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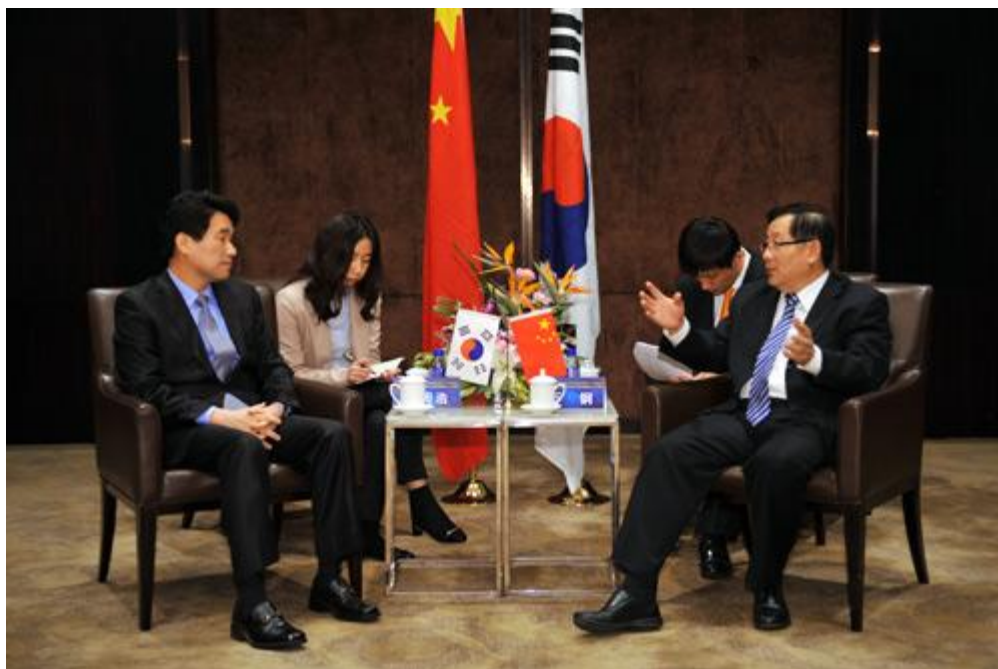
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INTERNATIONAL COOPERATION

China-ROK Joint S&T Committee Meeting

The Eleventh China-ROK intergovernmental Joint S&T Committee Meeting, co-chaired by WAN Gang, Chinese Minister of Science and LEE Ju-Ho, Republic of Korea Minister of Education, Science and Technology, was held on 23 November 2011 in Beijing. At the meeting, the two sides reviewed and endorsed the joint

research projects to be implemented during the period of 2011-2012, and made new/nano-materials, renewable energy/smart grids, and biotechnology the priority joint research areas for the period of 2012-2013. The two sides exchanged views on the development of the Joint Research Center and associated personnel exchange. Both sides also reached a consensus on strengthening the collaborations in the field of fusion energy research. WAN and LEE jointly inked a bilateral accord on cooperative nuclear fusion researches, on behalf of the respective agency.



Both sides agreed that the two countries have great potentials in staging mutually beneficial and pragmatic cooperation in the areas of science, technology, and innovation, as both countries believe that scientific and technological progresses and innovation makes a major support in dealing with crises, promoting prosperity, and securing a sustainable development, and that such collaborations are in the common interests of both countries. The coming year will mark the 20th anniversary of establishing the diplomatic ties between the two countries. Both sides agreed to take this opportunity to review what have been accomplished in the past and work on more collaborations for the future, allowing scientific and technological cooperation between the two countries to enter a new phase. As part of the anniversary celebration, MOST and MEST will co-sponsor a range of activities, including a China-ROK innovation forum, a China-ROK science and technology show, and Chinese scientists' visits to the ROK.

China-Africa S&T Cooperation Forum



A China-Africa S&T cooperation forum, sponsored by Chinese Ministry of Science and Technology, was held on 1 December 2011 in Beijing. Some 130 participants from 42 African countries, the African Union, research institutions, and foreign missions in China, attended the meeting. As part of China-Africa Cooperation Forum and an important part of China-Africa Partnership, the meeting was initiated to implement the Sharm El-Sheikh Action Plan (2010-2012) adopted at a China-Africa Cooperation Forum meeting. With "innovation, cooperation and development" as the theme, the Forum meeting was aligned with two major topics on "S&T strategy and policy" and "S&T park planning".



