

## Koken starts KOACH Business internationally.

We introduced KOACH at American Geophysical Union (AGU23) in exhibition and maker session.



### Start of International Business

Approximately 10 years have passed since we started selling KOACH. Today, KOACH is recognized in a wide range of fields, including semiconductors, biotechnology, food, and aerospace. As of January 2024, our products have been adopted by over 1,500 customers, mainly in Japan. As a next step, we have decided to fully expand the KOACH business internationally.

As a first step in our international expansion, we have focused on academic fields where KOACH is widely used in Japan, and exhibited KOACH at AGU23, an international conference that is influential worldwide in geomicrobiology research.

### San Francisco, a city of academics and advanced technology

AGU23 is held every December in San Francisco on the west coast of the United States.

San Francisco is known as a city of academics, with Stanford University (ranked 2nd in the world) and the University of California, Berkeley (ranked 9th) located nearby, and the city attracting the next generation of brilliant minds from around the world. Silicon Valley lies on the outskirts of the city and is home to many of the world's leading IT companies, including Apple, Google (Alphabet), and Meta (formerly Facebook).



Stanford University



San Francisco bustling on the weekend before Christmas (above) and driverless taxi (white car) seen around town.



#1: AGU23 entrance  
 #2 & #3: Presentations by research institutions on space exploration and climate change.  
 #4: Poster presentation by researchers

**AGU was full of excitement.**

AGU is a geophysical society with over 100 years of history and is composed of 10 specialized fields including marine science, planetary science, and biogeochemistry. This year, AGU was held for five days from December 11th at the Moscone Center in San Francisco. Approximately 25,000 researchers from over 100 countries attended the event, and over 1,000 oral presentations and over 500 poster presentations were given.

AGU23 had an exhibition hall adjacent to the research presentation venue, where approximately 300 organizations, including government agencies, research institutes, universities, and companies, exhibited. At its exhibition booth, NASA repeatedly announced the latest information on space exploration, attracting the attention of many visitors. Other research institutes presented research on climate change and global issues caused by air pollution.

**<Our Exhibition at Exhibit Hall>**

**Introducing KOACH to International Researchers**

As a "first step" in our international expansion, we exhibited the Stand KOACH "KOACH C900-F" and Table KOACH "KOACH T500-F", as well as the particle counter "Model 3950" which is capable of measuring 0.1µm.

In order to visualize and show visitors the "ISO Class 1 air cleanliness" achieved by KOACH, a particle counter was used to show visitors that KOACH can achieve "zero counts of 0.1 µm particles" even in the exhibition hall where there was an "unlimited amount of dust."

Many visitors were surprised to find that even when they held their hands over KOACH's push hood, the airflow was so slight that it was almost imperceptible.



At our exhibition booth, where the sign "Now Demonstrating ISO Class 1 Air Quality Environment" caught the attention of visitors, we exhibited the KOACH C900-F (left) and KOACH T500-F.



#1: Using smoke to visualize the airflow blowing out of KOACH  
 #2: Explaining the features of KOACH to international researchers.  
 #3 & #4: Discussed research issues and problem solving using KOACH with foreign researchers.

**Foreign researchers have high hopes for KOACH as a tool for solving research problems**

We had the opportunity to hear some interesting stories about their research from the visitors.

It is generally believed that global warming is the cause of the melting of Arctic ice, but one researcher who visited our booth believed that the proliferation of microorganisms in the ice is what is causing the ice to melt. "I want to load the Table KOACH onto a ship and create a clean air environment in the Arctic to study the ecology of microorganisms," the researcher told us emphatically.

Additionally, some researchers expressed interest in using KOACH to assemble satellites. Once a satellite is launched into space, it cannot be maintained, so even a small amount of dirt that gets on it during the manufacturing process can cause it to malfunction. "KOACH creates ISO Class 1 clean air environment. The non-existence of airborne contaminants makes KOACH very attractive for use in satellite assembly", said the researcher.

**<Maker Session>**

**Dr. Morono's Presentation**

At the AGU23 Maker Session, Dr. Yuki Morono, a researcher well-known worldwide for his research on extremophile microorganisms, from the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) gave a presentation on examples of using the Table KOACH and Floor KOACH. Dr. Morono adopted KOACH in a way that helped to popularize it in the domestic research field.

**Table KOACH is portable and can be used to create a clean air space anywhere.**

Dr. Morono brings a Table KOACH onto the deep-sea drilling vessel Chikyu and other vessels to create a "personal clean room" on board, where he samples cores (samples) taken from deep beneath the seafloor. "The Table KOACH can be carried anywhere, and by cleaning the workbench, I can locally clean the space to a high level. It is very convenient because it can create a clean air environment in an open space," said Dr. Morono.



Dr. Morono (left) of JAMSTEC giving a presentation in the Maker Session, with visitors listening intently to the presentation

Table KOACH being used as "personal clean room" on a drilling vessel (Dr. Morono's presentation material)



Floor KOACH installed on the third floor of the Kochi Institute for Core Sample Research (Photo from the December 2015 issue of this CHS News).

**Floor KOACH creates an ISO Class 1 clean air space suitable for microbiology research.**

The cores collected from under the seafloor will be brought ashore and analyzed in detail in Dr. Morono's laboratory at the Kochi Institute for Core Sample Research (Nangoku City, Kochi Prefecture).

"The most important thing that researchers need to be careful about when handling microorganisms discovered from under the seafloor is to prevent the cores brought to land from being contaminated by air before they are examined," explained Dr. Morono. Microorganisms can be suspended in the air, and if they contaminate the core, it will be impossible to prove that the microorganisms being analyzed are definitely from the seafloor.

He also presented a solution to the problem. "The air cleanliness of the Floor KOACH is ISO Class 1, meaning there are no contaminants, making it suitable for microbiology research."

**Our future international expansion**

This time, through AGU23, we introduced KOACH to foreign researchers. We will continue to actively introduce KOACH to the academic community in the United States.

With the installation and use of KOACH at the Stanford University semiconductor research laboratory as a catalyst, we would like to introduce KOACH to the US semiconductor industry, where investment is accelerating, and make it useful for the development of advanced technology.

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**Dr. Yuki Morono**  
**Senior Researcher,**  
**Geomaterials Science Research Group,**  
**The Kochi Institute for Core Sample Research,**  
**The Japan Agency for Marine-Earth Science Technology (JAMSTEC)**

A research group led by Dr. Yuki Morono has confirmed that microorganisms extracted from a layer beneath the seafloor dating back approximately 100 million years are still alive. The results of this research were published in the British scientific journal Nature Communications in 2020. Dr. Morono has written many papers and has received various awards.



(Photo from the December 2015 issue of this CHS News).