Liquids (RevILs). RevILs can be formed via a reaction of silylamine molecular liquids with CO2, forming an ammonium-carbamate ion pair. Upon removal of CO2 (via sparging with inert gas or applying gentle heat), the ion pair can completely reverse into their molecular counterparts. RevILs can afford fine control over the particle size (3-4 nm diameter) during the nucleation and growth of gold nanoparticles. Additionally, they can maintain the particle size and assist in the preparation of gold nanoparticle catalysts with various topologies (e.g., porous vs. nonporous surfaces).



IPMI Gero Family Trust Bright Futures Award is awarded to Anna Brennen, MIT

Anna's research investigates heterogenous catalysts, specifically metal-zeolite systems, for the selective deconstruction and upcycling of polyolefin plastics.

IPMI Announces Student Award Winners 2023



Christopher Lamartina, Columbia University receives the IPMI Johnson Matthey Student Award

Chris Lamartina is a 4th year PhD Candidate who works in the lab of Tomislav Rovis at Columbia University. His research interests are at the interface of transition metal catalysis and artificial peptide synthesis. By merging these two fields, Chris and coworkers have developed a Rh(III)-catalyzed three-component diastereoselective cross-coupling reaction that effectively ligates two peptide chains together while simultaneously installing an unnatural amino acid at the junction point. The technology has been reported to work on a large substrate scope of linear peptides with a wide array of rare unnatural amino acids. Current research efforts are focused on applying the reaction to macrocyclic peptide synthesis, a structural motif that is pertinent to pharmaceutical drug discovery.



IPMI Metalor Technologies Graduate Student Award this year goes to Tongliang Zhou of Rutgers University

His work provides sterically-defined L-shaped ImPy (imidazo[1,5-a]pyridin-3-ylidene) technology platform for the development of new cross-coupling reactions and significant improvement of efficiency of the existing cross-coupling methods. Specifically, the work is focused on (A) development of novel sterically-defined L-shaped biaryl NHC ligands on imidazo[1,5-a]pyridine architecture and their structure-activity relationship (>30 ligands); (B) new routes for ligand synthesis by Ni-catalyzed Kumada cross-coupling and no chromatographic purification; (C) synthesis of well-defined, air- and moisture-stable complexes with transition-metals (>50 complexes); (D) application in transition-metal-catalyzed cross-coupling reactions, which include: (i) highly reactive Pd-NHCs for the Suzuki-Miyaura cross-coupling of nitroarenes; (ii) late-stage hydrazination of aryl halides; (iii) Pd-catalyzed Buchwald-Hartwig amination of unactivated aryl fluorides; (iv) Pd-catalyzed amination of thiophenols and sulfoxides; (v) Au-catalyzed reductive amination of alkynes with nitroarenes.



IPMI Colonial Metals George Benvegno Memorial Award recipient is

Zixiao Schuyler Shi of Cornell University

His study is centered on Durable and high-performance Proton Exchange Membrane Electrode Assembly through ZrO x decorated Pt nanoparticles. His research focuses on All-solution processed organic solar cells with Silver Nanowires as top electrode with high light utilization efficiency for buildingintegrated photovoltaics



The IPMI European Chapter Award recipient is Zhouran Qiao, Imperial College, London, UK

Zhouran's research is focused on solution processable silver nanowires.

OTANAKA

TANAKA Establishes New Overseas Subsidiary in Seoul, Korea

Establishing overseas subsidiary in Korea will invigorate transactions and expand business in the markets for fuel cell catalysts, power semiconductor materials, precursors, and precious metal recycling

TOKYO, Mar 16, 2023 - (JCN Newswire) - TANAKA Kikinzoku Kogyo K.K. (Head office: Chiyoda-ku, Tokyo; Representative Director & CEO: Koichiro Tanaka), which operates the TANAKA Precious Metals manufacturing business, announced that TANAKA Kikinzoku Korea Co., Ltd. was established in Seoul, Korea on November 10, 2022, as a new base for sales strategy in Korea and will start operating as a new company as of April 3, 2023.

