

Pioneer in Speech Science: Kiyoshi Honda

By BI Weizi

After receiving his PhD from the University of Tokyo, Kiyoshi Honda worked at the ATR Research Institute in Japan as a supervisor of speech science research, then at the University of Wisconsin in the U.S., and Université Sorbonne Nouvelle- Paris 3 in France.

After joining Tianjin University in 2012, Honda led a multidisciplinary speech physiology research team, which is a cutting-edge research project in the field of life information science today. In June 2012, he was awarded the Quintana Award, the highest award in the field of speech science. Recently, Honda spoke to *Science & Technology Daily* to introduce his research achievements and share his insights on cooperation between China and Japan.

Science & Technology Daily: What is your story with Tianjin University ?

Kiyoshi Honda: I came to Tianjin, China, in 2012. The previous year, when I was in Paris, I received a call from Professor Jianwu Dang at Tianjin University. He asked me to apply for the National Program of Foreign Experts.

Professor Dang was my former colleague in Japan, and I immediately agreed to do so. Therefore, it was natural for me to join Tianjin University for his project. I already knew that a new international program is starting between Tianjin University and Japan Advanced Institute of Science and Technology.

Having lived in Tianjin for many years, how do you like the city?

Tianjin was familiar to me, as it is also to many Japanese people. I liked Tianjin for the modern, international, and accommodating atmosphere. Some areas downtown resemble streets in Paris, which also attracted me. I enjoyed working with our colleagues, sporting staff, and students, since they are particularly kind to me and respectful of my age. I presumed that university students generally want to keep a distance from professors, but I was wrong. I am particularly grateful that I am able to spend a pleasant life in China with intimacy of my students.

Speech science involves integration of many basic disciplines. What are your suggestions on basic sci-



Professor Kiyoshi Honda. (COURTESY PHOTO)

ence research and student training?

Speech science is not a single field of research, but it is multidisciplinary, combined with linguistics, physics, biology, and engineering. It is difficult to learn because basic knowledge of such wide fields is required. No single teacher could teach everything, and no student can learn the whole in a short time. Ideally, it is recommended to be instructed by a group of researchers from many fields. Many important studies have been done at specialized institutes, such as MIT, with resources of many outstanding researchers.

There is a lot to be done to translate experimental science results into industrial applications. What is the biggest challenge in this process?

The role of basic science is to contribute to promoting human happiness through applications of basic knowledge. However, the gap between basic and applied studies is always large. Results from basic studies are inevitably slow to come out, while application work

tends to demand immediate solutions. Learning historical work would suggest a hint: many new technologies are based on fundamental scientific discoveries, and this consensus should be shared by both parties of researchers.

Currently, speech technologies are most acutely developing in China as part of AI technology, but it is recommended that speech technology is to simulate uniquely- human functions in communication via the sounds generated by our body.

Could you please introduce one of your major achievements that has been widely applied?

My major contribution to the industry was the idea of a high-speed digital imaging technique. The story goes back to the 1980s, when I experienced high-speed cinematography for observing the voice production mechanism. This technique required a large-scale and clumsy system, and had been used for forty years since 1940. I hit upon an idea of using a digital image sensor and high-speed digital memory. I constructed a prototype of a high-speed recording system using a linear (1D) image sensor. Then, I proposed a new system with a 2D image sensor, and this idea became a main project of the institute.

The first system was invented in 1987, and the whole technology was transferred to a company to realize the first high- speed digital imaging system to be used in industrial investigation to record high- speed mechanical motions. At that time, digital cameras were about to enter the market. Nowadays, high-speed movie cameras are widely available from many companies worldwide as convenient instruments. Retrospectively, "inconvenience in research" was the seed of a new technology.

You were bestowed with the Chinese Government Friendship Award in 2020. What does this award mean to you?

I received the Chinese Government Friendship Award in 2020, and it is a great honor for me to be chosen among many others. This gift is for all my co-workers because I believe that it is awarded to all those who supported me to continue to work in China for ten years. I intended to contribute to development in China through my work with them by seeking something exciting to happen around us.

Expats Activities

Hubei Offers Better Service for International Talent

By ZHAO Xiaojing

Recently, a legal training workshop on international talent work was held in Wuhan. In the opening ceremony, Wu Jun, deputy director of the Science and Technology Department of Hubei province, pointed out that a better law-based business environment should be created to provide better service for internation-

al talent working in Hubei, which will speed up building an important national talent center and innovation hub.

This workshop was sponsored by Hubei Provincial Association for International Exchange of Personnel and Zhongnan University of Economics and Law.

Source: Science and Technology Department of Hubei province

Providing Foreign Experts with New Medical Service

By Jiang Xiangchao

In order to further improve the service for foreign experts and provide better support for their work and life in Jilin province, Jilin Science and Technology Department (Jilin Administration of Foreign Expert Affairs) organized a physical examination for foreign experts on August 31. Twenty foreign experts from eleven countries, including the U.S., Russia, Canada, France, Ukraine, Italy and South Korea, participated.

Jilin Science and Technology Department actively coordinated with the medical examination center to develop flexible and optional body examination services, which include basic health examination items and also optional items, according to individual physical condition, to meet their

health needs. During the check-up period, the hospital provided green channels for foreign experts, with professional interpreters helping them during the whole process.

