

# Precious Metals News

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## Annual Conference Issue

# IPMI Announces 2011 Award Winners



The IPMI Awards and Grants Committee, chaired by Martin Durney, have announced the winners of the 2011 IPMI Awards. The award recipients have been selected after evaluating nominations of highly qualified candidates. They will be presented during the IPMI 35th Conference at the Awards Banquet on Tuesday evening, June 14th.

The 2011 **IPMI Jun-chiro Tanaka Distinguished Achievement Award**, sponsored by Tanaka Kikinzoku Kogyo K.K. recognizes an individual for his or her significant contributions to the advancement of the precious metals industry, technical, economic or managerial. The recipient of the award for 2011 is **Dr. Martin T. Durney**.



**Dr. Martin T. Durney**

Dr. Durney, having most recently served as President, Catalysts & Chemicals for the Precious Metal Products Division, has transitioned into his interim role as Vice President of Health Science until his retirement on December 31, 2011. Martin will be responsible for coordinating the Group's response to Health Science issues and will play a lead role with respect to Pt advocacy.

As President of Catalysts & Chemicals, Martin was responsible for global operations of the business units, including catalysts for the Pharmaceutical, Fine Chemical, Chemical & Specialty Chemical markets, and Platinum Group Metal Chemicals. Martin's direct site responsibilities included West Deptford, N.J. and Sevierville, TN, USA; Cambridge, (Royston) UK; Oberhausen and Emmerich, Germany; Taloja, India and Shanghai, China. During this time, Martin and his team, worked closely with the Chinese government to commission a PGM chemicals plant, a Sponge Nickel plant and a new heterogeneous catalysts manufacturing facility at the Shanghai site. Dr. Durney provided strategic direction for the development of a state of the art Catalyst Technology Development Center in Taloja and directed the reengineering of the alloying and activation processes at the Tennessee location to improve operating efficiencies and bring these processes in line with Group Health and Safety standards.

During his tenure as President of Catalysts & Chemicals, Dr. Durney sat on several JM boards: Johnson Matthey Inc (Chairman), Johnson Matthey Shanghai Catalyst, Johnson Matthey Shanghai Trading and Johnson Matthey Chemicals India Pvt Ltd. He chaired JM's North American Compliance and Executive Committee. In addition to these roles, Martin was instrumental in progressing the company's sustainability 2017 vision, especially as it relates to sourcing alternative energy sources.

Under his direction the West Deptford, NJ facility developed and installed a natural gas fired co-generation power plant which generates 6 megawatts of power and saves \$1.0 million+ per year in electrical fees over conventional elec-

tricity supply options.

Further, the site recently negotiated an agreement with Constellation Energy to purchase 3.0 megawatts of solar power from a dedicated solar grid which will generate reduced electricity fees and lower the site's carbon footprint by 30%, all at no capital or operating cost to Johnson Matthey.

In his 37 years with the company, Dr. Durney has contributed in a variety of roles. In 1974, Dr. Durney was hired as a Development Chemist, responsible for much of the early work on Process Optimization and Cost Reduction. 1976 – Dr. Durney accepted the role of Production Manager of the Catalyst Recovery Department and, later became Produc-

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# AWARD WINNERS

tion Manager of Johnson Matthey's PGM NA Refining Plant, managing the process design team for the then-new West Deptford PGM Refinery.

Beginning in 1981, Dr. Durney held various senior level commercial roles within the West Deptford, NJ facility where he was responsible for all commercial, development and production areas and played an integral role in more than doubling the business. In 1997 he became General Manager, Nobel Metal Products located in Wayne, PA. Under Dr. Durney's leadership, all key performance indicators were exceeded.

In 1998, Dr. Durney returned to the Chemicals Division as General Manager, Chemicals NA. He accepted a Division role in 2002 as Vice President, Sales & Marketing, Catalysts & Chemicals Division.

Following the acquisition and integration of Syntex from ICI in 2002, Dr. Durney was appointed Vice President & General Manager, Chemicals NA and Asia and in 2007 he assumed the position of President, Catalysts & Chemicals. In spite of the very difficult economic environment, the Catalysts & Chemicals business increased two-fold during his tenure.

