

Promoting Integration of Sci-tech, Vocational Education

By CHEN Chunyou

Since the integration of education and sci-tech is essential for high-quality development, a good ecosystem has been established to advance this integration among vocational colleges by related departments and organizations, with the purpose of creating platforms for them to communicate.

In mid-May this year, a symposium focusing on promoting the integration of sci-tech and education by vocational colleges, was held in Weifang, Shandong province. Delegates shared their insights on this topic.

Lin Yu, deputy director general of the Department of Vocational and Adult Education from the Ministry of Education, said integrating sci-tech and education needs the overall deployment of education, science and technology, and human resources from departments at both the national and local levels.

Meanwhile, Xu Zhilong, editor-in-chief of Science and Technology Daily, called for efforts to be made to create an ecosystem for sci-tech innovation, which will meet the current challenges in attracting and nurturing innovative personnel.

In order to enhance the interaction



A symposium on promoting the integration of sci-tech and vocational education is held in Weifang, Shandong province in mid-May. (PHOTO: S&T Daily)

of vocational colleges with related industries and sci-tech resources, Lin suggested that high-quality innovation platforms and collaborative innovation centers could be built in industrial parks, enterprises and colleges.

In addition, vocational colleges should establish an open regional practice center based on local advantages, with the aim being to tackle technological challenges and improve technical processes and products, he said.

For instance, a research team, led by Guo Yong, an expert in applied chemical technology from Tianjin Vocational College, developed water filtration technology that relied on the organic materials extracted from tobacco stalks.

This technology was embraced by Tianjin Aozhan Chemical Technology Co., Ltd. and Tianjin Huaqing Huanyu Environmental Protection Technology Co., Ltd., generating an economic benefit of 150 million RMB.

Another success story is from Weinan Vocational & Technical College in Shaanxi province. Based on its animal husbandry and veterinary professional advantages, the college established a practice teaching base with a local enterprise, with the aim of reinforcing the industrial chain and cultivating specialists in breeding, forage nutrition, disease control and goat milk products development. Currently, the goat dairy industry has become a backbone industry in the province's Fuping county.

At the symposium, over 200 technological innovation and talent needs were put forward to higher vocational colleges. This will further expand matching opportunities for colleges and enterprises, and maximize mutual advantages.

New Demo Zones Unveiled for IPR Protection Hubs

Policy

By LI Linxu

As part of its efforts to build an IPR powerhouse, China has unveiled the first batch of cities and regions which were selected to construct demonstration zones for IPR protection.

Tianjin's Binhai New District, Shanghai's Pudong New Area, Jiangsu's Nanjing and Suzhou, and Sichuan's Chengdu are on the list.

Zhejiang's Hangzhou and Ningbo, Guangdong's Guangzhou and Shenzhen, and Anhui's Hefei are also on the list.

The ten cities and regions are tasked with comprehensively strengthening IPR protection and advancing high-quality development, according to a notice released by the China National Intellectual Property Administration (CNIPA).

They are urged to reinforce the overall deployment of IPR protection in light of local conditions.

Efforts will also be made to further reform the system and mechanism of IPR protection.

More resources will be made available to help build the demonstration

zones into IPR protection hubs, so as to drive the country's overall IPR protection to a new level, and further invigorate the vitality of innovation and creativity across society.

This is an important initiative to build a first-class business environment, said an official from CNIPA, adding that a series of policy measures, such as fast coordinated IPR protection and centralized review of patent applications, will be rolled out by relevant departments to support the construction of such demonstration zones.

In recent years, China has made historic achievements in the field of IPR protection. The country has given more prominence to IPR protection, introduced a series of major policies, actions and plans, and implemented a strict IPR protection system.

By 2035, China's IPR competitiveness will rank among the top in the world, according to a 15-year plan jointly released by the CPC Central Committee and the State Council in 2021.

The move to construct demonstration zones of IPR protection is a follow-up to implementing the spirit of the 20th CPC National Congress, which vowed to strengthen the legal protection of IPR, in order to establish a foundational system for all-around innovation.

