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The highest amount of grants on record as 16 million yen provided, with three Gold Awards of 2 million yen granted for the first time - Iwate University Professor Katsunori Yamaguchi in the field of recycling, Tohoku University Associate Professor Shin Saito in the field of hard disks, and University of Hyogo Technical Advisor Takao Fukuoka in the field of medical and food testing

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

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Tanaka Holdings Co., Ltd. (a company of Tanaka Precious Metals, Head office: Marunouchi, Chiyoda-ku, Tokyo; President & CEO: Hideya Okamoto) today announced the recipients of the Tanaka Precious Metals' 2012 “Precious Metals Research Grants.” As a result of rigorously screening of the 160 applications (the most on record), three Gold Awards for 2 million yen were awarded for the first time since the implementation, and these will be awarded to Iwate University Professor Katsunori Yamaguchi, Tohoku University Associate Professor Shin Saito and University of Hyogo Technical Advisor Takao Fukuoka. The 3 applicants were simultaneously awarded the Gold Award due to the equivalent degree of excellence. Furthermore, 12 Silver Awards providing 500,000 yen were awarded, which is the highest number on record, out of numerous excellent researches.

This research grant program has been implemented every year since 1999 to support the various challenges faced in the “new world opened up by precious metals” by providing grants to Japanese institutions conducting research and development using precious metals. In the 14th year of the program, there were 160 applications to a call for research in all fields based on the theme of “research and development aimed at the practical application of new technologies and products to which precious metals can make a contribution.” 35 of these were recipients of the highest total of 16 million yen in research grants.

The names of the three Gold Award winners, their research topics and winning reasons are shown below.

■ Katsunori Yamaguchi, Professor, Iwate University

“Segregation behavior of iridium in copper alloys containing ruthenium”

When carrying out fire refining which is able to collect platinum group metals such as ruthenium, iridium and platinum at a high grade, ascertaining the behavior of the platinum group metals in relation to copper, which is collector metal (extracting agent), is a vital issue. With no past reports of ternary state diagrams of copper-iridium-ruthenium, the discoveries in this research were highly regarded not only for implementation in actual operations of platinum group collection, but also as being a yardstick for future researchers.

■ Shin Saito, Associate Professor, Tohoku University

“Uniaxial innovation of dense atomic layers of alloy thin films containing precious metals, and application in magnetic storage devices”

Hard disks constitute a significant market to which precious metals contribute, and as higher density is required with every generation, magnetic materials are required to play a greater role. This research was highly regarded for considering the aspects of valence electron control and stacking fault control, while also examining the effect of additives such as precious metal materials and non-metal materials to identify the possibility of providing solutions related to next-generation magnetic materials.

■Takao Fukuoka, Technical Advisor, University of Hyogo

“Stealth nano-beacons”

This research proposes a system for creating nano (1 billionth) gold markers that cannot be falsified, duplicated or seen by third parties, and simply detecting such markers. It uses chemistry and physics to resolve the difficulty in maintaining the integrity and safety of the highly functional medicines and foods developed from the 21st century, and the technology was highly regarded because of the extreme contribution to will make to humankind and society if it comes to fruition.

In addition, 12 Silver Awards and 20 MMS Awards were given, as shown along with the overview of the research grants shown below. Applications for the 2013 research grants are scheduled to open in autumn.

### List of Recipients of the 2012 Precious Metals Research Grants

<b>Gold Award (3 awards, 2 million yen each)</b>	
Katsunori Yamaguchi, Professor, Iwate University	Segregation behavior of iridium in copper alloys containing ruthenium
Shin Saito, Associate Professor, Tohoku University	Uniaxial innovation of dense atomic layers of alloy thin films containing precious metals, and application in magnetic storage devices
Takao Fukuoka, Technical Advisor, University of Hyogo	Stealth nano-beacons
<b>Silver Awards (12 awards, 500,000 yen each)</b>	
Jun Akimitsu, Professor, Aoyama-Gakuin University	Creation of high-temperature superconductor material containing precious metals element
Yasuhiro Konishi, Professor, Osaka Prefecture University	Precious metals recycling from urban mines based on biotechnology
Futoshi Matsumoto, Associate Professor, Kanagawa University	Development of high-performance electrode catalysts for solid polymer electrolyte fuel cells using Pt (platinum) intermetallic compounds
Takeshi Tsuji, Assistant Professor, Kyushu University	Development of a new method for manufacturing sub-micron gold spherical particles
Akari Hayashi, Associate Professor, Kyushu University	Development of high durability fuel cells by stabilizing Pt catalyst
Takashi Fukuda, Research Fellow, National Institute of Advanced Industrial Science and Technology	Development of high sensitivity biosensor systems using smart devices
Toru Okabe, Professor, University of Tokyo	Development of innovative green recycling technology that dissolves platinum group metals in water
Tsuyoshi Sekitani, Associate Professor, University of Tokyo	Development of a bio-friendly flexible sensor sheet using high-density precious metal film – Innovative applied R&D contributing to the fields of medicine and welfare
Asuka Namai, Assistant Professor, University of Tokyo	Development of high coercivity nano-magnet using small additions of precious metal to iron rust analogue
Shunichiro Omi, Associate Professor, Tokyo Institute of Technology	Research on the reduction of contact resistance on PtSi (platinum silicide)/Si(100) surfaces by impurity segregation process
Hiroshi Naganuma, Assistant Professor, Tohoku University	Development of high-grade FePd (iron-palladium) melting targets for sputtering
Naoki Fukumuro, Assistant Professor, University of Hyogo	Creation of functional thin film using hydrogen induced effects in precious metal plating

**MMS Awards (20 awards, 200,000 yen each)**

Yutaka Ie, Associate Professor, Osaka University	Hiroshi Shiigi, Associate Professor, Osaka Prefecture University
Tsutomu Nagaoka, Professor, Osaka Prefecture University	Ken Sakai, Professor, Kyushu University
Masataka Hakamada, Assistant Professor, Kyoto University	Masato Tominaga, Associate Professor, Kumamoto University
Ryoji Funahashi, Research Fellow, National Institute of Advanced Industrial Science and Technology	Koji Kakehi, Associate Professor, Tokyo Metropolitan University
Makoto Hasegawa, Professor, Chitose Institute of Science and Technology	Yusuke Okawa, Associate Professor, Chiba University
Takehito Shimatsu, Professor, Tohoku University	Mika Gamo Nishitani, Professor, Toyo University
Hiroyuki Takei, Professor, Toyo University	Emi Takegawa, Dentist, Tokushima University
Hiroshi Yukawa, Assistant Professor, Nagoya University	Junpei Yamanaka, Professor, Nagoya City University
Ichiro Imae, Associate Professor, Hiroshima University	Kenji Shinozaki, Professor, Hiroshima University
Bunsho Ohtani, Professor, Hokkaido University	Hisashi Fukuda, Professor, Muroran Institute of Technology

\* No Platinum Award granted this year.

**Overview of the 2012 Precious Metals Research Grants****[Subject]**

Research and development for 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 commercialization progress and/or industrialization progress.

**[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 3, 2012 (Mon) - 5pm, November 30, 2012 (Fri)

## [Conditions]

- 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

22F Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo 100-6422

E-mail: joseikin(at)ml.tanaka.co.jp

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: 3,869 (FY2011)

Net sales of consolidated group: 1.064 trillion yen (FY2011)

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.

<Press inquiries>

Global Sales Dept., Tanaka Kikinzoku International K.K. (TKI)

[https://www.tanaka.co.jp/support/req/ks\\_contact\\_e/index.html](https://www.tanaka.co.jp/support/req/ks_contact_e/index.html)