Dr. Durney's professional and educational background accentuates his interest in Coordination and Organometallic Transition Metal Compounds, an area in which he has done considerable research. In 1967, Dr. Durney received his Bachelor of Science degree in Chemistry from Seton Hall University (South Orange, NJ). He completed his Ph.D. in 1972 at the University of Nebraska, where he authored "Coordination and Organometallic Chemistry of the Lanthanides". As a recipient of the University of Texas' Robert A. Welch Post Doctoral Fellowship from 1972 to 1974, Dr. Durney completed groundbreaking work on coordination compounds as they relate to Class I Drugs, such as copper/mescaline and other hallucinogenic compounds.

In addition to his position at Johnson Matthey, Dr. Durney is a charter member,

past president and current EXCO/Board Member of the International Precious Metals Institute and a member of the Industrial Advisory Board, Department of Chemistry, for the University of Nebraska Lincoln. He is also Chairperson of the Board of Trustees of St. Joseph High School, Hammonton, New Jersey.

Dr. Durney currently lives in Berlin, NJ, with his wife, Bernadette, and has three children and five grandchildren.

The recipient of the 2011 **IPMI Henry J. Albert Award**, sponsored by BASF Corporation is **Professor Graham J. Hutchings**, Cardiff University, UK. Hutchings is a pioneer in the design and study of novel heterogeneous catalysis. He has made outstanding contributions to the science and technology of precious metals. In 1985 he was the first to predict that gold would be the most active heterogeneous catalyst for reactions of acetylenes. Therefore he was one of the first two researchers to recognize gold potential, in cationic form as an active catalyst at low temperatures. Since his initial discovery he has continued to play a lead role in this field being the first to predict and demonstrate that gold would be the catalyst of choice for ethyne hydrochlorination, the first to show cationic gold is active for CO oxidation, and also the first to show that small gold nanoparticles are effective for the direct synthesis of hydrogen peroxide. Additionally, Hutchings has designed a gold catalyst supported on iron oxide that was capable of oxidizing carbon monoxide in a fuel cell environment that did not oxidize hydrogen. Also, he resolved the long problem concerning the precise nature of the active sites in gold catalysts for CO oxidation. By using the latest aberration-corrected STEM microscopy he has shown that it is oxide supported sub nanometer bilayer structures comprising 7-10 gold atoms that are active.

His most notable achievements have been made using gold palladium alloys since he was the first to show that these alloys are highly effective catalysts for a range of technically demanding reactions.



**Professor Graham J. Hutchings**

His finding that the addition of gold to palladium to form alloy nanoparticles dramatically enhances the activity for the catalytic reactions.

Graham Hutchings' work has had major impact on academic and industrial perceptions of catalysis. It has helped open up a new field of chemistry and has been a trend setter in the industry. In particular, this research will also have a major environmental impact as now VCM is made using acetylene hydrochlorination with volatile  $HgCl_2$  as catalyst that is toxic but switching to a gold based catalysts will alleviate the environmental burden. He has published 544 papers, and edited 14 journals, has been cited over 11,000 times and holds 35 patents.

Professor Hutchings received a BSc in Chemistry from University College London and a PhD in Biologic Chemistry at University College London.

In late 2010, a new award was implemented, **The Carol Tyler Award** which recognizes the achievement of a woman in precious metal industry, research or academia. The first recipient of this award is **Dr. Jennifer Edwards**, of Cardiff University. Presently a post doctoral scientist, her research involves the use of gold-palladium catalysts for selective oxidation and has resulted in the publication of approximately 36 journal papers and has

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# AWARD WINNERS



**Dr. Jennifer Edwards**

featured in many national and international conferences. A sought after speaker, she is gaining international recognition for her scientific achievements. In particular, her research is focused on the synthesis and use of gold palladium nanoparticles and she has shown that these can be used for direct synthesis of hydrogen peroxide in a challenging reaction. Her discovery is that pre treatment of the support with an acid prior to deposition of the alloy nanoparticle switches off the decomposition of hydrogen peroxide but does permit its synthesis.

Jennifer received her BSc at Cardiff University as well as her PhD.