Background of Establishment

In the past, because the base operated in Korea as a branch of TANAKA Kikinzoku Kogyo, a Japanese company, it was necessary to carry out transactions and sales with customers in Korea as a Japanese company. As



result, there were restrictions on transactions in Korea, such as limitations on projects that could be handled due to the inability to use the local currency.

Effects of Establishment

Through the establishment of this overseas subsidiary, it will be possible to conduct transactions with customers in Korea as a local company using the local currency (the Korean Republic won). This will allow the subsidiary to transact directly with customers in Korea, making transactions smoother and more vibrant, such as allowing delivery of products after completing import customs clearance. In addition, by being positioned as a branch of a Japanese company in the past, the base was not qualified to participate in tenders such as for projects from Korea's national policy research institutes and waste recovery for precious metal recycling. By establishing the base as a Korean company, it will be possible to bid in Korea for projects using plating equipment and various materials for national research as well as petrochemical catalyst waste recovery. As a result, it is expected that the scope of transactions in Korea will expand significantly.

By establishing the branch in Seoul, Korea, as an overseas subsidiary, TANAKA Kikinzoku Kogyo strives to carry out transactions in Korea more smoothly. At the same time, the company will meet the needs of local customers by further expanding the scope of products that can be offered. In addition, as a focus area after the establishment of the subsidiary, besides waste recovery and precious metal recycling centered on platinum, a new entry into the market for precursors will be sought, among other things, to further expand business in Korea.

OTANAKA

Overview of Subsidiary

- Company Name: TANAKA Kikinzoku Korea Co., Ltd.

- Officers: Yasutaka Ihara, Representative Director (part-time); Lee Jun Seok, Director (full-time); Toru Shoji, Director (part-time); Shigeyuki Kamiya, Director (part-time); Akihito Sato, Corporate Auditor (part-time)

- Location: #901 OPULENCE Bldg., 254, Seocho-Daero, Seocho-Gu, Seoul 06647 Korea

- Established: November 10, 2022
- Number of employees: 19 (including 4 expatriates)

- Activities: Imported sales and manufacturing of TANAKA's precious metal industrial products (materials and components); sales of plating solutions and provision of engineering services to customers; industrial/consumer waste recovery and collection

- Capital: 1 billion won (approximately 103 million yen)

- Shareholder: TANAKA Kikinzoku Kogyo K.K. (100%)

About TANAKA Precious Metals

Since its foundation in 1885, TANAKA Precious Metals has built a portfolio of products to support a diversified range of business uses focused on precious metals. TANAKA is a leader in Japan regarding the volumes of precious metals handled. Over the course of many years, TANAKA has not only manufactured and sold precious metal products for industry but also provided precious metals in such forms as jewelry and assets. As precious metals specialists, all Group companies in Japan and around the world collaborate and cooperate on manufacturing, sales, and technology development to offer a full range of products and services. With 5,225 employees, the Group's consolidated net sales for the fiscal year ending March 31, 2022, were 787.7 billion yen.*

*From the current consolidated fiscal year, the amounts of sales for some transactions are indicated as net values due to the application of the Accounting Standard for Revenue Recognition.

Global industrial business website

https://tanaka-preciousmetals.com/en/

Product inquiries

TANAKA Kikinzoku Kogyo K.K. https://tanaka-preciousmetals.com/en/inquiries-on-industrial-products/

Press inquiries

TANAKA Holdings Co., Ltd. <u>https://tanaka-preciousmetals.com/en/inquiries-for-media/</u>

This press release in PDF: <u>https://www.acnnewswire.com/docs/files/2023316_EN.pdf</u>

News URL:

https://www.acnnewswire.com/press-release/english/81930/

Metals Market News

Platinum Group Metals

Why Hydrogen is a New Demand Driver for Platinum

\$300 billion in H2 investments earmarked through 2030. 1 million FCEVs on China's roads by 2035. 1 in 8 new commercial vehicles globally will be powered by H2 fuel cells. Demand for hydrogen could rise 7x by 2050, with 2/3rds from electrolyzers FCEVs could add 3 Moz of Pt demand in 10 years

https://platinuminvestment.com/supply-and-demand/hydrogen-demand

Platinum seen at \$1500 by year-end amid South African power crisis - BofA

Platinum prices are expected to rise to \$1,500 an ounce by year-end, underpinned by the power crisis in South Africa as chronic electricity outages undermine one of the world's largest operators of mines, Bank of America said in an investors' note Wednesday. Power supply [is a] long-standing issue for South African miners," analysts at BofA Securities wrote in the note. The power situation in South Africa has gained attention as power cuts have become more frequent.

https://finance.yahoo.com/news/platinum-seen-1500-end-amid-130218204.html



In course of this year's London Platinum-Week we are looking forward to hosting our premier EC-IPMI Spring Reception.

