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SPECIAL ISSUE

12 Projects Staged to Attract Talents

Chinese authorities recently released a detailed plan to implement 12 major talents projects defined by the National Medium and Long Term Talents Development Planning (2010-2020), aiming at the following objectives:

1) "Innovation Talents Program". Led by the Ministry of Science and Technology, the program is designed to by 2020 establish 100 scientist's studios, produce 3,000 young and

middle aged tech innovators, finance 1,000 qualified entrepreneurial talents on an annual basis, establish 500 innovation teams in the priority areas, and build 300 innovation role model training and demonstration centers.

2) "Young Talents Development Program". The program is created by the CPC Central Committee Organization Department to nurture 2,000 top-notch young talents under the age of 35, screen out 1,200 top-notch students from renowned research universities on an annual basis, and select 2,000 outstanding high school and college graduates to further their training at renowned overseas universities.

3) "Capacity Building of Business Management Personnel ". The program is sponsored by the State-owned Assets Supervision and Administration Commission to bring out by 2020 500 entrepreneurs with global vision, strategic thinking, innovative spirit, and business ability, and nurture 10,000 high caliber business management personnel who are good at strategic planning, capitalization, human resources management, accounting, and legal matters,

4) "High-Quality Educator Training Program". Initiated by the Ministry of Education, the program is meant to train 20,000 school teachers, disciplinary leaders, and principals on an annual basis, and nurture educators, famous teachers, and disciplinary leaders for primary and secondary schools (including kindergarten), vocational schools, and universities.

5) "Famous Cultural Talents Program ". Led by the CPC Publicity Department, the program is created to fund 2,000 renowned specialists in the areas of philosophy, social sciences, journalism, publishing, radio and television, culture and arts, cultural heritage protection, cultural business management, and cultural technologies, allowing them to be part of major researches, projects, performances, creative researches, exchange and shows, monographs publication among others.

6) "Health Talents Program". Initiated by the Ministry of Health, the program is designed to by 2020 foster high caliber medical personnel, securing special funds for related earmark researches. Efforts will be made to standardize residency training, and bring out 50,000 resident physicians for different disciplines. Meanwhile, some 300,000 general practitioners will be trained under the program.

7) "High Caliber Overseas Talents Program". The program is sponsored by the CPC Central Committee Organization Department to implement a range of related programs or projects, including a "Thousand Talents Program" at the central level, short and long term innovation projects, humanities and social sciences projects, a "thousand young talents program", a "thousand foreign experts program", and business pioneering projects among others. It plans to attract high caliber overseas talents to establish their own businesses in China in 5 to 10 years.

8) "Professional Knowledge Updating Project". The project is a large knowledge updating campaign established by the Ministry of Human Resources and Social Security to train 100 million senior specialists in 12 areas, including equipment manufacturing, information technology, biotechnology, and new materials. Meanwhile, efforts will be made to establish a number of national further education centers for professionals and technical personnel.

9) "Highly Skilled Personnel Program". Created by the Ministry of Human Resources and Social Security, the program will by 2020 bring out 3.5 million new technicians and one million senior technicians, making the total number of technicians and senior technicians in

the country reach 10 million in number. Meanwhile, it plans to build 1,200 training centers to bring out more highly skilled personnel.

10) "Modern Agriculture Talents Program". The program is initiated by the Ministry of Agriculture to finance, by 2020, 300 high caliber researchers in the area of agriculture, and to support 10,000 personnel who have made outstanding contributions to diffusing advanced agricultural techniques.

11) "Human Resources Support Program for Remote, Poverty, Ethnic, and Veteran Revolutionary Areas". Sponsored by the CPC Central Committee Organization Department, the program is designed to guide, by 2020, 100,000 outstanding teachers, doctors, scientists, technical personnel, social workers, and cultural workers to work in or provide services to the remote, poverty, ethnic, and veteran revolutionary areas on an annual basis. Efforts will also be made to annually train 10,000 urgently needed talents for those areas.

12) "College Graduates Training at Grass-Roots Program". The program is created by the CPC Central Committee Organization Department to work on a range of sub-programs for college graduates being a village official, creating ad hoc positions for rural school teachers, free teacher education and training, free medical students training, college graduates working in the rural areas, and student volunteers providing services to the western region.

