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SPECIAL ISSUES

Blueprint for Campus S&T development

Not long ago, the Chinese Ministry of Science and Technology and Ministry of Education published an outline for the development of national campus S&T parks during the 11th Five-year plan period (2006-2010), in line with the missions defined by the National Outline for Medium and Long Term S&T Development Planning (2006-2020), and by the Education Renaissance Action Plan (2003-2007).

During the 11th Five-year plan period, the development of national campus S&T parks shall following the principle of "scientific planning, rational distribution, coordinated deployment, and coordinated development", focusing on a coordinated planning and rational distribution. Efforts will be made to work out a development modality agreeable to China's socioeconomic development, raising the quality and returns of national campus S&T parks, and rendering due contributions to enhancing China's proprietary innovation capacity, facilitating commercial applications of high technologies, and promoting the regional economic development and industrial technological advancement.

The Outline proposes that by 2010, the number of national campus S&T parks shall reach 80 in total, with a 10-million square meter incubating area for some 15,000 high tech businesses. Major breakthroughs and technological leaps are expected in the area of information, biology, and advanced materials. Efforts will also be made to foster some 200 high tech businesses of strong international competitiveness, and a number of proprietary high technologies and products, with patent applications reaching at least 10,000 in number.

Industrial Incubator Accreditation

The Chinese Ministry of Science and Technology has recently issued a by-law for accrediting and managing industrial incubators (high tech business service center). The following are among the basic conditions that a national high tech business service center shall comply with:

1) Having a clearly defined business direction, and in agreement with the second condition followed;

2) Having a rational organizational structure, with 70 % possessing an academic degree at or above college level, as a proportion of the management team;

3) Possessing an operating area of at least 10,000 square meters. In the case of a special technology development center, an operating area of 5000 square meters is allowed. Two thirds of the operating area shall be made available for incubating enterprises;

4) Fully-equipped, and well functioned, providing diverse services, including trade, fund raising, information, consultation, marketing, training, technology development, and international cooperation;

5) Regulated governance with a strict financial management system, full statistical data for both the incubator and incubating enterprises for at least two consecutive years, as require by the Ministry of Science and Technology;

6) Enterprises under incubation shall reach at least 80 in number, at the premises of the incubator. In the case of a special technology development center, incubating enterprises shall be at least 50 in number;

7) Graduated enterprises shall be at least 25 in number on a combined basis. Both graduated and incubating enterprises shall create 1000 employment opportunities. In the case of a special technology development center, graduated

enterprises shall be at least 15 in number on a combined basis. Both graduated and incubating enterprises shall create at least 500 employment opportunities;

8) Incubator shall possess a starting or incubating fund worth RMB 3 million, having a normal business tie with venture capital and guarantee firms;

9) Having operated at least for 3 years, with fine business records;

10) A special technology pioneering center shall have a technical platform or pilot experimental base at its disposal, having the capability of technical consultation, management, and training in the area.

China S&T Development Report for 2005

China S&T Development Report (2005), an almanac compiled by the Ministry of Science and Technology, has recently rolled off press. The Report has recorded the strategic deployments, objectives, and major tasks that China (not including Hong Kong, Macao, and Taiwan) has implemented during the 10th Five-year period. It has an accurate description of China's major decisions and policies concerning S&T development, and makes an objective mirror reflecting China's S&T activities, major accomplishments, and key progresses achieved. The Report presents brief analysis and discussion of China's future S&T development tendency, rationales, and strategic deployment, based on the National Outline for Medium and Long Term S&T Development Planning (2006-2020), and the national S&T development plan for the 11th Five-year period. It is an informative document for evaluating and understanding China's S&T activities, especially its proprietary innovation capacity, and its blueprint for the future development.

INTERNATIONAL COOPERATION

S&T Minister Met American Guests

XU Guanhua, Chinese Minister of Science and Technology, met on December 12, 2006 with Michael Leavitt, U.S. Secretary of Health and Human Services and his party. XU said to his counterpart that the Ministry of Science and Technology (MOST) would, in collaboration with the Chinese Ministry of Health, foster an agreeable climate for cooperation between the two nations in the area of health and medical care. China will also facilitate the collaborations of research institutes, universities, and industry of the two nations in the area. XU briefed American guests of major endeavors defined by the National Outline for Medium and Long Term S&T Development Planning （2006～2020）. He said that a range of missions and tasks defined by the Outline, especially new drug development, and AIDS and hepatitis prevention and control, are the shared problems that both China and US will have to address. In this context, XU proposed to deepen the collaborations on AIDS prevention and control, emerging and recurring infectious diseases, complementary, alternative and traditional medicine research, vaccines, tissue and organ engineering, and regenerative medicine, on the basis of a memorandum of understanding undersigned between the two nations on cooperation in the field of health and medicine. He invited US scientists to be an active part of the international collaborative project on traditional Chinese medicine research, initiated by China. Chinese side also proposed to add cancer, bird flu, AIDS prevention and control, obesity, gerontic diseases, and studying traditional Chinese medicine using modern technologies to the collaborating list, in an attempt to benefit more people with traditional Chinese medicine.

