

Precious Metals News

connecting you to the world of precious metals™

Volume 45, Number 11

November 2021







Annual Legislative and Public Affairs Conference

An insider's look at global issues facing our industry.



February 8-9, 2022

The Army-Navy Club

901 17th Street, NW Washington, DC 20006 (202) 628-8400 https://www.armynavyclub.org/

Room Rate: \$295

Room Block expires on January 4, 2022

Registration: \$425 (members)

\$525 (non-members)

Tuesday, February 8

1:00 - 5:00 pm The Future of Precious Metals & Critical Minerals

Biden Administration and Congress Impact

Privacy and Cybersecurity

5:00 - 6:00 pm Cocktail Reception

6:00 pm Seafood Buffet

Wednesday, February 9

8:00 - 9:00 am Continental Breakfast

9:00 - 1:00 pm Auto catalyst Theft Crisis and

Regulatory Developments

Trade Priorities

Banking and Market Regulations

1:00 pm Lunch

The Palladium Challenge

Presented by the IPMI Educational and Scientific Foundation and Sponsored and Promoted by Nornickel



Palladium is one of the Platinum Group Metals (PGMs), known for its catalytic capabilities and valuable properties. It is widely utilized in the automotive industry as an essential part of catalytic converters. Palladium is also used in: chemical and petrochemical catalysts; electronic devices production (especially MLCC's and connectors); as well as dental restoration and jewelry.

Nornickel is the global leader in palladium production. As the largest palladium producer, Nornickel feels responsible for developing the palladium market and promoting metal use in new areas. That is why Nornickel would like to encourage professionals worldwide to take a more detailed look at palladium and its potential applications in their research areas. In order to do that, Metal Trade Overseas SA, affiliate of Nornickel, in collaboration with IPMI, launches the "The Palladium Challenge", is an award granted to individuals and institutions who come up with the most promising technological solutions that may generate substantial demand for palladium.

Areas of Research

Projects from any field of science and technology can participate in the competition. However, palladium applications in the hydrogen economy (including hydrogen storage and cleaning films, catalysts for electrolyzers and fuel cells, and hydrogen sensors), battery technologies (with palladium as a battery energy density booster), sensors, industrial catalysts or alloys are seen as the most promising areas of the research.

Who Can Participate

Participation in The Palladium Challenge is not restricted. All laboratories, universities, individual scientists, engineers, and entrepreneurs with a great idea are encouraged to participate.

The Palladium Challenge Criteria

The winner(s) will be determined by a panel of renowned experts in science and technology and the PGM market. The panel's decision will be based on the following key criteria:

- 1. The scientific novelty of the proposed project
- 2. Economic feasibility and sustainability of the project
- Minimum annual palladium demand in thousands of troy ounces generated by the proposed application

Intellectual Property Rights

Subject to the Official Rules of the Palladium Challenge, participants retain any intellectual property, if any, in the submissions and assume all responsibility for any protection thereof. IPMI assumes no responsibility or liability whatsoever for any publication, use or dissemination of any submissions in connection with the Palladium Challenge.

Participant Registration and Official Rules

Participation in the Palladium Challenge is subject to the Official Rules and Participant's agreement to be bound by the terms thereof.

IPMI Disclaimer

IPMI is committed to serving its members and supports education and the sustainable and environmentally responsible expansion of the use of the precious metals in all applications. Subject to the terms of the Official Rules, IPMI makes no representations or warranties regarding the results of the Palladium Challenge and shall remain free and clear of any liability in connection therewith.

The Palladium Challenge Awards

1st place - US\$200,000

2nd place - US\$100,000

3rd place - US\$50,000

Winners to be selected by September 2022

Register

To register, click on the palladium element symbol below. Your completed proposal must be submitted to IPMI by May 31, 2022.

Click Here to Register

PALLADIUM

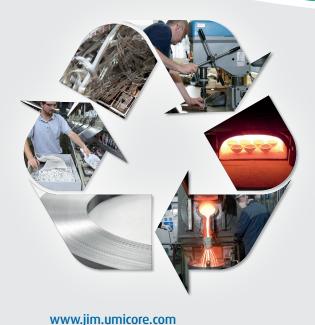
Pd

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Nornickel retains the right to make changes to the awards and/or decline to grant any specific award In the event the Panel finds that no submission meets the contest criteria.