INTERNATIONAL COOPERATION

WAN Inaugurated the GEO Secretariat in China

October 28, 2011- WAN Gang, Chinese Minister of Science and Technology, inaugurated the opening ceremony of the Group on Earth Observations (GEO) Secretariat in China at the National Remote Sensing Center. WAN said as the largest and most authoritative inter-governmental organization in the area of earth observation, GEO is a global leader in the development of earth observation technology. He added that being part of GEO activities creates strategic opportunities for China to be a leader in the development of earth observation technology, allowing Chinese authorities, both at the central and local levels, to share earth observation systems and resources. He hoped that China will render more contributions to GEO's activities, and that GEO Secretariat in China will play a role in organizing and guiding GEO's activities in China, enhancing the capacity building of China's integrated earth observation system by taking full advantage of GEO's international cooperation channels and data sharing mechanisms.

CAO Jianlin, Chinese Vice-Minister of Science and Technology, is authorized by the Chinese State Council to Co-Chair the Group on Earth Observations, and Chinese Ministry of Science and Technology will be an implementer of GEO activities on behalf of the Chinese government, fulfilling its rights and obligations as a GEO member state. Physically located at the National Remote Sensing Center, the GEO Secretariat in China is established by

Chinese Ministry of Science and Technology for the purpose. The Chinese Secretariat will provide a full support to GEO activities in China, under the leadership of a coordination panel jointly established by Chinese Ministry of Science and Technology and GEO.

New China-Canada Joint Committee Meeting



A new round of China-Canada S&T Joint Committee meeting was held on October 31, 2011

in Vancouver. CAO Jianlin, Chinese Vice-Minister of Science and Technology, and Alain Beaudet, Canadian Institutes of Health Research President, co-chaired the meeting. Representatives from government agencies, universities and industry in both countries attended the meeting. Both sides briefed the other side of the latest science and technology policies and development planning in the country, and reviewed the accomplishments achieved since the signing of intergovernmental scientific and technological cooperation agreement between the two countries. Both sides confirmed the project lists for the third round inter-governmental S&T cooperation, listened to the reports made by three working groups on agriculture, food, and biological products, information and communication technology, and civil aviation, and reached a consensus on staging cooperation in the areas of life sciences and clean technology in the future.

3,000 Rice Germplasms to Resequence

The Chinese Academy of Agricultural Sciences, the International Rice Research Institute, and the Beijing Genomics Institute jointly announced on November 15, 2011 in Shenzhen that they will resequence 3,000 core rice germplasms collected from different parts of the world, and release the results to the world in 2012.

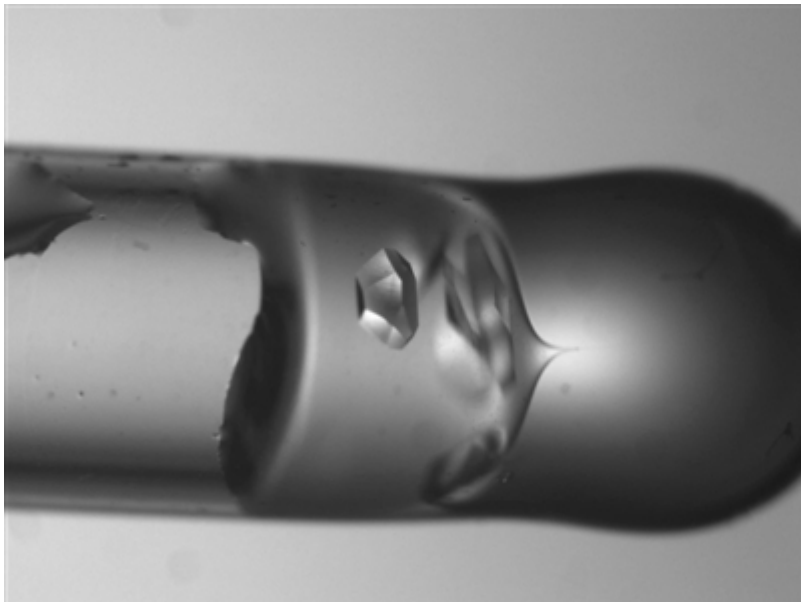
On the same day, a ceremony was held to inaugurate the opening of a Shenzhen Biological Breeding Innovation Institute under China Academy of Agricultural Sciences, and to ink a strategic cooperation accord between the International Rice Research Institute and the new Institute. In addition to a team of stockholders, including the Shenzhen Municipal Government, China Academy of Agricultural Sciences, and Beijing Genomics Institute, some international bodies, including the International Rice Research Institute, the International Maize and Wheat Improvement Center, and the Gates Foundation, also secured their support to the new Institute. The Institute is made up of an Agricultural Genomics Center, a Rice Molecular Breeding Center, a Wheat and Corn Breeding Center, and an International Training Center. Scientists will work on species-based genome-wide selection and multi-cycle selection based polymer modification, using the genome sequencing results of 10,000 core rice germplasms provided by the International Rice Research Institute, in an attempt to breed out more new rice varieties featured with high yield, strong resistance, and high quality.

