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## Tanaka Precious Metals Announces Recipients of “Precious Metals Research Grants”

Maximum Grant of 5 Million Yen for Solar Cell Research by University of Tokyo Professor Koji Segawa, 2 Million Yen Grant for Organic EL Research by Osaka Prefecture University Associate Professor Shigeyuki Yagi

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Tanaka Holdings Co., Ltd. (a company of Tanaka Precious Metals, Head office: Chiyoda-ku, Tokyo; President & CEO: Hideya Okamoto) today announced the recipients of the Tanaka Precious Metals' 2013 “Precious Metals Research Grants.” The Platinum Award for the maximum amount of 5 million yen was granted for research on improving the conversion efficiency of organic solar cells by University of Tokyo Professor Koji Segawa, and the Gold Award for 2 million yen was granted for research on improving the color rendering properties of organic EL (electroluminescence) lighting by Osaka Prefecture University Associate Professor Shigeyuki Yagi. A total of 14.2 million yen in research grants was awarded for 26 research projects.

Tanaka Precious Metals develops and provides a stable supply of a variety of precious metal materials based on the corporate philosophy of contributing to a beautiful future and well-balanced and prosperous society brought about by precious metals, and is working to contribute to the advancement and stability of industry in addition to the realization of a prosperous and affluent living environment. This grant program has been implemented every year since 1999 to support the various challenges faced in the “new world opened up by precious metals” as part of these business activities. In the 15th year of the program, there were 150 applications to a call for research in all fields related to research and development aimed at the practical application of new technologies and products to which precious metals can contribute.

The names of the recipients of the Platinum Award and the Gold Award, their research topics and the reasons for the award are shown below.

■ Platinum Award

**University of Tokyo Professor Koji Segawa**

**Wide band organic solar cell using spin flip excitation of a new Ru (ruthenium) complex**

With global demand for highly efficient renewable energy sources, the realization of solar power generation is a significant contribution to the next generation. Revolutionary technological innovation has brought about the world's highest level of efficiency by combining the development of advanced precious metal pigments and organic pigments in order to take advantage of the naturally abundant sunlight that is available. This research was recognized for fully utilizing the characteristics of precious metals, and was assessed as being suitable for this year's Platinum Award.

■ Gold Award

**Osaka Prefecture University Associate Professor Shigeyuki Yagi**

**Excimer light emission control of phosphorescent platinum complexes and application in simple dope-type white electroluminescence elements**

Organic EL lighting that is gaining attention as next-generation illumination equipment is expected to see revolutionary advances in material aspects aimed at practical application. This research gave way to a new molecular modification method for promoting excimer light emission particular to flat 4-coordinate cyclometalated platinum complexes, and created platinum complexes with high color rendering properties despite being a simple light emitting material. It was highly acclaimed as research for promotion of widespread use of precious metal materials in industrial applications by utilizing the triplet excitation, a characteristic of precious metal.

In addition, 8 Silver Awards and 16 MMS Awards were given, as shown along with the overview of the research grants shown below. Applications for the 2014 research grants are scheduled to open in autumn.

**List of Recipients of the 2013 Precious Metals Research Grants**

<b>Platinum Award (1 award, 5 million yen)</b>	
Koji Segawa, Professor, University of Tokyo	Wide band organic solar cell using spin flip excitation of a new Ru complex
<b>Gold Award (1 award, 2 million yen each)</b>	
Shigeyuki Yagi, Associate Professor, Osaka Prefecture University	Excimer light emission control of phosphorescent platinum complexes and application in simple dope-type white electroluminescence elements
<b>Silver Awards (8 awards, 500,000 yen each)</b>	
Hiroshi Inoue, Professor, Osaka Prefecture University	Creation of a catalyst for complete oxidation of ethanol into carbon dioxide in direct ethanol fuel cell anodes
Toshiharu Saiki, Professor, Keio University	Development of a homogenous immunoassay device using digital counting of gold nanoparticles
Tatsuo Hasegawa, Deputy Center Director, National Institute of Advanced Industrial Science and Technology	Development of wire printing technology for flexible devices
Norihisa Kobayashi, Professor, Chiba University	Development and environmental application of color light modulation elements controlling plasmon absorption bands using electrodeposited silver nanoparticles
Hiroshi Endo, Assistant Professor, Tokyo University of Science	Development of a multilayered colloid porous graphene electrode catalyst supporting a high density of anomalous Pt (platinum) nanoparticles
Fumihiko Inoue, Special Research PD, Tohoku University	Technology for forming semiconductor wiring using electroless copper plating onto a film deposited with Ru by ALD
Naoyoshi Egashira, Professor, Prefectural University of Hiroshima	Research on the use of gold electrodes for high-precision detection of influenza virus
Mikiko Saito, Associate Professor, Waseda University	Research on hard precious metal electrical contacts utilizing nanoplating technology