For the first time, the Spring Reception will replace our traditional Wine Tasting for outstanding networking conditions with fellow members and industry professionals in a beautiful ambience.

Save the date for May 17th to join us at the Madison St Pauls at One New Change on their stunning terrace overlooking St Pauls. Reserve your spot here.

PLEASE UPON REGISTERING PROVIDE THE NAME OF THE ACTUAL ATTENDEE.

Metals Market News

Platinum Group Metals

Nornickel says it has teamed up with the scientific community to develop the first prototype of a palladium-based catalyst

The nanosized material is designed for membrane electrodenassemblies used in the electrolysis of hydrogen. Traditionally, platinum- and iridium-based catalysts have been used in the hydrogen energy market. However, the miner is exploring ways to improve catalyst efficiency through the partial replacement of these metals with palladium. Due to its strong chemical resistance, palladium has shown to be more efficient in catalysts than other metals in the palladium group.

https://www.ibtimes.com/worlds-biggest-palladium-supplier-explore-hydrogen-power-application-3678030

Platinum and palladium moving back to centre stage

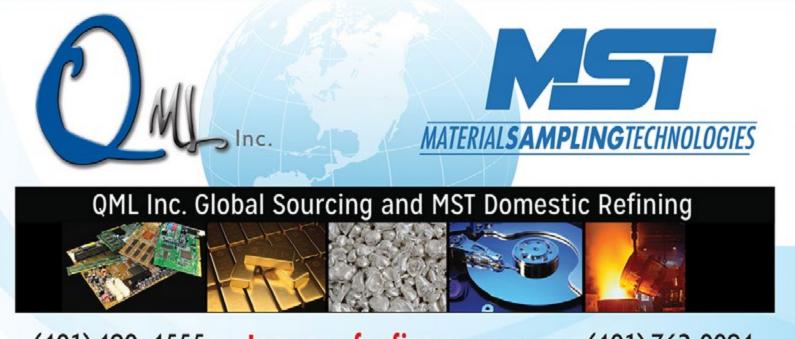
Platinum and palladium, two of the 'missing links' in Australia's world-class commodity chain, are moving back onto investors' radar screens as local projects make progress and threats to supply promise to deliver a price spike.

https://smallcaps.com.au/platinum-and-palladium-moving-back-to-centre-stage/

Surrey, B.C., drivers can now have vehicle IDs etched on catalytic converters as theft deterrent

Residents in Surrey, B.C., can now have their vehicle identification number (VIN) etched on a vehicle component to help prevent it from being sawed off and illicitly sold.

https://www.cbc.ca/news/canada/british-columbia/catalytic-converter-etching-theft-deterrent-surreyb-c-1.6798912



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Metals Market News

Fuel Cells/H2 Economy

China Launches Its First Hydrogen Fuel Cell Powered Vessel

China recently launched its first hydrogen-powered vessel which will be used as a demonstration of the technology and to support the development of the country's fuel cell programs. The vessel, named Three Gorges Hydrogen Boat 1, will operate in the inland area around the Three Gorges dam and follows China's largest electric vessel which was also launched last year for operations in the same region as a demonstration vessel.

https://maritime-executive.com/article/china-launches-its-first-hydrogen-fuel-cell-powered-vessel

Researchers synthesize a highly graphitized carbon support to improve the lifespan of hydrogen fuel cells

The research team led by Professor Jong-Sung Yu of the Department of Energy Science and Engineering at DGIST has developed a low-temperature method to synthesize a highly graphitized carbon support that will greatly improve the lifespan of hydrogen fuel cells. They expect that the results of this study will increase the possibility of commercialization for use in fuel cells for vehicles, batteries for water electrolysis and drones.

