PRESS RELEASE

March 31, 2020

TANAKA Memorial Foundation

TANAKA Memorial Foundation Announces Recipients of Precious Metals Research Grants

Professor Yasuhiro Konishi of Osaka Prefecture University presented the Gold Award for development of recycling technology that creates an industry for recycling precious metals from global e-waste. Also receiving a Gold Award was Associate Professor Kazuhiko Yamada of Kochi University for elucidating the mysterious surface of gold at a molecular level. Low-cost and environmentally-friendly precious metal recycling technology using bread yeast and analysis technology that will accelerate the development of new applications for gold received awards.

The TANAKA Memorial Foundation's Representative Director, Hideya Okamoto, announced the recipients of the FY2019 Precious Metals Research Grants.
Following a rigorous screening process, Gold Awards, each for 2 million yen, were presented to Professor Yasuhiro Konishi of Osaka Prefecture University and Associate Professor Kazuhiko Yamada of Kochi University. In addition, five research projects received Silver Awards, and two Young Researcher Awards were granted.

The TANAKA Memorial Foundation undertakes programs designed to foster developments in new precious metal fields while contributing to the advancement of science, technology, and socio-economics for the overall enrichment of society. The research grant program was launched in FY1999 and has continued each year since with the goal of supporting the various challenges of the "new world opened up by precious metals." This year, the program's 21st year, a total of 198 applications were received in a wide range of fields where precious metals can make contributions to the research and development of new technologies. A total of 16.1 million yen in research grants was awarded for 26 projects.

The names of the two Gold Award recipients, their research, and the reasons for their selection are below.

■Professor Yasuhiro Konishi, Osaka Prefecture University

Development of recycling technology that creates an industry for recycling precious metals from global e-waste

This research seeks to create a method of highly efficient selective recovery of precious metals in a liquid by using bread yeast (a common product) as a separating agent. Professor Konishi is researching the separation and recovery of precious metals through a simple technique using bread yeast that can be applied by anyone (not only in developed countries, but in developing countries as well). This research was highly rated for the creation of precious metal recycling technology that is less expensive, more efficient, uses less energy, and produces less carbon emissions than earlier techniques while offering the possibility of building a foundation for the promotion of an e-waste resource recycling industry.

■Associate Professor Kazuhiko Yamada, Kochi University

Elucidation of the mysterious surface of gold at a molecular level

This research seeks to elucidate the mysterious surface of gold at a molecular level using the world's only next-generation nuclear magnetic resonance (NMR) device that can measure gold (197 Au). Gold has numerous applications as an industrial material in electronic components, optical sensors, catalysts, medical and diagnostic equipment and materials, and bonding agents, but there are not clear explanations of its organic bond structures and dynamic molecular behavior. By developing and introducing a high-sensitivity measurement system using NMR techniques, it will be possible to explain the structures and dynamic molecular behavior of organic metal bonds, and this research was highly rated for the potential to accelerate research and development.

Five Silver Awards, two Young Researcher Awards, and 17 Encouragement Awards were also granted. The recipients and an overview of the Precious Metals Research Grants are indicated below. Applications for the FY2020 research granted are scheduled to open in the fall.