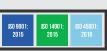
www.umicorepreciousmetals.com

The Cycle of Precious Metals

Umicore Jewelry & Industrial Metals offers a closed loop concept for precious metal products and refining.

Operating worldwide, we combine commercial success with social responsibility and a commitment to environmental protection.





CERTIFIED

Umicore Precious Metals USA Inc.

300 Wampanoag Trail Riverside, RI 02915 USA Toll free phone: 1-877-795-5060 Toll free fax: 1-877-455-0651 Email: usa-salesweb@am.umicore.com

Umicore Precious Metals Canada Inc.

451 Denison Street

Markham, ON L3R 1B7 CANADA

Toll free phone: 1-800-263-1669

Toll free fax: 1-800-827-4779

Email: canada-salesweb@am.umicore.com

NEW DATES



INTERNATIONAL PRECIOUS METALS INSTITUTE®

REGISTRATION OPEN

 $\boldsymbol{connecting}$ you to the world of precious metals $^{\scriptscriptstyle{1\!\!M}}$

IPMI Winter Meetings

March 1 - 3, 2022

Hyatt Grand Cypress Resort - Orlando



Auto Catalyst Seminar hosted by PGMRC - March 2

Sampling & Analytical - March 3

Registration Now Open!

Members: 1 day - \$425 2 days - \$650 3 days - \$800 Non Members: 1 day - \$525 2 days - \$750 3 days - \$900

Women in Precious Metals

Ruth Leland

Currently Sales and Marketing Director for EMEA at Johnson Matthey, Ruth Leland is responsible for Refining, Chemical Products and Industrial Products in the Platinum Group Metals Services part of the business. A core element of her role involves understanding the full metal flow from product supply to product recycling, and with a greater drive towards sustainability, the value proposition is becoming more about the full circularity package than any single part of the offer.

Prior to joining Johnson Matthey five years ago, Ruth held the role of Refrigerants Business Manager at BOC, where she worked for 13 years holding a range of strategic roles in sales and customer management. An advocate for gender diversity in the precious metals industry, Ruth has been a member of the Women in PGM Network since its inception in 2019.

Outside of work, Ruth is a keen polo player and loves nothing more than spending time with friends, family and her two dogs.







Full Range Of Recycling And Metal Trading

Recycling catalytic converters for the recovery of Platinum, Palladium, Rhodium







Alex Stewart International provides independent, ISO accredited analytical and inspection services to the global precious metals industry.

SUPERVISION SERVICES

We attend at precious metal refineries and processing facilities worldwide to supervise weighing, melting and sampling operations.

EXPERT REFINERY ASSESSMENTS AND MONITORING

Alex Stewart International assess refiner compliance to various empanelment and good delivery criteria. We are an approved/accredited supervisor for LBMA, LPPM and DMCC Good Delivery refinery monitoring.

BULLION VAULT AUDITS & INVENTORY CHECKS

We provide Gold/Silver/PGM bar auditing and inventory services at bullion vaults worldwide.

ANALYTICAL SERVICES

We analyse all precious metal bearing materials, including Bullion, Dore, Concentrates, Scrap, PGMs, Catalysts, Sweeps and Slimes/Sludges/Residues. Alex Stewart International is approved by CME Group as an assayer for all COMEX and NYMEX metals products.

For worldwide inspection and analysis enquiries, please contact our UK Head Office:

Mr. Rob SmithE-mail: rob.smith@alexstewartinternational.comMr. Andy SmithE-mail: andy.smith@alexstewartinternational.com

For further details on our full range of services please visit: www.alexstewartinternational.com





Sponsored by the

International Precious Metals Educational and Scientific Foundation

in collaboration with



CPM Group

Thursday, April 7, 2022

NY Events • 4 West 43rd Street • New York, NY 10036

A One-day Round Table Seminar and Discussion about the Future of Gold

Supply • Fabrication Demand • Investment Demand Official Transactions • Market Structures • Prices