RESEARCH AND DEVELOPMENT

Protein Crystallized in Space



Scientists are observing the organisms taken out from the returned spacecraft.



Crystals formed by egg white lysozyme in space.

A "black box" housing 17 experimental samples aboard Shenzhou VIII spacecraft safely arrived in Beijing on November 18, 2011. The ground control shows that during the flight, the payloads and scientific experiments aboard the spacecraft worked smoothly in orbit. According to a plan, the black box will be delivered to the destined laboratory within 7.5 hours after being removed from the spacecraft. Experts will assess the samples in the black box in a preliminary manner, before allowing them to be further analyzed by individual project teams.

It is reported that the space based life science experiments jointly staged by China and Germany involved 33 samples under 17 projects, of which 10 came from China, 6 from Germany, and 1 from a joint project, covering four major areas, including basic biology, space biotechnology, biology in advanced life support systems, and space radiation

biology. Samples tested in the experiments are mainly plants, animals, and microorganisms, including blisters snails, nematodes, bacteria, and viruses.

The website of China manned space project (<http://en.cmse.gov.cn/>) recently publicized the project names of the 17 scientific experiments. This is the first international cooperation staged by China in the area of space based scientific experiments.

Tiangong-I into Long Term Mode

A Tiangong-I Management Committee said on November 20, 2011 that Tiangong-I, a Chinese made target spacecraft currently running in an orbit 382km above the Earth, has entered a long-term management mode, and will work on a range of scheduled scientific experiments. LIU Junze, head of Beijing Space Flight Control Center Spacecraft Management Division, said the first successful rendezvous and docking mission is now followed by a long-term management that will cover the following three missions:

- 1) Orbit maintenance and flight attitude realignment. Tiangong-I will see some variations in altitude, as the result of the changing space environment. One has to keep the spacecraft in the desired orbit on a regular basis. In addition, a range of operational modes have to be switched between three-axis stabilization and yaw maneuver flight, in line with the changed light conditions, ensuring energy balancing and flight safety.
- 2) Regular inspection. One has to keep an eye on the working conditions of the onboard equipment and subsystems, ensuring them in a good working condition.
- 3) Stage scientific experiments in line with the ground application system, gathering more scientific data.

3D High-Yield Corn Modeling

Financed by the National Natural Science Foundation, a study team, led by GUO Xinyu, a research fellow at the Chinese Academy of Agricultural Sciences Institute of Agricultural Information, proposed the design and framework to build a digital management system for growing corn, based on the relationship between crops, environment, and technology.

Researchers developed the digital corn management system to simulate the plants' daily growth, and predict their dynamic yield and quality, based on a combined range of elements, including nitrogen pollution control, growth simulation, and plant management. They also developed visual design tools, making the three-dimensional visual simulation and online applications possible.

GUO told reporters that the three-dimensional visual model is built on a string of advanced elements involving agronomy, computer science, geographic information systems, and simulation models, created a digital tool for the corn production system, covering dynamic prediction, decision-making, management, design, and analysis. Researchers have

realized the visualization of the aerial parts in the first place, and will further work on other parts, including roots, root caps, crop growth, and yield, making it a visual platform for agronomists and breeders to analyze and evaluate corns in an individualized or grouped manner, so as to raise the plants' yield and quality.

NEWS BRIEFS

Two New Satellites Launched

At 08:15, November 20, 2011, China blasted off two satellites (Innovation-03 and Experiment-IV) aboard a CZIIC launch vehicle, from the Jiuquan Satellite Launch Center. Innovation-03 is a small experimental satellite designed mainly to collect and transmit data for the applications in the areas of water resources, hydrology, meteorology, electric power, and disaster monitoring. Experiment-IV, the fourth of its kind in the series, is launched to work on space related technical experiments and environment probes.

China's First Petaflop Computer in Operation

"Nebula", China's first supercomputer with a physically measured performance exceeding the petaflop level, was put into operation on November 16, 2011 at the National Supercomputing Center in Shenzhen. The supercomputer will find applications in an array of areas, including new energy development, new materials making, natural disaster early warning and analysis, weather forecasting, geological exploration, industrial simulation among many others. The Supercomputing Center will mainly work on two technical fields: high-performance computing and cloud computing, providing strong technical support for major national strategic planning, digitized innovation cities, and cloud computing industry, and making more computing resources available to basic research, scientific computing, and major scientific and technological discoveries.

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