

Welding Railways of Friendship

Dialogue

By LONG Yun & BI Weizi

Before meeting the Austrian railway expert Robert Geldner, we heard from his Chinese colleagues that he has both outstanding professional skills and a great personality.

Geldner, with a background of more than 20 years in industrial manufacturing technology, is an expert in material and welding technology. Currently, he is the welding director for CRRC Zhuzhou Electric Locomotive Company (CRRC ZELC), playing a pivotal role in contributing to rapid development of China's rail transit and propelling it onto the global stage.

Witnessing development of rail transit in China

Geldner first set foot in Shanghai 25 years ago, embarking on what would be a transformative career journey. "The first time I came to China was for a business trip in Shanghai to investigate and analyze Shanghai Line 1 Metro's operation performance," he told *Science and Technology Daily*. The trip led to a significant collaboration between Siemens and CRRC in 2001, where he served as a welding engineer.

Geldner's work in China has been marked by joint efforts and significant achievements. "I remember working on the welding aspects of the locomotives and metro vehicles, ensuring every weld met our strict standards for safety and durability," he said, highlighting the importance of attention to detail. This meticulous approach has not only enhanced the quality of the trains manufactured,



Mr Robert Geldner. (COURTESY PHOTO)

but also contributed significantly to the safety and reliability of China's rail system.

Among the projects he's been involved in, Geldner highlighted the development and rollout of several new locomotives and metro vehicles as especially memorable. "Seeing these projects through from the initial design phase to the final production and rollout was incredibly rewarding," he said.

Geldner is proud of the progress he has witnessed. "The evolution of China's rail industry over the past two decades has been extraordinary," he noted, adding that, "Being a part of this transformation has been one of the most rewarding experiences of my career."

He is also impressed by the remarkable manufacturing scale and supply chain capabilities within the sector in China.

"The yearly output for one CRRC manufacturing site is about 10 times

more than a major European manufacturing site," he said, citing metro vehicles. In his view, this difference stems from China's strong domestic market demand and the strategic impact of the Belt and Road Initiative.

Fostering spirit of craftsman

Geldner was particularly impressed by the sector's swift shift towards automation and digitalization, noting that CRRC has achieved a level of automation unmatched by any other global railway vehicle manufacturer.

The pursuit of perfection is deeply rooted in Geldner's belief in the importance of craftsmanship within the high-speed railway sector. "To foster true craftsmanship, one must lead by example, strive for perfection, and accept nothing less," he said.

For Geldner, the essence of craftsmanship lies in its power to drive innovation, making clear a distinction in the boundaries of speed, safety, and sustainability in rail vehicle de-

sign and manufacturing.

"Leading by example, insisting on perfection, and never compromising on any imperfection is necessary to foster craftsmanship," Geldner explained. He believes that the spirit of a craftsman is a driving force behind innovation in railway vehicle design and manufacturing, pushing the industry to be faster, safer and greener.

Exploring opportunities in China

Living in China, Geldner has found that cultural differences between China and Austria almost do not exist, appreciating the similar values of cherishing family bonds, hard work, and diligence shared by both cultures. He's particularly fond of the collective spirit and social warmth of Chinese society, from group dances in parks, to having parties with families and friends. Reflecting on his journey, Geldner shared a touching moment when his CRRC ZELC colleagues gifted him a set of Chinese technical books during a farewell ceremony.

His advice to foreign experts considering a career in China is pragmatic. He encourages them to explore opportunities in China, highlighting the country's world-class companies, financial resources for R&D, supportive government services for startups, and top universities.

In 2023, Geldner received the Chinese Government Friendship Award, the highest honor bestowed upon foreign experts who have made outstanding contributions to international cooperation.

This article also includes the contribution from ZHANG Jianyong from CRRC ZELC.

My China Story

A Dreamland for Study and Work

By BI Weizi and LONG Yun

In 2017, Rwandan student Samuel Ntakirutimana, currently a postdoctoral researcher at Tianjin University (TJU), came to Guangzhou for the very first time, excited at the prospects of starting a new life studying in China. He referred to Guangzhou, one of the largest cities in south China, as a "dynamic and vibrant place" with many skyscrapers and crowds of bustling people.

Since then, Ntakirutimana has been furthering his studies at TJU in Tianjin and gained a deep understanding of China. Actually, his curiosity about China started when he was growing up in his hometown in Rwanda and saw most of the products on market shelves labeled "Made in China." He wondered why everything was made in China and was eager to learn more about a country where almost anything in the world can be made.

Having spent seven years here, he has found that the country is now moving from "Made in China" to "Innovated in China." In the process, it has taken the global center stage as an increasingly important player in promoting the development of science and technology.

What has impressed him most during his stay in China is the Chinese philosophy of Confucianism, which espouses that human beings are fundamentally good, teachable and improvable through personal and communal effort. The cultivation of virtue in a morally organized world is also a Chinese way of life, aimed at promoting harmony in the family and society as a whole. Ntakirutima-

na also enjoys Chinese culture, Chinese cuisines and historical sites. "It's like a magical journey of exploration," he said, adding that he fell in love with spicy food at first taste.

Academically, as the eighth of nine children in his family, Ntakirutimana's passion for chemistry was ignited by his elder siblings' used chemistry textbooks. He found the confusing chemical symbols and experimental setup quite interesting. However, due to the limited lab facilities, his interest was just theoretical. Now at TJU, with easy access to world-class research facilities, he could dive into the sea of chemistry knowledge without any worries. "The Chinese education system is the best for me because it gives me the ideal environment to realize my dream," he said.