List of FY2019 Precious Metals Research Grants Recipients

Platinum Award (0 award, 5 million yen)	
Non granted	
Gold Award (2 awards, 2 million yen each)	
Yasuhiro Konishi, Professor, Osaka Prefecture University	Development of recycling technology that creates an industry for recycling precious metals from global e-waste
Kazuhiko Yamada, Associate Professor, Kochi University	Elucidation of the mysterious surface of gold at a molecular level
Silver Awards (5 awards, 1 million yen each)	
Norihiro Murayama, Professor, Kansai University	Development of an innovative gold separation and recovery process using a new organic reducing agent
Keisuke Ohto, Professor, Saga University	Sequential recovery of precious metals using a micro-reactor system
Takeshi Tsuji, Associate Professor, Shimane University	Creation of a method for production of binder-free platinum sub-micron particles
Toshinori Fujie, Lecturer, Tokyo Institute of Technology	Development of a wireless power supply on-body blood glucose sensor using digital fabrication
Hironori Ohba, Senior Principal Researcher, National Institutes for Quantum and Radiological Science and Technology	Creation of a precious metal continuous recovery system using laser atomization separation
Young Researcher Awards (2 awards, 1 million yen each)	
Akihiro Yoshimura, Assistant Professor, Chiba University	Creation of an innovative platinum-group metal recycling process using solid aqua regia
Yoshiaki Nishijima, Associate Professor, Yokohama National University	Excess hydrogen exposure response of gold-palladium alloys and hydrogen sensor applications
Encouragement Award (17 awards, 300,000 yen each)	
Hideaki Sasaki, Senior Assistant Professor, Ehime University	Teppei Araki, Assistant Professor, Osaka University
Chen Chuantong, Specially Appointed Associate Professor, Osaka University	Shingo Fukuda, Assistant Professor, Kanazawa University
Yoshiki Shimizu, Research Group Leader, National Institute of Advanced Industrial Science and Technology	Satoshi Hinokuma, Senior Researcher, National Institute of Advanced Industrial Science and Technology
Yasuo Suzuki, Visiting Professor, University of Shizuoka	Jiro Kondo, Associate Professor, Sophia University
Makoto Tanabe, Specially Appointed Associate Professor, Tokyo Institute of Technology	Shintaro Yasui, Assistant Professor, Tokyo Institute of Technology
Kazuhito Tabata, Associate Professor, The University of Tokyo	Junsaku Nitta, Professor, Tohoku University
Shinnosuke Horiuchi, Assistant Professor, Nagasaki University	Takeshi Kato, Associate Professor, Nagoya University
Akinobu Yamaguchi, Associate Professor, University of Hyogo	Kuniaki Nagamine, Associate Professor, Yamagata University
Kaoru Ohno, Professor, Yokohama National University	

Overview of the 2019 Precious Metals Research Grants

[Conditions]

- New technology related to precious metals.
- Research and development related to precious metals that bring about innovative evolution in products.
- Research and development of new products using precious metals.

* Precious metal refers to eight elements of platinum, gold, silver, palladium, rhodium, iridium, ruthenium and osmium.

* If development is conducted jointly (or planned to be) with other material manufacturers, please indicate so.

* Products that have already been commercialized, put to practical use, or that are planned are not eligible.

[Grant amounts]

- Platinum Award: 5 million yen (1 award)
- Gold Award: 2 million yen (1 award)
- Silver Awards: 1 million yen (4 awards)
- Young Researcher Awards: 1 million yen (2 awards)
- Encouragement Award: 300,000 yen (several awards)

* The grant amount is treated as a scholarship donation.

* Awards may not be granted in some cases.

* The number of awards is subject to change.

[Eligible Candidates]

- Personnel who belong to (or work for) educational institutions in Japan (universities, graduate schools, or technical colleges), or public and related research institutions.
- As long as the applicant is affiliated with a research institution in Japan, the base of activity can be in Japan or overseas.
- The Young Researcher Awards are for researchers under the age of 37 as of April 1, 2019.

[Application period]

- 9am, September 2, 2019 (Mon) - 5pm, November 29, 2019 (Fri)

[Inquiries concerning the research grant program]

Precious Metals Research Grants Office
Marketing Department, TANAKA Kikinzoku Kogyo K.K.
22F Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo 100-6422
TEL: 03-6311-5596 FAX: 03-6311-5529 E-mail: joseikin@ml.tanaka.co.jp
TANAKA Memorial Foundation website: https://tanaka-foundation.or.jp

■ TANAKA Memorial Foundation

Established: April 1, 2015

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

Representative: Hideya Okamoto (Senior Advisor to TANAKA Holdings Co., Ltd.)

Purpose of Business: To provide grants for research related to precious metals to contribute to the development and cultivation of new fields for precious metals, and to the development of science, technology, and the social economy.

Areas of Business: Provision of grants for scientific and technological research related to precious metals. Recognition of excellent analysis of precious metals and holding of seminars and other events.

■TANAKA Kikinzoku Kogyo K.K.

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

Representative: Akira Tanae, Representative Director & CEO

Founded: 1885 Incorporated: 1918 Capital: 500 million yen

Employees; 2,332 (including overseas subsidiaries) (as of March 31, 2019)

Sales: 765,869,423,000 yen (FY2018)

Main businesses:

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

Website: https://tanaka-preciousmetals.com

<Press Inquiries>

TANAKA HOLDINGS Co., Ltd.

https://tanaka-preciousmetals.com/en/inquiries-for-media/