Exchange & Cooperation

Innovative Youth Share a Future in Ningbo

By ZHONG Jianli

An initiative was launched to promote exchanges between young sci-tech experts of China and Central and Eastern European countries (CEECs), during the 2nd China-CEEC Forum for Young Science & Technology Talents in East China's Ningbo city on May 19.

Themed "Innovative Youth Share the Future," the forum aimed to accelerate innovation cooperation between China and CEECs through young sci-tech talents.

Sun Jian, speaking at the forum on behalf of Zhang Guangjun, vice minister of science and technology, said

young talent is the fresh blood for sci-tech innovation and global development, so it's necessary to deepen cooperation between youth in different disciplines from different countries.

Ivica Šušak, state secretary of the Ministry of Science and Education of Republic of Croatia, holds similar views. He said both China and CEECs are facing the three challenges of modernization, environmental protection and economic revitalization through technological innovation. International cooperation can make it easier for countries to obtain information and resources to solve these problems.

In his keynote speech, Li Xin, deputy director-general of the Depart-

ment of Foreign Expert Services of Ministry of Science and Technology (MOST), introduced China's efforts to facilitate young people in international exchanges by providing various kinds of programs, so as to tap the potential of global youth.

During the forum, the China-CEEC Innovation Cooperation Research Center announced an initiative to promote exchanges and cooperation of young sci-tech talent between China and CEECs, which proposes to foster mutually beneficial cooperation, build open channels of communication, enrich the global innovation network, and gather the power of youth for sci-tech innovation.

In addition, an award ceremony was held for winners of the 1st China-CEEC Youth Innovation and Entrepreneurship Competition. Earlier, 27 teams from China and CEECs participated in the final roadshows of their projects, covering three major fields of digital innovation, life and health, and advanced materials.

Zeljko Kanovic, an associate professor at Serbia's University of Novi Sad, whose team won the third prize, told *Science and Technology Daily* that it was a great experience cooperating with his Chinese partners and taking part in the competition, and he expects more exchanges between researchers of the two countries in future.



An aerial view of Tianjin's Binhai New District, one of the first batch of cities and regions selected to construct demonstration zones for IPR protection. (PHOTO: VCG)

90 Land Ecosystem Observation Stations to Be Established

By CHEN Chunyou

In recent years, the changes in ecological environment have adversely affected the survival of humankind. To help understand this trend, many countries have carried out comprehensive studies on the relationship between humans and nature, and between geosphere and biosphere, as well as their impact on global changes.

Researchers found that single observation site, and local and discontinuous observation data are no longer suitable for analyzing the development and changes of land ecosystems and their impact on global climate change. It is therefore necessary to establish a networked observation system integrating data from a single watershed, a region, and even a nation, so as to produce more precise data that can be used in research and decision-making.

According to a recent plan released by the National Forestry and Grassland Administration, China has decided to build an additional 90 land ecosystem observation stations, bringing its total number of such stations to 310 by 2025 and forming a network of national land

ecosystem observation stations with global influence.

The observation stations will be set up and distributed via eight categories, namely forest, grassland, wetland, desert, urban areas, farmland protected forest, bamboo forest and national parks, said the plan.

The plan outlines methods for strengthening the information collection and sharing capabilities of these newly built stations. More efforts will be made to improve basic infrastructure, such as observation instruments and facilities, and enhance the real-time transmission of data.

In addition, the observation stations older than 10 years will get support in upgrading old instruments, to improve their ability in automatic high-accuracy data collection and data transmission.

In response to major national and regional ecological issues, researchers will rely on these observation stations to conduct long-term positioning observations and research, and regularly release observational data and evaluation reports on the land ecosystem, so as to serve the high-quality development of the forestry and grass industry, said the plan.

China, CEEC Enhance Materials & Chemistry Collaboration

By ZHONG Jianli

To promote science, technology and innovation (STI) exchanges between China and CEECs, the China-CEEC Materials and Chemical Innovation Cooperation Network was established during a roundtable conference held in Ningbo city, on May 18.