Ntakirutimana is aware that China has become one of the largest contributors to major scientific journals. "It is due to the fruit of China's policy and the rapid development of science and technology," he said, adding that China has invested a lot of money and effort in these areas, which is helping to build the country into a hub of talent. He tells his friends in Rwanda that support funds and scholarships at various levels are available for qualified students, making China a land of a thousand opportunities.

"China is developing on the right track, and I'm happy to be part of this big family," said Ntakirutimana. After completing the postdoctoral program, he hopes to continue to work as an academic researcher for expanding the horizons of his expertise and generating high-quality research.

Service Info

Foreigners to Enjoy Convenient Mobile Payments in China

By Staff Reporters

China is advancing its commitment to make mobile payments more accessible to foreigners, showing its determination to open up its digital economy at a higher level.

Zhang Qingsong, deputy governor of the Chinese central bank, People's Bank of China, said measures will be taken to ease the use of mobile payments for overseas visitors. This includes raising the single transaction limit on platforms such as Alipay and Tenpay from 1,000 to 5,000 USD and the annual transaction cap from 10,000 to 50,000 USD. Moreover, efforts are being made to simplify identity verification and streamline processes like enabling foreigners to link their international credit cards to Chinese mobile payment apps. The central bank has also directed payment institutions to introduce user-friendly features.

This move comes as China, having seen rapid growth in mobile payment adoption with an 86 percent penetration rate by the end of 2023, aims to tackle the challenges faced by first-time visitors. Foreigners often find it difficult to make payments using their bank cards or cash as many local businesses and service providers prefer mobile transactions.

Addressing these challenges, Hainan province in south China has initiated public testing of a program aimed at easing payment transactions for foreign tourists. The program, encompassing 238,000 businesses including major tourist attractions, enables transactions via VISA and MasterCard, along with electronic wallets like Apple Pay, through near-field communication-capable Android smartphones.

The integration of these measures is set to transform the payment experience for overseas visitors. It not only reflects the efforts of Chinese financial institutions to provide a convenient payment environment akin to that enjoyed by locals, but also indicates China's unwavering attitude of opening up.

Meanwhile, regulations have been strengthened to ensure privacy protection and the secure use of mobile payments, addressing concerns over the supervision of non-bank payment institutions.

According to Sun Yeli, minister of China's Ministry of Culture and Tourism, since overseas tourists are still accustomed to using POS machines, which many Chinese haven't used for a while, the authority is now planning to make them redeployed and upgraded to provide more convenient services to foreign tourists, including payment channels.

Traditional Eastern Wisdom

Black Tea: China's Gift to the World

By ZONG Shihan

Black tea originated in China and spread to the world. Today, it accounts for more than 80 percent of the global tea market.

Zhengshan xiaozhong or lapsang souchong is one of the earliest known varieties of black tea with a history of more than 400 years. Legend has it that it developed when a group of soldiers slept overnight on tea leaves freshly picked by farmers in the Wuyi Mountain, Fujian province. Their body temperature caused the leaves to oxidize, turning them dark. To salvage the tea and accelerate its drying time, the farmers smoked the leaves over pinewood, which made them turn black and oily.

Thus a new kind of tea - the earliest lapsang souchong - was produced.

Although the legend cannot be verified, the traditional production techniques of black tea have continued to this day.

It is a complex process, including picking the leaves, drying them, rolling, fermenting and smoking, all of which needs to be done in wooden buildings. Pan firing is a key process, which involves placing the fermented tea leaves in a pan heated to over 150°C and stir-frying them for a couple of minutes so that the pure and sweet aroma of black tea is maintained.

In the 17th century, black tea was taken to Britain and quickly became popular among the upper classes. In order

to obtain more tea, British colonialists introduced tea cultivation in India, leading to the emergence of Assam tea and

Darjeeling tea. Since then, tea has become an intrinsic part of people's lives all over the world.



A cup of black tea and tea leaves. (PHOTO: VCG)

An Essential Guide to Prevent Spring Allergies

Science Outreach

By ZONG Shihan

Every March, it is not only the time of the blossoming beauty of new life but also the season that brings discomfort to many through a range of allergies.

Currently, the prevalence of allergic diseases is rapidly rising and has been listed by the World Health Organi-

zation as one of the six major chronic diseases globally, severely affecting people's health.

Allergies can spring from a myriad of causes, including environmental factors, genetic predispositions, individual differences, and immune malfunction. During spring, allergies intensify due to dramatically fluctuating temperatures and a surge in allergens like pollen, dust mites and bacteria in the air.

Typical spring allergies include allergic rhinitis, skin allergies, and hay fever. When allergens enter the human body, the immune system may attack

normal cells, resulting in allergic diseases. Also, with the upward trend in temperature and intensifying ultraviolet rays in spring, our skin is subjected to increased irritation, culminating in aggravated skin allergies, especially on the face and neck.

Prevention is key in combating allergies. In particular, individuals susceptible to allergies should avoid contact with allergens to the greatest extent.

Moreover, wearing protective clothing and maintaining a clean indoor environment is helpful. Physical exercise can also play a significant role

in enhancing immunity to fend off allergens, thus minimizing the likelihood of allergic diseases.

If an allergic reaction occurs, the first step is to quickly leave the possible allergen environment and stay away from allergens that include, but are not limited to, pollen, dust, mites, pet hair, and cold stimuli. If the specific allergen cannot be identified, it is recommended to visit the hospital as soon as possible for a diagnosis. Based on the doctor's guidance, targeted drug treatments or even desensitizing treatments may be necessary to control allergic symptoms.



People shop at Haikou International Duty-Free Shopping Complex in Haikou, south China's Hainan province. (PHOTO: XINHUA)