Moderated Panel Discussions

- The Future of Gold Mine Production and Total Supply
- The Future of Gold Fabrication Demand
- The Future of Gold Prices (Lunch Panel)
- The Future of Gold Investment Demand
- The Future of Gold Markets: Trends and Conditions

IPMI ** INTERNATIONAL PRECIOUS METALS INSTITUTE**

connecting you to the world of precious metals™

Registration:

\$375 (members) • **\$475** (non-members)

Gold Sponsor: \$2000

General Sponsor: \$1000

Contact: Sandra Arrants at mail@ipmi.org

Larry Drummond, IPMI (732) 966-0966 • Ijd@ipmi.org

Jeffrey M. Christian, CPM Group LLC (917) 865-1615 • jchristian@cpmgroup.com

International Precious Metals Institute Educational and Scientific Foundation, Inc. Student Awards



Background

The IPMI Foundation is the charitable, scientific and educational affiliate of the International Precious Metals Institute (IPMI). One of the foundation's primary purposes is its Student Awards Program. Each year at its Annual Meeting, the Foundation awards up to \$100,000 in grants, internships, and cash awards to students, professors, and student advisors from around the world.

Scholarships to research focusing on precious metals include:

- IPMI Student Awards
 Up to 3 IPMI-sponsored Student Awards in the amount of US\$ 5,000 to US\$ 15,000 each and US\$ 5,000 for one of the student advisors.
- IPMI Corporate Student Awards
 Several corporate-sponsored Student Awards in the amount of US\$ 5,000 each sponsored by some of the most prestigious companies in the precious metals industry.

Eligibility

Students applying for an IPMI Student Award have to be enrolled in an academic training program (masters, Ph. D., postdoctoral research) performing fundamental or applied research focusing on any precious metal (Au, Ag, Pt, Pd, Ir, Rh or Ru), be it on the scientific side (catalysis, material, mining, refining, etc.) or on the commercial side (finance, marketing, etc.). Their expected graduation date must not be within the same year in which the award is received (e.g. an award winner of 2022 may not graduate before 2023).







IPMI Foundation Student Awards, continued from page 8

Documents

The following application documents are required:

- Student CV (resume);
- Executive Summary of the research (maximum half-page), indicating the program the student is enrolled in, as well as the expected end-date of the program;
- Short research plan (maximum 2 pages) detailing research performed so far with results, as well as planned projects during the remaining time of the education program;
- Nomination/recommendation letter (maximum 1 page) from the supervising professor.

Students are welcome to add any other document they deem pertinent to their application (e.g. published papers, extended research details, academic grades, etc.).

Please submit one single pdf file containing all documents; the file name should be as follows: "student_last_name student_first_name - academic institution with country" (for example: Smith John - Columbia University USA).

Please mail the pdf application to: mail@ipmi.org

Student Award Winners

The student award winners are asked to attend IPMI's Annual Conference at the Hyatt Grand Cypress in Orlando (FL, USA) in June 2022, present their work in the Student Research Session and join all the conference professional and social events. They will have many opportunities to meet and interact with people from the precious metal industry.

Students joining the conference will be reimbursed for their travel expenses by the IPMI Foundation (economy flights, to be purchased at the lowest available rate). Conference registration (including meals) and hotel reservation will be made by the IPMI Foundation.

Timeframe

Date	Action
20 January 2022	Deadline for submitting application
ca. 31 March 2022	Award winners will be notified
11-14 June 2022	Conference in Orlando, FL

Contact

For questions or for additional information, please contact: mail@ipmi.org





Precious Metals Market News

Gold

- Gold on the back foot as markets await central banks' inflation response
 - Dollar dips from 16-month highs as rally takes a pause
 - Gold could trade in \$1,850-\$1,875 range in near term-analyst

https://www.reuters.com/article/global-precious-idUSL4N2S92K9

Gold jewelry market in the US beats expectations in 2021, hitting a 12-year high

Some see the return of overseas holidays and family trips to the theatre, and higher inflation as meaning a quieter year. However,
others think high savings, a fuller emergence from the pandemic and an ongoing love of gold jewelry as sufficient to mean another
bumper year," Metals Focus concluded.

ttps://www.kitco.com/news/2021-11-19/Gold-jewelry-market-in-the-US-beats-expectations-in-2021-hitting-a-12-year-high.html