https://techxplore.com/news/2023-03-highly-graphitized-carbon-lifespan-hydrogen.html

Hartzell propeller drives green fuel technology

When Universal Hydrogen's De Havilland Dash 8 hydrogen fuel cell-powered testbed first flew earlier this month, its powertrain included a propeller designed and tested for the experimental aircraft by Hartzell Propeller.

https://aviationsourcenews.com/manufacturer/hartzell-propeller-drives-green-fuel-technology/



ANNUAL CONFERENCE

The European Chapter of the IPMI will be hosting another annual conference this year in Vienna, Austria. The dates will be 12-14th November, 2023.

Further details will follow on the exact location and program soon.



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Metals Market News

Silver

New global solar capacity additions hit 191 GW in 2022, says IRENA

IRENA says developers installed 295 GW of renewable energy throughout the world in 2022, driving up global cumulative installed capacity by 9.6% to 1,053 GW. It was a year of record growth, largely based on newly installed PV systems, according to IRENA. Analyst: This equates to ever 142Moz of silver demand in 2022 for Solar PV.

https://www.pv-magazine.com/2023/03/22/new-global-solar-capacity-additions-hit-191-gw-in-2022-says-irena/

Silver Price Forecast: XAG/USD hits new monthly highs above \$24.00, driven by falling US bond yields

Silver price trades at new monthly highs above \$24.00 a troy ounce, sponsored by falling US Treasury bond yields. Sentiment continues to be the main driver in the session, with US equities set to finish the month with gains. At the time of writing, the XAG/USD is trading at \$24.10, gaining 0.89%.

https://www.fxstreet.com/news/silver-price-forecast-xag-usd-hits-new-monthly-highs-above-2400-driven-by-falling-us-bond-yields-202303311658

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Metals Market News

Precious Metals Mining

Sibanye-Stillwater US PGM output hit with new setback following shaft accident

The group announced that damage sustained to shaft infrastructure from a non-fatal accident at the Montana-based mine would result in less production of between 25,000 to 30,000 2E ounces this year.

https://www.miningmx.com/top-story/52793-sibanye-stillwater-us-pgm-output-hit-with-new-setback-following-shaft-accident/

Amplats says uptick in loadshedding jeopardizes PGM output guidance by 5%

Eskom, the state-owned power utility, has increased loadshedding to some 6,000MW leaving customers without power for up to four-and-a-half hours. For energy intensive users such as Amplats this is about 100MW in power curtailments. Natascha Viljoen, CEO of Amplats said in a media call today that it looked "likely" an average of 200MW in curtailments per week would be applied to the group for the first six months of this year.

https://www.miningmx.com/news/platinum/52502-amplats-says-uptick-in-loadshedding-jeopardizes-pgm-output-guidance-by-5/

Silver price above \$24 to close out strong month for precious metals

Precious metals performed strongly in March supported by falling interest rate expectations, a weakening US dollar, safe-haven status in the wake of the Silicon Valley Bank crisis, and strong demand from China.

https://www.proactiveinvestors.com/companies/news/1010938/silver-price-above-24-to-close-out-strong-month-for-preciousmetals-1010938.html



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Metals Market News

E-Waste & Precious Metals Recycle Related

Royal Mint recovers gold from electronic waste

Rockwell Automation is working with The Royal Mint to design, build and commission a facility to safely recover precious and valuable metals from electronic products.

https://www.themanufacturer.com/articles/my-precious-royal-mint-uses-patented-chemistry-from-rockwell-automation-to-recovergold-from-electronic-waste/

E-waste: chemical processing without heat may offer efficient method of recovering metals from end-of-life products

Over 53 million tonnes (Mt) of e-waste was generated in 2019, predicted to grow to 74 Mt in 2030. Meanwhile, new electronics include about 8% of all gold produced each year – about 250 tonnes. Current methods of recovering gold and other metals from e-waste tend to use large amounts of energy, but researchers have proposed a new chemical-processing system that can be carried out at ambient temperature and pressure.