The 2011 **IPMI Gemini Graduate Student Award** recipient is **Jimmy John** of Cornell University. Nominated by Hector Abruña, the 2010 recipient of the IPMI Student Advisor Award, Mr. John's research focuses on the electrocatalytic activity of platinum and platinum containing materials for the oxidation of formic acid and other organic molecules of potential utility as fuel cell fuels under alkaline media. He received a Masters Degree in Chemistry from Indian Institute of Technology Kanpur.

The 2011 **IPMI Metalor Technologies Award** winner is **Justin Wilson** of MIT. Nominated by Stephen Lippard, the 2008 recipient of the IPMI Student Advisor Award, Mr. Wilson's research is centered on the synthesis of platinum complexes

designed to improve upon the existing platinum anticancer drugs, with the overall goal of lowering or avoiding the unwanted side effects of the use of this metal in treatment. He received a B.S. Degree in Chemistry from the University of California at Berkeley.

**Robert MacFarlane** of Northwestern University is the **IPMI Sabin Metal Award** recipient for 2011. Nominated by Chad Mirkin, MacFarlane earned a BA in Biochemistry at Willamette University and a MS in Inorganic Chemistry from Yale University. His research which has enabled the development of multiple crystalline systems with varied lattice parameters and crystallographic arrangement, specifically focuses on the design and synthesis of noble metal nanoparticle superlattices that utilize DNA functionalized gold nanoparticles as nanoscale atom mimics.

The **IPMI Johnson Matthey Student Award** recipient for 2011 is **Matthew Boucher** who was nominated by Maria Flytzani-Stephanopoulos, the 2008 IPMI Henry J Albert Award winner. A PhD candidate at Tuft University, Mr. Boucher earned Bachelor and Masters Degrees from the University of Connecticut in Chemical Engineering. His research is an investigation into the applicability of atomically dispersed precious metals for the steam reforming and decomposition of methanol. The aim of the investigation is to identify a new class of shape controlled catalysts where active metals are dispersed on metal oxides with preferred crystal structures.

The **IPMI Metro New York Chapter Award** winner is **Huifeng Qian**, a doctoral candidate at Carnegie Mellon University. Qian, whose advisor, **Professor Rongchao Jin** is the 2011 recipient of the **IPMI Student Advisor Award**, focuses his area of research on controlling gold nanoparticles with atomic precision for catalytic application. Qian received B.S. and M.S. Degrees from Shanghai Jia Tong University.

In 2010, IPMI implemented the **Bright**

**Futures Award**, sponsored by the Gero Family Trust. The first recipient of this award is **Bryant Pollock** of the University of Utah. Nominated by Professor Peter Stang, Pollock's research involves host-guest systems for biological applications, initially targeting a fluorescent glucose sensor as a diagnostic tool for diabetics with the use of platinum. He received B.S. and M.S. Degrees from East Carolina University.

This year IPMI awarded four Students the **IPMI Student Award**. They are:

**Choumini Balasanthiran**, a Ph.D. candidate at the University of South Dakota. Professor James Hoefelmeyer nominated her for her research involving synthesis of highly efficient photocatalyst using precious metals for sunlight driven water splitting. She holds two Bachelor of Science Degrees, one from Wayamba University of Sri Lanka in Food Science and Nutrition and the other in Chemistry from the Institute of Chemistry, Ceylon.

Graduate Student **Neda Dalili**, nominated by Professor Douglas Ivey, of the University of Alberta, focuses her research on finding and understanding the behavior of appropriate diffusion barriers. The barriers will incorporate precious metals, in particular rhodium and iridium.

**Nick Gow**, is a Ph. D. candidate at Montana Tech of the University of Montana and his research involves looking at the electrochemistry of enargite (CuAsS) and specifically its refractory nature in preventing from easily releasing encapsulated gold. He holds M.S. and B.S. degrees from Montana Tech in Metallurgical Engineering and Metallurgical and Materials engineering, respectively. He was nominated by Professor Courtney Young.

Professor Paul Rowntree of the University of Guelph nominated his student, **Eric Nicol**. Nicol's research centers on studying the interaction of gold surfaces with thiosulfate solutions. He received a Masters of Science in Chemistry Degree from the University of Guelph and also a Honours Bachelor of Science in Chemistry from that institution.

