PRESS RELEASE

January 10, 2018

Tanaka Precious Metals

Tanaka Holdings Co., Ltd.

TANAKA Begins Shipments of SJeva, a Newly-developed, High-Quality Au Deposition Material

SJeva effective at reducing non-metallic inclusions in products

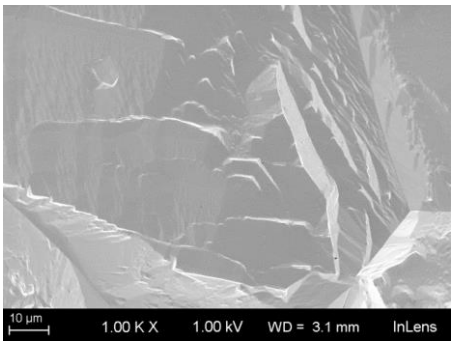
Contributes to raising productivity and reducing costs in semiconductor and medical device applications

Tanaka Holdings Co., Ltd. (Head office: Chiyoda-ku, Tokyo; Representative Director and CEO: Akira Tanae) announces the start of sample shipments of SJeva, a newly-developed, high-quality Au deposition material, by Tanaka Kikinzoku Kogyo K.K (Head office: Chiyoda-ku, Tokyo; Representative Director and CEO: Akira Tanae). Tanaka Kikinzoku Kogyo conducts industrial business within the Tanaka Precious Metals. The new deposition material has higher purity than earlier products, making it possible to reduce the amount of precious metals used, increase productivity and cut costs by reducing processing, and raise recoverability and recyclability.

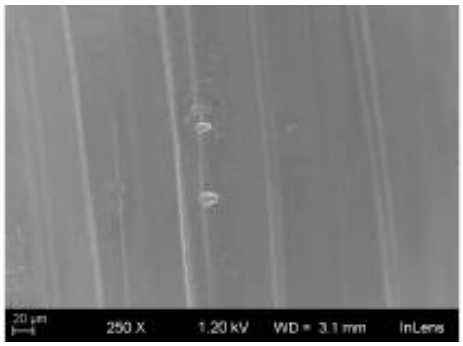
By improving manufacturing methods, Tanaka Kikinzoku Kogyo successfully reduced the amount of non-metallic inclusions[1] in the deposition material compared to conventional materials. Tanaka Kikinzoku Kogyo previously handled Au deposition materials with a purity of 4N (99.99% gold content) to 5N (99.999% gold content), and the new deposition material enhances the lineup of high-quality products. By using a deposition material with extremely low non-metallic inclusions, contaminants that collect on the surface during melting of the deposition material are reduced, eliminating the need for cleaning. The high-purity deposition material also makes it possible to shorten the preheating time[2] before film formation, decreasing consumption of deposition material that does not contribute to film formation and reducing costs. In addition, the new deposition material contains low levels of gas, and as a result, a reduction in splash phenomenon[3] from the deposition source during film formation can be expected, and it is possible to reduce the number of particles[4] that form on substrates, even during high-rate deposition.

As a result of the above properties and benefits of the new deposition material, it is expected to contribute to higher end-user productivity and lower costs when manufacturing final products that use deposition materials such as micro-wiring and MEMS in the semiconductor fields as well as optical devices, LEDs, and medical equipment.

SJeva high-quality Au deposition material (granules)



SJeva before melting (SEM photo)



SJeva after melting (SEM photo)

■ Benefits of the New Deposition Material

・Reduced number of cleaning processes

Usually, various shapes of deposition materials including pellet, plate, ribbon, wire, and grain shapes are used depending on the application, and melting is always necessary during deposition. Non-metallic inclusions present in the deposition material condense and form impurities during melting, and as a result, a cleaning process is essential. The new deposition material, however, contains an extremely low level of impurities, eliminating the need for a cleaning process, which is expected to reduce the number of processes.

・Costs reduced through shorter preheating time before film formation

A high-purity deposition material makes it possible to reduce the preheating time before film formation, which reduces consumption of deposition material that does not contribute to film formation and can reduce costs.

・Splash phenomenon from deposition source during film formation curtailed, reducing particle formation on substrates during high-rate deposition

The splash phenomenon is a representative type of problem that occurs during deposition that causes flaws such as particles and pin holes on substrates and films. High productivity can be expected from film formation with a higher deposition rate, but the more the deposition rate is increased, the more likely splash phenomenon is to occur, presenting a problem. The cause is gas present in the deposition material, and Tanaka Kikinzoku Kogyo successfully reduced the amount of gas by improving the manufacturing process, and as a result, splash phenomenon control effects can be expected.

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1 Non-metallic inclusions: Oxides, sulfides, and other non-metallic materials present in a metal material.

2 Preheating time: The time that the deposition material is heated until it melts.

3 Splash phenomenon: A representative type of problem that occurs during deposition during film formation and causes flaws such as particles and pin holes on substrates and films.

4 Particles: Granules and dust. Particles can degrade the properties and reliability of substrates and reduce yields.

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

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 in consolidated group: 5,120 (FY2016)
Net sales of consolidated group: 1,064,259 million yen (FY2016)
Main businesses of the group:
Strategic and efficient group management and management guidance to group companies as the holding company at the center of the Tanaka Precious Metals.
Website: http://www.tanaka.co.jp/english (Tanaka Precious Metals),
http://pro.tanaka.co.jp/en (Industrial products)
* Tanaka Holdings adopted a holding company structure on April 1, 2010.

■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: 2,269 (as of March 31, 2017)
Sales: 1,059,003.329 million yen (FY2016)
Main businesses:
Manufacture, sales, import and export of precious metals (platinum, gold, silver, and others) and various types of industrial precious metals products.
Website: http://pro.tanaka.co.jp/en

<About the Tanaka Precious Metals>

Since its foundation in 1885, the Tanaka Precious Metals group has built a diversified range of business activities focused on precious metals. Tanaka is a leader in Japan in terms of the volumes of precious metals handled. Over the course of many years, Tanaka Precious Metals has not only manufactured and sold precious metal products for industry, but also provided precious metals in such forms as jewelry and resources. As precious metals specialists, all Group companies within and outside Japan work together with unified cooperation between manufacturing, sales, and technological aspects to offer products and services. In addition, in order to make further progress in globalization, Tanaka Kikinzoku Kogyo welcomed Metalor Technologies International SA as a member of the Group in 2016.

As precious metal professionals, Tanaka Precious Metals will continue to contribute to the development of an enriching and prosperous society.

The five core companies in the Tanaka Precious Metals are as follows.
- Tanaka Holdings Co., Ltd. (pure holding company)
- Tanaka Kikinzoku Kogyo K.K.
- Tanaka Denshi Kogyo K.K.
- Electroplating Engineers of Japan, Limited
- Tanaka Kikinzoku Jewelry K.K.

<Press inquiries>
Tanaka Holdings Co., Ltd.
https://www.tanaka.co.jp/en/protanaka/inquiry/index.php