Silver

- Global solar installations to grow 20% in 2022
 - Global solar photovoltaic (PV) installations will see over 20% growth in 2022 and surpass the 200GW (DC) barrier for the first time, at a total investment of at least \$170bn, according to a new report. IHS Markit's study predicts solar PV installations to experience double-digit growth in 2021. Continued growth through 2022 would mark the second year in a row to experience double-digit growth of global installations in a high-price environment, the report highlighted.
 - Analyst: IHS forecasting > 160 GW on 2021 and > 200 GW new installations in 2022. That's 136Moz and 156Moz of demand respectively, or 14% of the supply growing to 16% of the silver supply.

https://renews.biz/73660/global-solar-installations-to-grow-20-in-2022/



Precious Metals Market News, continued from page 10

- Industrial Demand for Silver Rebounding to a New High in 2021
 - With each significant component of silver demand forecast to rise in 2021, global silver demand is set to reach 1.29 billion ounces, the first time it has exceeded 1 billion ounces since 2015.
 - The recovery in silver industrial demand from the pandemic will see this segment achieve a new high of 524 million ounces (Moz). In terms of some of the key segments, we estimate that photovoltaic demand will rise by 13% to over 110 Moz, a new high and highlighting silver's key role in the green economy. This will also underpin much of the forecast 10% gain in electrical/electronic offtake. Finally, brazing alloy & solder demand is set to improve by 10% in 2021, helped by a recovery in housing and construction, although this will still fall short of pre-pandemic levels.

https://www.globenewswire.com/news-release/2021/11/17/2336647/0/en/Industrial-Demand-for-Silver-Rebounding-to-a-New-High-in-2021.html

Platinum

- Platinum market heading for biggest surplus in years, WPIC says
 - The World Platinum Investment Council said on Wednesday the global platinum market would see a much larger surplus this year than it previously forecast and another big oversupply in 2022.
 - Platinum is used by automakers to neutralise harmful engine emissions and by jewellers, industries such as glassmakers and for investment. Surpluses imply lower prices and deficits higher prices.

https://www.reuters.com/markets/us/platinum-market-heading-biggest-surplus-years-wpic-says-2021-11-24/





Responsibly transforming raw materials into value to provide metals for an innovative world.



Precious Metals Market News, continued from page 11

China's Mystery Platinum Imports 'Help Absorb' Record Surplus

• Platinum imports into China have however "run well ahead" of the world No.2 economy's domestic demand for platinum, the Council's latest report goes on, "potentially absorbing much of the excess metal supply and resulting in reduced metal availability in the market."

https://www.bullionvault.com/gold-news/platinum-supply-demand-112820211

Palladium

- (China) Used light-vehicle sales lose steam amid virus resurgence
 - China's used light-vehicle sales rose less than one percent to below 1.16 million in October after double-digit growth in the
 first nine months, according to the China Automobile Dealers Association. The sudden market slowdown was mainly caused
 by lockdowns in multiple cities in northwest and northeast China, triggered by resurging coronavirus infections, the trade group
 said last week.
 - In October, deliveries of used crossovers and SUVs surged 25% to some 173,500 https://www.autonews.com/china/china-used-light-vehicle-sales-lose-steam-amid-virus-resurgence



metallix

REFINING REDEFINED

Our global logistics & supply chain infrastructure

As 2021 draws to a close, we reflect on a year in which all industries have experienced their share of problems, from Covid-19 restrictions, to global shortages and even long delays caused by a ship wedged in the Suez canal.

The incredible dedication of our employees, partners and suppliers worldwide, made it possible for us to maintain all our operational activities, despite that incredibly challenging context. Our supply chain and deliveries to customers have been uninterrupted, thanks to the strength and resilience of our people and operations. With this in mind, we'd like to take a moment to focus on the work of our Global Logistics team.

VITAL INFRASTRUCTURE

We understand that scheduling the transportation of your precious metal bearing material to our recycling facilities is a task that takes valuable time and resources away from your busy day. Contacting carriers, creating labels, generating manifests and understanding waste codes can be a full-time job in itself. That's why we take all work away from you, allowing you to focus on your job.