At the opening ceremony, WANG Zhigang, Chinese Vice-Minister of Science and Technology, launched an action to improve African people's livelihood through science and technology means, under which China will build a hospital made up of clinic modules in each African member state of China-Africa Cooperation Forum, strengthening and supporting the collaboration between China and Africa in improving people's livelihood. In addition, the Forum released a "China Proven Technology Manual" and a "China National High-tech Parks" brochure, in a bid to facilitate the transfer of China's proven technologies to African countries, sharing with African countries China's practices and experiences in promoting the development of science and technology parks, and enhancing African countries' S&T innovation capacity.

At the meeting, the Chinese side spoke highly of the traditional friendship and friendly cooperation between China and Africa, and said China is willing to share with Africa its experience and accomplishments in developing science and technology, enhancing the scientific and technological capability of African countries, and allowing science and technology to play a bigger role in securing the sustainable economic and social development in the locality. The African side was deeply encouraged by the accomplishments achieved by China in the area of science and technology, wishing China to achieve greater success in the area, and to have more S&T cooperation and exchanges with China. Both sides agreed that efforts shall be made to deepen the traditional friendship, expand mutually beneficial cooperation, and strive to achieve common development and prosperity, on the basis of the existing cooperation, in an effort to deal with global challenges under a new situation.

RESEARCH AND DEVELOPMENT

First Mongolian Genome Map

Inner Mongolia Agricultural University announced on 18 December 2011 that it has produced a genome map for the Mongolian, the first of its kind in the world. According to a briefing, the genome map is scientifically important to revealing the genetic information of the Mongolian race, such as genome structure, genetic characteristics, and evolution, allowing people to predict, diagnose, and treat diseases in a targeted manner. Under the project, researchers sequenced the full-genome of the healthy male lines of the 34th generation of Genghis Khan family, and produced a relatively complete genome-wide map of the Mongolian race, with a sequence depth and level that has reached an internationally advanced level.

Researchers are planning to sequence the genome of more Mongolian samples, in a bid to build a genetic database for the Mongolian, making the data available to future medical studies.

The first Mongolian genome map completed by Chinese scientists is a major part of China's "Mongolian Genome Project. Launched in 2011, the project, designed to study the genomes of some 200 Mongolian individuals, has been jointly implemented by Inner Mongolia Agricultural University, Inner Mongolia University for Nationalities, and Beijing Genomics Institute (Shenzhen).

Visualized 3D Marine Platform

"Digital Ocean", one of three major projects listed under a national special program for offshore survey and investigation, was kicked off in 2007, and completed in December 2011. The project has established a digital marine trunk network and a remote video consultation system covering 18 nodes in 11 coastal provinces, autonomous regions, municipalities, and at national marine management authorities, research institutes, and operations. It has also completed the construction of a digital marine center with 23 sub-centers, consolidated marine data and historical marine resources derived from the special program, and established the largest marine information platform with the largest coverage in the country.

Equipped with a multidimensional data acquisition system covering land, sea, and air, the platform is designed for visualized expression, inquiry, and spatially overlapped analysis of diverse information on marine environment, natural geography, and marine management, which creates a new approach to deepen people's knowledge of oceans, marine development, and marine management in a 3D manner.

In addition to the three-dimensional visualization system, Digital Ocean has developed two other systems, including an iOcean that was officially released in 2009 to the public, and iOcean@touch for smart phones. Also derived from the project is an integrated digital ocean management information system consisting of 8 sub-systems, including maritime management, island management, environmental protection, marine economy, marine law enforcement, disaster prevention and mitigation, maritime interests, and marine science and technology.

NEWS BRIEFS

China Launched Nigerian Satellite

At 0041 December 20 2011, China successfully blasted off a Nigerian Communication Satellite (Nepalese Star 1R) aboard a CZIII B launch vehicle, from the Xi'chang Satellite Launch Center. 26 minutes after lifting off, the ground control in Xi'an received the data showing that the satellite was separated from the carrier rocket, and entered a geosynchronous transfer orbit at a perigee altitude of 203 km, and an apogee of 42,007 km, with an orbital inclination at 24.8 degrees.

Nepalese Star 1R, developed by China Space Technology Research Institute, part of China Aerospace Science and Technology Corporation, is built on the Dongfanghong IV platform, covering the central, west, and southern parts of Africa, eastern and central Europe, and some part of central Asia, mainly for communication, broadcasting, internet access, distance education, broadband multimedia, and navigation.