## 21st Annual Jewelry Design Competition Sponsored by IPMI New England Chapter

The 21st Annual Jewelry Design Awards were presented May 19th at the Squantum Association in East Providence, Rhode Island. The event, sponsored annually by the New England Chapter, recognizes and showcases the talents and designing skills of students. More than 40 creations were submitted and the judging was difficult. More than \$10,000 was awarded in prizes and grants. Notable awards include the Carol Tyler Award (\$2500), La Fazia (\$1000) and the IPMI President's Award (\$1500). Congratulations to all the Jewelry Design Student Award winners.



### Jewelry Design Competition Winners



#### Carol Tyler Memorial Award

*Moon Necklace with Aquamarine*

Avery Lucas  
Univ. of Massachusetts, Dartmouth

#### IPMI President's Award

*Pearls for My Mother*

Kelly Jean Conroy  
Univ. of Massachusetts, Dartmouth



#### LaFazia Award

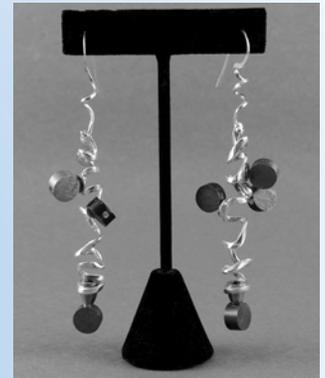
*Thoughts for the Future*

Analiiese Stinson  
Massachusetts College of Art and Design

#### Technical Merit Award

*Helical Earrings*

Roland St. Pierre  
Univ. of Massachusetts, Dartmouth



#### IPMI New England Chapter Award

*Navigation*

Grace Hilliard-Koshiriskey  
Univ. of Massachusetts, Dartmouth



#### Honorable Mention

*Stiches of Sterling*

Julian De La Garza  
Rhode Island College



#### Honorable Mention

*Line Meets Hinge Series*

Lindsay P. Mis  
Univ. of Massachusetts, Dartmouth



#### Honorable Mention

*Black & White Chain*

Laura Jakinhsch  
Massachusetts College of Art and Design



#### Honorable Mention

*Silver*

Katherine Patalano  
Rhode Island College

## Metalor Agrees to Buy NECC-Coatings

Metalor Technologies International SA (<http://www.metalor.com/>) and NECC ([www.ne-chemcat.co.jp/eg](http://www.ne-chemcat.co.jp/eg)) have signed an agreement for the Metalor Group to acquire NECC's Coatings Division in Asia. The deal is expected to complete in a few weeks.

NECC's Coatings Division serves the electronics industry with precious metals chemicals, processes and electroplating equipment, and employs some over 100 staff at sites in Japan, Singapore, Taiwan, Korea and China. Metalor Group, had already been the exclusive distributor of NECC Coatings products outside of Japan and Korea since 2002.

The Metalor Group, headquartered in Neuchatel, Switzerland, is specialized in the field of precious metals and related advanced technologies. Present on 3 continents, Metalor employs more than 1600 people, Metalor has been controlled by the independent fund management company Astorg Partners since October 2009.

Scott Morrison, Metalor Group's CEO commented: "This acquisition is highly complementary to Metalor Group's existing Advanced Coatings Division in terms of products, customers and geographical footprint, and will confirm Metalor's position as a leading supplier to the electronics and decora-

tive precious metals plating markets."

Kenji Kasuga, NECC Executive Group Vice-President, said "My team and I are very pleased to be joining the Metalor Group since our activity is at core of Metalor's business. We also look forward to being Metalor's direct presence in Japan in Korea to offer new products and services in those markets."

The acquisition of NECC's Coatings Division is the first step of an ambitious build-up strategy established in common by Metalor's management and Astorg Partners.



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## New Heraeus Facility to Open This Year

The Heraeus Photovoltaic Business Unit has begun construction in Singapore of a new facility for the production of silver metallization paste used in crystalline solar cell applications. The site, which will include Manufacturing, R&D, Sales and Technical Service, will begin operations in the second half of 2011.

This new factory will add significant capacity to our growing global PV paste business, and supplements our

existing technical support capabilities in order to meet the needs of our customers in this fast moving industry" said Andy London, Vice President of Heraeus Materials Technology LLC in West Conshohocken.

