

# More Highly Skilled Professionals Anticipated in China

By ZHONG Jianli

Chinese authorities have released a guideline on developing an optimized talent cultivation system for highly skilled professionals (HSPs), who are of great importance for the country to enhance its sci-tech innovation capacity and core competitiveness.

Titled *Opinions on Strengthening the Development of Highly Skilled Professionals in the New Era*, the guideline was released by the General Office of the CPC Central Committee and the General Office of the State Council.

The goal is that by the end of the 14th Five-Year Plan period (2021-2025), a more complete and improved system should be established for the development of HSPs, and the number of HSPs should account for one-third of the total

experts.

To realize the goal, a system that combines the efforts of society and the government should be established, in which industry, enterprises and vocational schools should play their due role.

Enterprises are encouraged to include the training of HSPs into their overall development plans, and develop more highly skilled professionals through the enterprise training center, HSP training base, craftsman's studio, and online learning platform.

The guideline calls for more efforts to nurture HSPs who are urgently needed. Focusing on building a digital China, actions should be taken to establish pilot zones for training digital experts, and set up training bases to improve people's digital literacy and skills. Cen-



The 2022 WorldSkills Competition Special Edition Goyang is held from October 12 to 17 in South Korea. Six professionals from the Chinese team win three gold medals and one bronze medal at the competition. (PHOTO: XINHUA)

tering on the rural revitalization strategy, plans are to cultivate rural artisans so as to protect and pass on traditional skills.

It is necessary to establish a HSPs pool by making use of new-generation information technologies, such as big data and cloud computing, according to

the document.

International HSP exchanges and cooperation are also encouraged. Skillful young students and graduates should be supported to participate in relevant international internship exchange programs, in order to promote mutual learning with other countries.

# Green Roadmap Laid Out for Civil Aviation Industry

By LI Linxu

As part of its effort to green and low-carbon transformation, China's civil aviation industry attaches great importance to innovation-driven green development.

Building a platform for sci-tech innovation is listed as one of the ten key actions for green development recently rolled out by Civil Aviation Administration of China (CAAC).

Besides sci-tech innovation, development of decarbonization roadmaps,

construction of policy and standard systems, and talent cultivation for green aviation, are high on the list, according to *2022 China Civil Aviation Green Development Policy and Action*.

Deployment of clean energy, airport area air and water quality improvement, and proactive participation in global governance on aviation and environment are also on the list.

Featuring green development actions, progress and experiences of China's civil aviation industry, the document has been submitted to the In-

ternational Civil Aviation Organization.

In 2021, China's civil aviation fuel consumption per ton kilometer was 0.309 kg, with accumulative reduction of 400 million tons of CO<sub>2</sub> emissions compared with that of 2000, said CAAC.

By 2025, CAAC is targeting a fuel consumption per ton kilometre of 0.293 kg and carbon emission per ton kilometre of 0.886 kg.

By 2035, carbon neutral growth for flight emissions is expected to be achieved, and more international cooperation on green aviation will be carried

out, said CAAC.

Statistics show that in 2021, the total transportation turnover of China's civil aviation reached 85.67 billion ton kilometre, with a fleet of 4,054 aircrafts in service.

China's civil aviation industry strives to reduce carbon emission intensity and enhance the role of sci-tech innovation, said CAAC, vowing that it will actively promote the application of new technologies, such as clean energy utilization, smart energy management system, and new air traffic control technology.

# Expanding One-stop Government Services Through Digitalization

By Staff Reporters

To upgrade government services, the State Council will promote one-stop government services for enterprises and individuals, according to a circular issued in early October.

Services that used to require multiple visits to multiple departments are now expected to be handled at one time. By the end of 2022, all local governments are expected to establish coordinated and integrated working mechanisms throughout their departments, the circular said.

By the end of 2025, it is planned to expand the coverage of one-stop services in all localities, by which time, more one-stop services are to be provided to enterprises and individuals.

For enterprises, items related to the starting of a business, permits for business operation, employee recruitment, and real estate registration should be accessed on a one-stop basis.