Our dedicated team of logistics and transportation experts provide a vital infrastructure that our clients know they can rely on. Their service includes:

- Scheduling your pickup according to your needs and availability.
- Completing & sending all required documents including land ban, hazardous waste manifest and customs paperwork.
- Completing & sending prefilled DOT shipping labels and hazardous waste placards.



INTRODUCING THE TEAM

We're confident that you'll experience exceptional customer service from the moment you engage with our team, to the moment your pick-up or delivery is completed. Our team are true professionals and nothing is ever too much trouble. The designated account management service provided by our logistics management team ensures smooth and efficient results.

Logistics is managed across two Metallix sites
- Greenville, North Carolina refinery and our
Shrewsbury, New Jersey corporate office. The
Metallix fleet of vehicles is managed by our
Logistics Department based at the precious
metals refinery in North Carolina.

Headed by Corey Coltrain, Inventory Control & Logistics Manager, the department works closely with Yamilet Machado, our Global Logistics Specialist and Susan Van Valkenburg, our North American Logistics Manager.

Both Susan and Yamilet are key members of our team, maintaining an open dialog with all Metallix suppliers, providing shipping dates, times and ensuring all documentation is in place to ensure the efficient and expedient movement of precious metal bearing materials.

BEYOND BORDERS

Our ability to safely transport your precious metal bearing material to our facilities goes beyond borders. We transport hazardous and non-hazardous material from around the globe, including Central and South America, Canada, Europe and Southeast Asia.

We provide transboundary movement contracts partnered with the world's most reliable and secure logistics companies to quickly and efficiently transport material to our recycling facilities. Our audited and approved freight forwarding service providers support us in the shipment of precious metals bearing scrap materials, helping our customers to realize valuable revenue and achieve a program of sustainability.

THE METALLIX FLEET

We also have a modern, state of the art fleet of Metallix owned and operated trucks, driven by our team of dedicated professionals. Our trucks are licensed and placarded to safely transport material in the Northeast and Southeast states for both hazardous and non-hazardous waste.

In addition, we have monthly, scheduled West Coast & Midwest hazardous waste "milk runs" that transport manifested waste such as reactive/cyanide solutions & solids, flammable and/or toxic solids. Our approved hazardous waste transporters all follow RCRA & DOT guidelines. We also schedule quarterly haz runs compatible for corrosive/acid liquids & solids.



CONTACT US TO DISCUSS YOUR REQUIREMENTS

To learn more about our Global Logistics services and how they can benefit your organization, please contact one of our <u>Precious Metal Buyers.</u>

+1 - 800-327-7938 +1 - 732-945-4132

metallix.com sales@metallix.com



FLEET TRACKING

Fleet tracking helps us to maximise effectiveness and efficiency across our operations. Geotab is a secure, web-based analytics fleet tracking system used by Metallix. Customised for our unique business platform, Geotab processes billions of data points per day and leverages data analytics and machine learning to monitor vehicle location, fuel usage and driver behaviour.

24/7 GPS

Our 24/7 GPS system carries out live fleet tracking, providing a record of every journey from start to finish. It details idling times, exact routes taken and the speed of the vehicle at each waypoint. Our system is programed to highlight prohibited zones (tunnels, residential areas, bridges etc.) and alert our drivers to specific information they may require for their route.

VEHICLE & CONSIGNMENT SURVEILLANCE

Each Metallix vehicle is installed with the Rosco surveillance system, capturing high-quality camera footage, including forward-facing, rear-facing and within the trailer, night and day and in all weather conditions. This helps our drivers, logistics & security teams operate in a safe, secure, efficient, and socially responsible way. It also provides the logistics management team with instant access to uploaded data following a collision, near miss or suboptimal driving event.

ELD (ELECTRONIC LOG-IN DEVICE)

Our Electronic Log-in Device (ELD) logs the hours of service for each vehicle, in compliance with Federal Department of Transport requirements. Manual backup systems are also available on all vehicles.

LOAD RESTRAINTS & CAPABILITIES

Maintaining the integrity of our consignments whilst in transit is of paramount importance. Our vehicles are fitted with restraining rails to ensure that all drums and mobile equipment remain completely secure at all times.