In recent years, the department has been committed to serving foreign experts, including creating the "Foreign Experts in Jilin" Wechat public account, establishing two foreign experts' book rooms and seven foreign experts' reading corners, and organizing the "Foreign Experts Campus Tour" and a series of cultural immersion activities, in order to inspire them to further understand and integrate into Jilin, and continue to contribute intellectual support to the revitalization and development of Jilin.

Source: Science and Technology Department of Jilin province

Expats Gather to Celebrate Mid-Autumn Festival



By LIN Huifang

Shandong Provincial Department of Science and Technology held Mid-Autumn Tea Party for foreign experts. Expats gathered to experience the traditional culture of the Mid-Autumn Festival. In a festive and auspicious atmo-

sphere at the event site, they shared experiences living and working in Shandong and offered advice and suggestions for the high- quality development of Shandong's economy and society.

Source: Science and Technology Department of Shandong province

Green Energy Key to Addressing Climate Change

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Enhancing green energy - focused technical and vocational education is also on the agenda. South African Ambassador to China, Siyabonga C. Cwele, said, "China has quality training institu-

tions that can cooperate with African institutions to reduce the necessary skills gap," adding that affordable technology, innovation, and financial sharing are vital in shifting to a low-carbon economy and sustainable development.

Partnership Deepens Between China and LAC

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Flavio Salazar, Chile's minister of science, technology, knowledge and innovation, for example, said that having seen achievements through collaborations with China in climate change and satellites, Chile expects more in emerging technologies such as medicine and space. He called for further steps in enhancing international science and technology innovation and collaboration, to facilitate regional development and alleviate poverty.

Today, the trade volume between China and LAC has increased more than 17 - fold compared to 2001, the time when China joined the WTO. The forum continues to encourage both sides to explore the development potentials that can be mutually beneficial.

A memorandum of understanding on cooperation has been signed to facilitate the construction of a food innovation center for sustainable development between China and LAC countries on September 2.

Dongfeng Weir, A Marvel of Ancient Irrigation

Traditional Eastern Wisdom

By ZHAO Boyuan

Dongfeng Weir was built during the early Qing Dynasty and first named Pilu Weir. It was located on the left bank of Qingyijiang River, a tier three tributary of Yangtze River, in the Jiajiang county,

Sichuan province. Dongfeng Weir is regarded as an outstanding example of sustainable contribution to ecological conservation and development in its mission for a period of more than 350 years.

The design and construction of the weir exemplifies the ancient Chinese philosophy of harmony with nature. Dongfeng Weir consists of the 12 km main diversion canal, two secondary canals diverting into four by- canals, one

tunnel, eight aqueducts, 19 water - gates and other supporting facilities.

Before the construction of Dongfeng Weir, Jiajiang county was drought prone. However, since the completion of works in 1662, sufficient irrigation water supply has ensured agriculture stabilization and social development. Its irrigated area has expanded more than 10-fold from 467 hectares to 4667 hectares, covering five towns and 51 villages.

Nowadays, Dongfeng Weir is managed jointly by the local government as well as beneficiaries. The local administration is in charge of the maintenance of the general canals and branch canals, while the water user association is responsible for the sublateral canals. In 2014, Dongfeng Weir was recognized as a World Heritage Irrigation Structure by the International Commission on Irrigation and Drainage.

Daily Life Myth Buster

By Staff Reporters

Rumor A: Fatty liver only belongs to overweight people and a vegetarian diet can help against fatty liver disease.

Fact: People who are vegetarians, malnourished and overweight can all suffer from fatty liver. The metabolism of fats and the transportation between the liver and the blood require apolipoproteins as the "transportation." When there is not enough apolipoproteins in the body due to poor nutrition, especially when protein intake is inadequate, the liver is unable to transport the excess fat outward, thus leading to a fatty liver.

Rumor B: Ready made food is junk food, and only inferior ingredients are

used in its preparation.

Fact: Ready made food is not necessarily a bad option. It is food that is ready for consumption often with a long shelf life, having been prepared by someone else and sold to a consumer. Convenience is a major selling point for ready made food. For many busy people, cutting out cooking time, as well as the reduced need to shop for groceries or plan meals, can support a healthy and consistent diet. Moreover, the catering industry can save labor, space and cost by using pre- made dishes, and food safety is more assured. However, pre-cooked dishes have unbalanced nutrition with limited ingredients, excess fat and sodium, and frequent consumption of them is not beneficial to health.

Multi-Media



For more detailed information about Professor Pronkina Olga's views, please scan the QR code above.

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Wufushan HSR station in Jiangxi has brought new life to mountainous towns. The traveling time in the area has shortened considerably, and the local national forest park and other tourist spots become more accessible.

In the past decade, more than 20,000 kilometers of HSR lines have been built in rural areas and poverty-stricken areas, accounting for 80 percent of the country's total during the same period, allowing all Chinese people to benefit from the growth.

China's High-speed Rail Makes Monumental Advances

Upgraded operation for better services

Efficiency, convenience and intelligence are the goals of modern transportation. Along with rapid expansion, China's HSR has upgraded its operation to provide better services for passengers and cargo.

12306.cn, China's official website for purchasing railway tickets, is the world's largest of its kind. By April 2020, electronic tickets were available for all HSR and in-

tercity railways on China's mainland, requiring only an ID card to get onboard.

Fengtai Railway Station, built in 1895, reopened as the largest rail transport hub in Asia on June 20, 2022 after four year's renovation work. The station occupies 400,000 square meters and is able to host 14,000 passengers per hour at its peak, operating bullet and regular trains as well as subway lines.

"It's hard not to be impressed by the