For individuals, one-stop services should be provided for newborn registrations, education, employment, marriage and childbirth, medication, assistance to people facing difficulties, ownership

transfer of secondhand houses, and retirement of enterprise employees.

Relevant procedures will be scientifically designed, and a set of standards and guidelines will be formulated and published, so as to improve the one-stop services model, the circular noted.

The application procedure will also be streamlined. The application materials needed in one-stop services will be simplified by combining multiple forms and sharing data among various digital systems.

More work is also required to improve the online service platforms and

offline comprehensive service windows. Local governments need to employ the national integrated government service platform to enhance interconnection of related online service systems.

At the same time, efforts will be intensified to develop mobile service platforms, such as APPs and mini-programs, so that enterprises and individuals can access related services more conveniently by themselves.

The efficiency of producing certificates will be improved. More digital notices of outcome documents and certifications are expected to be sent to applicants.

## Hi-tech Zones

# Nanotech Empowering Emerging Industries

By CHEN Chunyou & YE Qing

Nanotechnology is leading and empowering the development of strategic emerging industries, including new materials and medical treatment.

Guangzhou High-tech Zone (GHZ) is located in South China's Guangdong province. It actively promotes the original innovation of nanotechnology and accelerates its commercialization, aiming to become a national hub in these fields.

GHZ has inherent advantages in the industrialization of nanotechnology, whether in speed or scale.

In 2019, GHZ, in conjunction with the National Center for Nanoscience and Technology (NCNST), established the Guangdong-Hong Kong-Macao Greater Bay Area National Nanotechnology Innovation Research Institute (hereafter referred to as the institute), which is committed to promoting industrialization of nanotechnology achievements.

While China is a leader in basic research capacity on nanotech, its commercialization rate is not that high, said Zhao Yuliang, director of NCNST and academician of the Chinese Academy of Sciences.

The mission of the institute is to make up for the weak links in national technological innovation, and bridge innovation chains, forming a replicable model of commercialization of basic research results, and opening a path of industrial innovation for the country, said Zhao.

To date, it has produced many research achievements, such as 5G wave filter and inorganic nano fireproof materials, cultivated 12 high-tech enterprises, and holds 230 international and domestic patents, constructing the whole inno-

vation chain.

The nanotech has broad application prospects. "Conventional cancer therapies have side effects of killing normal body cells. With the help of DNA nanostructures, the medical DNA nanobots can deliver drugs to specific locations in the human body, and exert effects on targeted tumor cells," said Zhang Tian, assistant of the targeted tumor therapy project of the institute.

This kind of nanorobot remains in the body and then dissolves. With low toxic side effects, it has become popular in medical treatment development.

This April, National Development and Reform Commission approved the *Construction Plan for Creating a Nanometer Industry Innovation Hub in Guangdong-Hong Kong-Macao Greater Bay Area (GBA)*, to accelerate the building of GBA into a demonstration zone for nanotech innovation and application, and an internationally recognized first-class nano industry innovation hub.

The Guangdong-Hong Kong-Macao Greater Bay Area National Nanotechnology Innovation Base officially opened in GHZ this July. It will become the R&D headquarters of the institute, undertaking the function of nanotechnology R&D and incubation. It is expected that more than 2,000 nano research engineers will gather there in future, forming a strong capacity for nano R&D and incubation.

Nanotech, which has a close connection with advanced manufacturing, precision manufacturing and smart manufacturing, will help improve the technological level of the entire manufacturing industry and increase the competitiveness of high-tech industries in GHZ, said Zhao.



An aerial view of Guangzhou International Bio Island. (PHOTO: XINHUA)

# Shanghai Issues Regulations to Boost AI Development

By ZHONG Jianli

Local legislators in Shanghai have passed municipal regulations to further promote development of the artificial intelligence (AI) industry.

Taking effect on October 1, the *Regulations of Shanghai Municipality on Promoting the Development of Artificial Intelligence Industry* aims to boost open source sharing and advance sustainable innovation of the AI industry, one of the three pioneering industries that Shanghai hopes to develop.