"Thanks to the joint efforts of the sci-tech communities of China and CEECs, the areas of cooperation among relevant parties keep expanding over the decade. Fruitful results have been achieved in people-to-people exchanges, research platform building, joint R&D, enterprise innovation, as well as the transfer and application of STI achievements," said Gao Xiang, director general of China Science and Technology Exchange Center (CSTEC) when addressing the Round-table Conference

on Materials and Chemical Innovation Cooperation.

Ma Jianjiang, deputy director of the General Office of Ningbo Municipal Government, said materials and chemical industry is one of the key areas of cooperation between China and CEECs. Boasting strong advantages in such specialized fields as new chemical materials, new metal materials, and magnetic materials, Ningbo will facilitate more quality enterprises, research institutions, experts and scholars to achieve win-win cooperation in the city.

During the conference, the China-CEEC Materials and Chemical Innovation Cooperation Network was launched, with the aim of further promoting information sharing and international cooperation in the field of advanced materials and chemical engineering.

As this year marks the beginning of the second decade of STI cooperation between China and CEECs, the Network will be committed to jointly building innovation cooperation platforms for China and CEECs, and carrying out various kinds of academic or research cooperation and exchanges, including those for young scientists.

Neli Stoyanova Koseva, scientific secretary-general and first assistant to the president of the Bulgarian Academy of Sciences, said they "highly acknowledge the support of China to promote and encourage international cooperation among scientists from all over the world."

She added that innovations unlocked by materials and chemical research could contribute to achieving the United Nations Sustainable Development Goals (SDGs), such as zero hun-

ger, good health, clean water and clean energy.

Janusz Lipkowski, full member and former vice president of the Polish Academy of Sciences, highlighted the importance of innovation in realizing a country's development strategies, while looking forward to more pragmatic cooperation between China and CEECs.

During the dialogue session, representatives of institutions from different countries introduced their latest achievements in materials and chemistry, shared prospects for future international cooperation, and exchanged views on how to build joint research platforms and carry out more exchanges between researchers.

As the first event of the China-CEEC InnoShare 2023, the roundtable conference was hosted by CSTEC and Ningbo Science and Technology Bureau.

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The planted forage grass, such as sugar sorghum and triticale, are combined with local advantageous forage species like reeds and wild soybeans to form balanced nutrition formula for sheep breeding. Researchers also used livestock and poultry breeding manure, adopting highly efficient aerobic anaerobic dual-use microbial fermentation strains and automated fermentation devices to promote adequate compost fermentation, and achieved 100 percent uti-

lization rate of agricultural organic waste.

Returning bio-organic fertilizer to the field can promote the formation of soil agglomerates, while adding forage planting can quickly improve the basic arable strength of saline-alkali land. Using this model, in the course of planting grass for sheep, farmers can fertilize

grass with sheep manure and eventually maximize the utilization rate of ecological cycle model.

Bringing economic and environmental balance

Since 2012, Daan city in Jilin province has been ameliorating saline-alkali land by planting rice.

Saline-Alkali Land to Yield More Crops

"In nine out of 10 years this area is in drought. Evaporation is almost four times the amount of rainfall, causing accumulative effects of salts within the soil to surface," said Li Jinyou, a staff member at the Natural Resources Bureau of Daan city, adding that another serious issue is that no control system is

placed to prevent accumulated salt on the soil surface from spreading to other places and then causing wide salinization.

Researchers first levelled the uneven saline land, covered it with sandy soil and then started rototilling. They added soil amendments, washed the

whole field with water and then planted rice to cure alkali.

Once these unused saline alkali lands are transformed into arable land, it can be traded on a balance-of-occupancy land trading platform, backed by a national land and resources management system. These arable lands can then be sold through platforms to increase the region's budget, and the trading price is generally the sum of decades of income from the occupied land or surrounding arable land when it is fully planted.