**MMS Awards (16 awards, 200,000 yen each)**

Shochiku Kure, Associate Professor, Iwate University	Hiroshi Shiigi, Associate Professor, Osaka Prefecture University
Ichiro Tanabe, Doctoral Research Fellow, Kwansei Gakuin University	Kazuhiro Tanabe, Associate Professor, Kyoto University
Fumio Okada, Professor, Kogakuin University	Katsuhiko Nomura, Research Fellow, National Institute of Advanced Industrial Science and Technology
Makoto Hasegawa, Professor, Chitose Institute of Science and Technology	Takafumi Uemura, Special Lecturer, University of Tokyo
Takao Shimizu, Special Assistant Professor, Tokyo Institute of Technology	Hiroshi Naganuma, Assistant Professor, Tohoku University
Jun Ota, Professor, Nara Institute of Science and Technology	Masaki Okada, Associate Professor, Nihon University
Yasunori Iwai, Senior Scientist, Japan Atomic Energy Agency	Yasuharu Kanda, Assistant Professor, Muroran Institute of Technology
Kenjiro Fukuda, Assistant Professor, Yamagata University	Takuma Hachisu, Junior Researcher, Waseda University

**Overview of the 2013 Precious Metals Research Grants****[Subject]**

Research and development aimed at the practical application of new technologies and products to which precious metals can make a contribution

- Precious metals must play an important role in commercialization and/or practical application of the research.
- Development related to precious metals must provide a breakthrough in the progress of the commercialization and/or practical application.

**[Grant amounts]**

- Platinum Award: 5 million yen (1 award)
- Gold Award: 2 million yen (1 award)
- Silver Awards: 500,000 yen (several awards)
  - \* The grant amount is treated as a scholarship donation.
  - \* Each award is given to research deemed to make a particularly large contribution to practical implementation, and awards may not be granted in some cases.

**[Eligible candidates]**

Personnel who belong to educational research institutions or public research institutes in Japan

- Applicants belonging to research institutions in Japan are eligible regardless of whether they are based in Japan or overseas.

**[Application period]**

September 2, 2013 (Mon) - 5pm, November 29, 2013 (Fri)

**[Conditions]**

- When applying with joint research, the representative should apply.
- Students must obtain approval from the person responsible for their laboratory in order to submit an application.
- Clearly state if any joint research is being performed with other precious metal manufactures (including planned).
- Applicants may be required to exchange information with Tanaka Precious Metals about product development, technology development and guidance through the research.
- Excludes research that has already been commercialized or for which there are such plans.
- Excludes fundamental research such as analysis, evaluation and production technology.

**[Inquiries concerning the research grant program]**

Precious Metals Research Grants Office

Tanaka Holdings Co., Ltd. MMS

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Official website: <http://prexnet.jp/info/>

■**Tanaka Holdings Co., Ltd. (Holding company of Tanaka Precious Metals)**

Headquarters: 22F, Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo

Representative: Hideya Okamoto, President & CEO

Founded: 1885

Incorporated: 1918

Capital: 500 million yen

Employees in consolidated group: 3,895 (FY2012)

Net sales of consolidated group: 839.2 billion yen (FY2012)

Main businesses of the group:

Manufacture, sales, import and export of precious metals (platinum, gold, silver, and others) and various types of industrial precious metals products. Recycling and refining of precious metals.

Website: <http://www.tanaka.co.jp/english> (Tanaka Precious Metals),

<http://pro.tanaka.co.jp/en> (Industrial products)

**<About the Tanaka Precious Metals>**

Established in 1885, the Tanaka Precious Metals has built a diversified range of business activities focused on the use of precious metals. On April 1, 2010, the group was reorganized with Tanaka Holdings Co., Ltd. as the holding company (parent company) of the Tanaka Precious Metals. In addition to strengthening corporate governance, the company aims to improve overall service to customers by ensuring efficient management and dynamic execution of operations. Tanaka Precious Metals is committed, as a specialist corporate entity, to providing a diverse range of products through cooperation among group companies.

Tanaka Precious Metals is in the top class in Japan in terms of the volume of precious metal handled, and for many years the group has developed and stably supplied industrial precious metals, in addition to providing accessories and savings commodities utilizing precious metals. As precious metal professionals, the Group will continue to contribute to enriching people's lives in the future.

The eight core companies in the Tanaka Precious Metals are as follows.

- Tanaka Holdings Co., Ltd. (pure holding company)
- Tanaka Kikinzoku Hanbai K.K.
- Tanaka Denshi Kogyo K.K.
- Tanaka Kikinzoku Jewelry K.K.
- Tanaka Kikinzoku Kogyo K.K.
- Tanaka Kikinzoku International K.K.
- Electroplating Engineers of Japan, Limited
- Tanaka Kikinzoku Business Service K.K.