The regulations make it clear that Shanghai will set up an AI strategic advisory committee, whose members will be composed of experts from universities, scientific research institutions, enterprises and other organizations, to provide advice on major strategies and decisions in AI industrial development. An experts' committee on AI ethics will also be established.

To promote the trading of AI algorithmic models, Shanghai Municipal Commission of Economy and Information Technology should guide relevant industry organizations in formulating a recommendation catalog of AI algorithm

models, so as to reduce the risk and improve the efficiency of algorithmic model trading, according to the regulations.

Another highlight of the regulations is that a systematic governance framework to maintain AI industry development and security will be created.

Considering the rapid evolution of the AI industry, relevant departments need to formulate, modify, or abolish corresponding regulations and standards, to stimulate creativity of various kinds of innovators. Different governance rules also need to be applied to high- and low-risk AI products and services respectively.

Meanwhile, the municipality will cooperate with other provinces and cities in the Yangtze River Delta region to build a computing hub for the country's national integrated big data network.

In addition, the regulations specify that the development and application of AI technologies should take into account the needs of the elderly, the disabled, women, minors and other groups. When providing AI-powered public services, it is necessary to set up alternatives for these particular groups.

# Greener Future Becomes Reality

From page 1

Remarkable results have been achieved in combating desertification, as 41 national comprehensive demonstration zones and 125 national desert (or stone desert) parks have been established.

To seek solutions from nature, Chinese government strives to find development opportunities while preserving nature, so as to achieve a win-win result in both ecological conservation and high-quality development.

New business models thrive with the improvement of ecological environment. According to National Forestry and Grassland Administration, forests at-

tracted six billion tourists from 2016 to 2019 in China. By 2025, the number of eco-tourism visitors is expected to reach 2.5 billion per year, and the total length of national forest trails will exceed 35,000 kilometers.

Meanwhile, the tourism boom helps to spur sales of local farm produce as well as handicraft products, and thus boosts the incomes of locals.

### Green lifestyle

A green and beautiful living environment is what people want for a better life. Infrastructure projects are carried out to improve people's livelihoods in both urban and rural areas, and the awareness of environmental protection

has permeated every corner of people's daily life.

Public transport has become the first choice for commuters. In 2021, the operational length of urban rail transit reached 8,736 kilometers, a 3.2-fold increase in the past ten years, and more than 66 percent of the city buses use clean energy.

Two-wheel option has seen more than 19 million shared bikes in service, with an average daily order volume of more than 45 million. Meanwhile new energy vehicles (NEVs) have registered explosive growth. By the end of 2021, the number of NEVs had reached 7.84 million, a 5.6-fold increase compared

with the end of 2016.

Online platforms are widely applied in public services to largely reduce the use of paper. Digital tickets are available for trains, buses and tour sites. For example, the well-known Palace Museum in Beijing has begun selling all its tickets online since October 2017.

In rural areas, China has improved the hygiene standards of toilets for more than 40 million households since 2018. In addition, more than 90 percent of the villages now have services of collecting and processing household waste.

A green and sustainable development of China is offering people a better life.

# Sci-tech Ties Develop BRI Countries

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According to China's Ministry of Commerce, there were 46 countries where overseas economic and trade cooperation zones were built by the end of 2021, with a total investment of 50.7 bil-

lion USD, creating 392,000 job vacancies for local people.

Six economic corridors were established, with the China-Pakistan Economic Corridor as the flagship project generating 38,000 jobs during its first phase,

over 75 percent of which were taken up by locals.

From a larger perspective, China has become the major trade partner of 25 BRI countries, and signed seven free trade agreements with 13 of them. The

total import and export value between China and BRI countries soared to 11.6 trillion RMB in 2021 from 6.5 trillion RMB in 2013, with an average growth rate of 7.5 percent year-on-year.

According to a report by the World Bank in 2019, if implemented fully, BRI could lift 32 million people out of moderate poverty — those who live on less than 3.20 USD a day.