Metallix vehicles are also fitted with hydraulic tailgate lifts for ease of loading. They are designed to withstand the weight of a forklift, enabling consignments to be loaded directly within the trailer. However, all vehicles carry pallet jacks, spill kits and other essential items as standard.

INSURANCE

At Metallix, we put safety and security first. As you would expect, we hold comprehensive insurance to safeguard all our shipments and personnel.

Precious Metals Market News, continued from page 13

Ruthenium & Iridium

Chemists Discover New Way To Harness Energy From Ammonia by Replacing Carbon Fuel With Nitrogen

- Adding ammonia to a metal catalyst containing ruthenium created nitrogen spontaneously, implying that no additional energy
 was required. Instead, with protons and nitrogen gas as byproducts, this process can be used to generate energy. Furthermore,
 the metal complex may be recycled and reused by exposing it to oxygen, which is a far cleaner method than using carbonbased fuels.
- "We discovered that we are not only producing nitrogen, but we are doing so under entirely unprecedented conditions," says Berry, who is the Lester McNall Professor of Chemistry and focuses his research on transition metal chemistry. "It's a fairly huge deal to be able to finish the ammonia-to-nitrogen conversion under ambient settings and receive energy."

https://en.brinkwire.com/science/chemists-discover-new-way-to-harness-energy-from-ammonia-by-replacing-carbon-fuel-with-nitrogen/

Researchers find new class of catalysts producing ammonia under mild conditions

- Today's Haber-Bosch and the other processes involved in industrial-scale production require high temperatures (more than 400°C) and high pressure (more than 150 bar). Those conditions are needed to break the strong bonds in nitrogen and react with hydrogen to form ammonia (NH3).
- Their process allows them to synthesize ammonia at temperatures as low as 300 °C (573 K) and at pressures as low as 1 bar. Practical application of these catalysts shows promise concerning small-scale production of ammonia based on renewable energy.

https://www.greencarcongress.com/2021/11/20211123-vegge.html

Precious Metals Mining

Froneman tells world of Sibanye's confidence in hydrogen economy

- Speaking at SFA Oxford's green metals and hydrogen presentation covered by Mining Weekly, Froneman emphasised that the Johannesburg- and New York-listed Sibanye was going all out to fully understand the implications of:
- platinum performing its effective catalyst role in proton electrode membrane (PEM) electrolysers and PEM fuel cells;
- Iridium enabling the production of green hydrogen though electrolysers; and
- Ruthenium twinning with platinum, also in PEM fuel cells.
- The unmatched chemical and physical properties of PGMs make them extremely difficult to substitute, a slide projected on to screens emphasised.

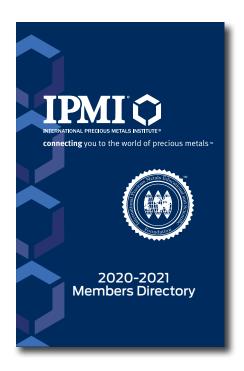
https://www.urdupoint.com/en/world/russian-mining-giant-slashes-nickel-output-by-1380691.html

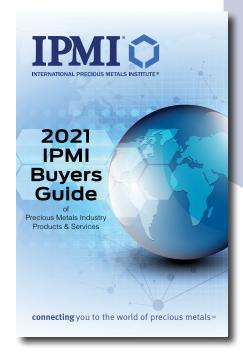
Please see our IPMI.org website IPMI & Industry News for a complete listing of news articles relative to the world of precious metals.

Members Directory and Buyers Guide Available Electronically

You may now receive the IPMI 2021 Members Directory and 2021 Buyers Guide publications electronically.

Contact mail@ipmi.org for details.





IPMI® Calendar

To register attendance to IPMI events or add to your personal calendar, click on the following: https://www.ipmi.org/events/event_list.asp

2022	Feb 8-9	Annual Legislative and Public Affairs Conference • Washington, D.C.
	Mar 1-3	IPMI Winter Meetings • Hyatt Regency Grand Cypress • Orlando, FL
	Apr 7	Gold Seminar • New York, NY
	Jun 11-14	46th Annual Conference • Hyatt Regency Grand Cypress • Orlando, FL
	Sep 12-16	Platinum Week • New York, NY