London continues: "Management of this facility will be the responsibility of Pete Horan, currently Operations Manager of the West Conshohocken factory. Pete will move to Singapore midyear as construction is completed. We already

began hiring individuals who have commenced training in the United States." Heraeus produces paste for the PV industry in the US, Germany and China, making the Singapore facility its fourth manufacturing site.

Worldwide, Heraeus has more than doubled its technical staff, but aims to continue this expansion into 2011 as they look to hire additional employees this year.



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## Mr. Dave Wood Joins MST

Material Sampling Technologies is pleased to announce that in April of this year Mr. Dave Wood joined the company as Business Development & Sales Manager.

Dave comes to MST after a long and successful career in the precious metals refining business, where he spent the last 3 years as a Regional Sales Manager.

"We are very excited to have Dave join our team, and his arrival could not have come at a better time" said John Silvestri, President of MST. "In April MST completed the installation of its new **Thermal Reduction Unit**. This new state-of-the-art unit was custom-designed for us and will allow for faster processing lead times, added material

capabilities, and will help to round out the comprehensive services that we provide to our customers."

"As MST continues to grow, we feel that Dave's experience and integrity will enable him to lead our sales team, and to develop new business prospects for our organization."



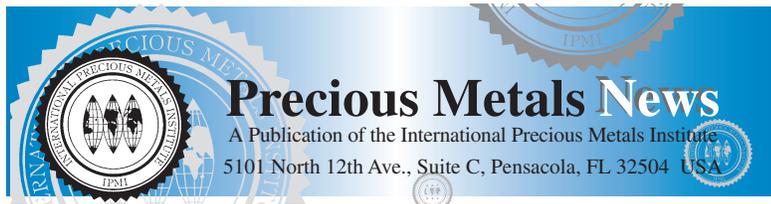
# Where Are They Now?

## IPMI Tracks Past Student Award Winners

Tanushree Ghosh, 2008 IPMI Student Award Winner, is currently in Chandler, AZ working for Intel Corp as a process engineer. After IPMI, she worked in Brookhaven National Lab in a collaboration project, then moved back to Cornell and finished her dissertation research. She joined Intel in Oct, 2009.



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### Editorial note

The IPMI Precious Metal News is printed and distributed at the end of each calendar year quarter, with the exception of the second quarter newsletter that is issued for conference distribution. There is an additional post conference newsletter issued in August.

## IPMI Welcomes New Patron Members

**BRM Services**  
Birmingham, AL

**IPMR**  
Abu Dhabi, UAE

**Sunshine Mint**  
Coeur d'Alene, ID

**Hindustan Platinum Private, Ltd.**  
Navi Mumbai, India

## IPMI Welcomes New Sustaining Members

**United DMS of Tennessee, LLC**  
Knoxville, TN

**Trinity Metals**  
Dallas, Texas

**Vacuum Engineering & Materials Co., Inc.**  
Santa Clara, CA

## IPMI Calendar

<b>2011</b>	June 11-14	35 <sup>th</sup> Annual Conference of Precious Metals JW Marriott San Antonio Hill Country Resort & Spa, San Antonio, TX
<b>2012</b>	June 9-12	36 <sup>th</sup> Annual Conference of Precious Metals JW Marriott Las Vegas at Summerlin, Las Vegas, NV
<b>2013</b>	June 8-11	37 <sup>th</sup> Annual Conference of Precious Metals JW Marriott Desert Ridge, Phoenix, AZ
<b>2014</b>	June 7-10	38 <sup>th</sup> Annual Conference of Precious Metals JW Marriott Grande Lakes, Orlando FL

## 2010-2011 IPMI Executive Committee

- Harvey Gottlieb .....President
- Dr. Robert Ianniello .....Vice President
- Brad Cook..... Secretary
- Uve Kupka .....Treasurer
- A. George Gero ..... Immediate Past President
- Kevin Beirne ..... Committee Member
- Larry Drummond ..... Committee Member
- Dr. Martin T. Durney ..... Committee Member
- Christopher Jones ..... Committee Member
- Alan R. Kaye ..... Committee Member
- Fred Saada ..... Committee Member
- Dr. Larry Manziek.....Executive Director