https://environment.ec.europa.eu/news/e-waste-chemical-processing-without-heat-may-offer-efficient-method-recovering-metalsend-life-2022-10-12_en

How recycling can help the climate and other facts

The precious metals in your pocket, how composting can help the climate and whether you should wash your recycling or not.

https://www.bbc.com/future/article/20230317-how-recycling-can-help-the-climate-and-other-facts

G-7 eyes joint effort to turn e-waste into rare earths, other metals

Group of Seven major economies are bolstering cooperation on urban mining, a process that turns electronic waste into a source of rare-earth elements and other industrially important rare metals as they seek to reduce dependence on major producers like China.

https://asia.nikkei.com/Business/Materials/G-7-eyes-joint-effort-to-turn-e-waste-into-rare-earths-other-metals

The Metro New York Chapter of the IPMI will be hosting their Spring Seminar on Wednesday, May 3rd 2023.

Be sure and mark your calendars. There is no better way to keep your fingers on the pulse of the industry.

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DATE

Details on the event will be coming soon. Stay tuned!

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Metals Market News

Gold News

Gold rush still on for 2023, precious metals outperforming market last 6 months

Despite ongoing market volatility and a sluggish start to 2023, the price of gold and silver continues to outperform on Wall Street while maintaining an upward trend towards historic highs. Jonathan Rose, CEO of Genesis Gold Group, said, "Both gold and silver added 15% to 20% over the last six months, while the overall market was in the range of 2% to 4% growth.

https://www.msn.com/en-us/money/markets/gold-rush-still-on-for-2023-precious-metals-outperforming-market-last-6months/ar-AA18U4YI

Gold firms while traders brace for U.S. Fed move

Gold gained on Wednesday as Treasury yields and the dollar slipped, while traders positioned for the U.S. Federal Reserve's interest rate announcement and Chair Jerome Powell's comments on monetary policy.

https://www.reuters.com/markets/commodities/gold-listless-investors-strap-fed-rate-verdict-2023-03-22/

Gold bound for quarterly gain on bets for less aggressive Fed

Gold prices were on track for a second straight quarterly rise on Friday as growing bets that the U.S. Federal Reserve will slow the pace of interest rate hikes drew investors to the metal.

https://www.cnbc.com/2023/03/31/gold-set-for-best-month-since-july-2020-on-banking-turbulence.html



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Metals Market News

Semiconductor Related Articles (impacting Precious Metals electronics):

Chip equipment maker ASML's suppliers eye Asia plants outside China amid tensions

Suppliers to Dutch chip-making machines giant ASML Holding NV are considering building plants in Southeast Asia instead of China amid political tensions between Beijing and the West, according to two sources and documents seen by Reuters.

https://www.taipeitimes.com/News/biz/archives/2023/02/11/2003794127

Tesla's plan to slash its use of rare-earth metals in future vehicle production sends semiconductor stocks tumbling

Tesla's recent investor day revealed plans for the company to significantly reduce its use of rare earth metals in its next generation vehicles, and that's dragging down a lot of stocks related to the sector.

Tesla said its next-gen powertrain will use a permanent magnet motor that will reduce its use of silicon carbide by 75%, enabling it to scale its vehicle production more efficiently.

https://finance.yahoo.com/news/teslas-plan-slash-rare-earth-180156719.html

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IPMI \$\$[®] Upcoming Events











NY Chapter Spring Seminar Wednesday, May 3, 2023

New York City, New York

New England Chapter Jewelry Awards May 2023

TBD

IPMI 47th Conference Saturday, June 10, 2023

Scottsdale, Arizona

More Information >

NY Chapter Fall Seminar Wednesday, September 13, 2023

New York City, New York

IPMI 10th Annual Platinum Dinner September 14, 2023

Intercontinental Barclay, NYC

IPMI ©[®] Upcoming Events

May 17 ... IPMI European Chapter Spring Reception • London, UK

Fall 2023 ... IPMI EHS Seminar • TBD

Oct 2023 ... IPMI SAC Symposium III - Colorado School of Mines • Golden, Colorado

Oct 2023 ... IPMI New England Chapter Fall Networking Dinner • Warwick, RI

Nov 12-14, 2023 ... IPMI European Chapter Seminar