May 30, 2022

To all press outlets

Ball Wave Inc.

Sysmex to Commence Sales of the SYLPH Ultra-Miniature High-Performance Gas Chromatograph produced by Ball Wave

Key points of the announcement

・ Ball Wave Inc. (headquarters: Sendai City, Miyagi Prefecture (Japan); CEO: Shingo Akao; hereinafter "Ball Wave") and Sysmex Corporation (headquarters: Kobe City, Hyogo Prefecture; Chairman and CEO: Hisashi Ietsugu; hereinafter "Sysmex") have entered into a sales representative agreement for the ultra-miniature, high-performance, gas chromatograph[*1] (product name: SYLPH) that was developed, manufactured, and sold by Ball Wave.

・ Furthermore, Ball Wave has commenced a joint investigation with Sysmex to explore the possibility of using SYLPH in clinical testing.

■ Background

Ball Wave developed a gas chromatograph for space probe applications (left) that has the dimensions 100 × 100 × 100 mm and weighs approximately 1 kg through joint research with the Japan Aerospace Exploration Agency (JAXA) that works by utilizing the innovative its high-sensitivity "ball SAW" sensor[*2] and a "metal MEMS column[*3]". Based on these results, Ball Wave has begun providing prototypes of a palm-sized (A5 size) version of the device for applications on the earth (right). Sysmex will now begin sales of the commercial version of this prototype (named SYLPH) as a representative agent.

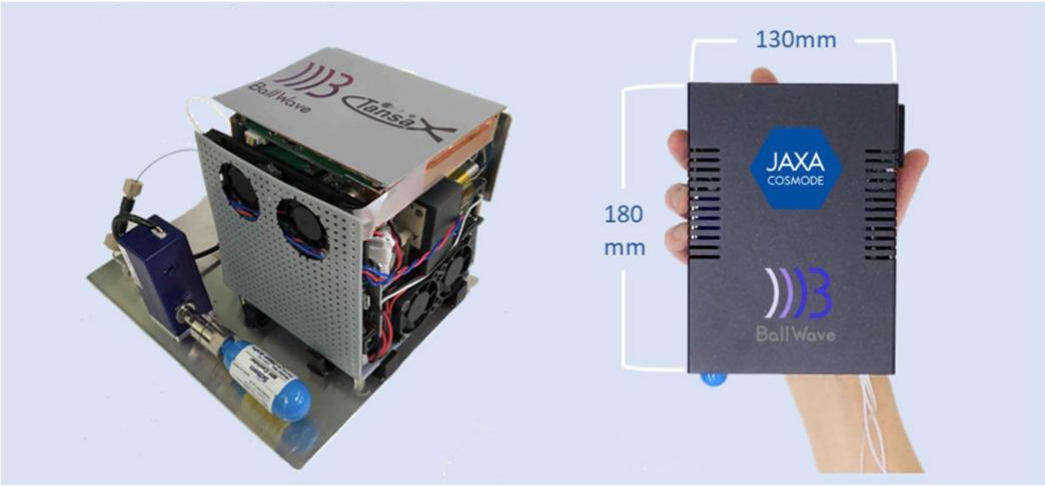

Figure 1. Gas chromatograph for space probe applications (left) Gas chromatograph for terrestrial applications (right)

The ultra-miniature, high-performance gas chromatograph (SYLPH) is expected to be used for many applications in various fields, including energy, industry, agriculture, forestry, fisheries, and healthcare, as shown below:

• Energy/industrial fields: Constituent analysis for evaluating the calorific value of natural gas, constituent analysis of gases discharged from binders and electrolytes during the fabrication and use of lithium batteries, VOC analysis, abnormal odor screening, etc.

• Agriculture, forestry, fisheries fields: Reduction of food losses by early detection of deterioration of foods such as fresh fish, fruits, vegetables, and food oils, as well as fermentation process monitoring by aroma analysis of alcohol products and soy sauce, etc.

• Healthcare field: Detection of sick house gases in living environments and contaminants in soil, disease detection by analysis of various bodily gases (exhalation, body odor, intestinal gas), etc.


Gas constituent analysis of manufacturing


Wholesomeness and ripeness checking of fresh food


Fermentation process


Screening for hazardous gases and abnormal odors

Figure 2. Use cases of “SYLPH”, ultra-miniature high-performance gas chromatograph

■ About Sysmex Corporation

In line with its mission of “shaping the advancement of healthcare,” which is defined in the “Sysmex Way,” the corporate philosophy of the Sysmex Group, Sysmex works to contribute to the development of healthcare and the healthy lives of people. Sysmex conducts integrated R&D, manufacturing and sales, and provides support services for its instruments, reagents and software for in vitro testing of

blood, urine and other bodily fluids. Sysmex supplies its products to medical institutions in more than 190 countries and regions throughout the world.

Website: https://www.sysmex.co.jp/en/

*1 A gas chromatograph is an analytical instrument that measures a wide range of species and concentrations by the phenomenon in which a mixed gas becomes temporally separated as it passes through a flow channel (called a column) in which a hollow tube is wound around a reel. These are generally large table-top devices. Although portable types have also been developed, they are inferior to large models in terms of sensitivity and accuracy.

*2 A surface acoustic wave (SAW) is defined here as a vibration that propagates concentrated at the surface of a solid as it is transmitted across the surface of a ball. The phenomenon was discovered by Professor Emeritus Yamanaka et al. at Tohoku University.

*3 A highly durable microfabricated column developed by Tohoku University that replaces the fragile and easily breakable silicon columns with resilient metal in small plate-shaped columns. The new columns are fabricated using a microfabrication technology called micro electro mechanical system (MEMS)

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