The launch was the third of its kind China has made for its international clients this year, including two Pakistani communication satellites (1R and W3C). It is reported that China will provide 4-5 launch services to its international clients in 2012.



3D Mapping Satellite

It is reported from a national geographic mapping meeting convened on 19 December 2011 that a 3D mapping satellite (resource-III) that took four years to build will be launched in next January. The satellite, officially approved as a project in March 2008, will be blasted off aboard a CZ-4B carrier rocket from the Taiyuan Satellite Launch Center. The satellite will work in a sun-synchronous circular orbit at an altitude of 506 km, covering the regions within 84 degrees north and south latitudes in a seamless manner. It will produce a China homeland picture and a global image every 59 days, enjoying the top image resolution and mapping precision in the country.

Designed for both mapping and resource survey purpose, the new satellite will provide quality services for land resources survey and monitoring, disaster prevention and mitigation, agriculture, forestry, water conservancy, ecological environment, urban planning and construction, transportation, and national defense among others.

A range of new satellites, including gravity satellite, radar satellite, and resources satellites, have been planned for future development, in a move to secure a stable and reliable source of satellite data for geographic survey and mapping under different climatic conditions.

New Meteorological Planning

Not long ago, China Meteorological Administration (CMA) and National Development and Reform Commission (NDRC) jointly released a Meteorological Development Planning for the period of 2011-2015. The plan says efforts will be made to strengthen the utilization of cloud born water resources. At present, China modifies weathers mainly through anti-aircraft guns and rockets. During the 12th Five-year period (2011-2015), CMA will raise the proportion of aircraft based rain seeding, and will, in collaboration with NDRC, establish a number of regional centers or areas for weather modification, in a bid to achieve technical innovations and allow more cloud born water resources to be utilized to alleviate water shortages in the country.

In addition, the planning lists out a range of key indicators for improving meteorological services, including a public weather information coverage of 95% or more, a public weather service satisfaction at 85% or above; a severe weather warning 15 to 30 minutes in advance; a 24-hour rain/clear sky and heavy rain prediction accuracy at 85% and 22% respectively, and a 24-hour temperature forecast accuracy at 70% or above; and a 24-hour typhoon forecast error margin confined to 100 kilometers or less.

More Missions for Tiangong-I

Tiangong-I, a Chinese made target spacecraft, started regular detection missions, including hazardous gases detection, from 0952 December 15, 2011 after shifting its flying attitude from yaw to three-axis stability under the precise guidance of the ground control in Beijing. The target spacecraft is currently working smoothly on a range of planned missions under a stable attitude.

The target spacecraft enter a long-term operation and management phase on 20 November 2011, and has been controlled and tracked by both the ground control in Beijing and space-based monitoring stations. During the period, the ground control in Beijing has sent 1,295 commands to and injected 305 frames of data into the target spacecraft, secured the proper exchange of information between the spacecraft and the ground control.

National Laboratory for Computer Architecture

A national key laboratory was inaugurated on 9 December 2011 at Chinese Academy of Sciences Institute of Computing Technology to study computer architecture. As the only national laboratory working on computer architecture, the new lab, sitting on the compound of CAS Institute of Computing Technology, will mainly work on the basic part of computer architecture and system design methodology. According to SUN Ninghui, head of both the new lab and the Institute, the lab has defined five directions for future studies, including high-end computer architecture and design methodology, micro-architecture, compiler and programming, VLSI and fault-tolerant computing, and non-traditional computer architectures, in an attempt to establish a computer architecture research and experiment platform in line with international standards, providing support to computer architecture related basic researches.

On the same day, the lab opened its door to the public, showing the latest findings derived from the laboratory study. Most of the findings have been published in top international journals or delivered at major international conferences, which raised the Institute's visibility and influence in the area of computing architecture.

National Tire Equipment Lab

A national lab was inaugurated on 18 December 2011 in Qingdao to develop advanced tire equipment and materials. The rubber tire lab is jointly established by Qingdao S&T University, MESNAC, and Sailun Tire, under the National Development and Reform Commission's initiative, in a bid to take advantage of the combined strength of the University in tire material research and MESNAC/Sailun Tire in application development and associated industrialization.

The Lab is designed to develop advanced tire making technologies, novel tire making materials, tire recycling equipment and technology, energy saving technology, and industrial information system among others, creating an open platform to address the uniformity, energy consumption, and efficiency problems of tire making industry through experiments and analysis.

The establishment of the laboratory will raise China's technical level of tire making, improving tire quality, enhancing transportation security, and reducing resource consumption and pollution emissions.

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