MOST and U.S. Department of Health and Human Services inked a memorandum of understanding on cooperation in the field of health and medicine, during the visit of Chinese President HU Jintao to the United States in April 2006. An Letter of Intent on International Collaboration in Complementary, Alternative, and Traditional Medicine Research was also signed between the MOST, State Administration of Chinese Traditional Medicine, China Academy of Chinese Medical Sciences, and US National Institutes of Health. MOST, in collaboration with the Chinese Ministry of Health, State Administration of Chinese Traditional Medicine, published on July 4, 2006 an outline for international collaboration in traditional Chinese medicine research, demonstrating the Chinese government endeavor to foster an international network for the area, and promote the modernization of traditional Chinese medicine.

China-US Food Safety Seminar

Co-sponsored by the Chinese Ministry of Science and Technology and US Department of Energy, a China-US food safety seminar was held December 4-5, 2006 in Nanjing. Participating in the seminar were some 30 representatives from MOST, General Administration of Quality Supervision, Inspection and Quarantine, US Department of Agriculture, Chinese Center for Diseases Control and Prevention, Nanjing Agriculture University, and Yurun Group. Participants discussed a range of issues concerning food safety and associated responding measures and technological development.

At the meeting, JIA Jingdun, Deputy Director of MOST Rural Science and Technology, reviewed major activities and progresses made in food safety, since the signing of an accord between China and the United States in 2002 on cooperation in agricultural science and technology. He said scientists of both nations should strengthen collaborations, and develop more areas and modalities for such collaboration. He also proposed to establish a joint center for monitoring meat quality and safety.

Dr. Mohammad Koohmaraie, Director of U.S. Meat Animal Research Center, attended the seminar on behalf of US Department of Agriculture. He briefed the meeting of the structures and functions of DOA Agricultural Research Service, and expressed that the US side is willing to discuss shared food safety concerns with Chinese counterparts, sharing technologies and experience achieved by both nations in the area.

BAO Junkai made a keynote speech on China's food safety and associated management system, on behalf of the General Administration of Quality Supervision, Inspection and Quarantine.

Some 10 experts from China and the United States made lectures at the Nanjing Agriculture University, on the status quo of food safety, measuring and control techniques, and associated management. Participants also discussed the contents and modalities for future collaborations, and the possibility of establishing a joint center for

monitoring meat quality and safety.

China-Australia Agriculture Seminar

Under the co-sponsorship of the MOST Department of Rural Science and Technology and Australian Centre for International Agricultural Research, a seminar was held on December 14, 2006 to discuss increasing farmers' income and restoring the grassland ecosystem. Participating in the seminar were researchers from China and Australia, Vincent Hudson, counselor (agriculture) of Australian Embassy in Beijing, and WANG Guanglin, Director Assistant of Northern Asia Opearation, Australian International Institute of Agricultural Research.

At the meeting, Prof. Kemp from CHARLES STURT University, Dr. Takahashi with the University of Tokyo, Prof. Jones at the Orange Institute of New South Wales, and Prof. WU Jianping of Gansu Agriculture University talked about their latest efforts in restoring the grassland ecosystem and increasing farmers' income in Gansu Province, along with suggestions on enhancing the efforts in the future. Chinese and Australian experts also discussed the issues concerning supporting a sustainable development in the west.

China-Japan 4G Meeting

Not long ago, the second China-Japan joint working committee meeting for 4G mobile telecommunication was convened in Hainan, China. Participating in the meeting were FENG Jichun, MOST Director of High Technology, CHEN Zhimin, Deputy Director of MOST High Tech Center, and officials from the Japanese Ministry of Internal Affairs and Communications.

At the meeting, both sides reported the latest development of B3G/4G in the respective country, along with suggestions on future development and standardization. Both sides agreed that the third meeting shall take place in 2007 in Japan. Both Chinese and Japanese governments will support the collaboration between China FuTURE and Japan mITF, in an attempt to promote the global development of B3G. To expand collaborative activities between the two nations, both sides agreed to promote the involvement of forums, industry, research institutes, and universities at the next meeting, along with a range of topics, including long term objectives of new generation mobile telecommunication, technology development, and standardization.

RESEARCH AND DEVELOPMENT

15-Year Safe Nuclear Operation

As of December 15, 2006, the Qinshan Nuclear Power Plant, the first localized commercial reactor in the country, applauded a safe operation for 15 consecutive years. It has produced numerous WANO indicators reaching the middle level of commercial nuclear power plants in the world, with some hitting an internationally advanced level. In 2004, the nuclear plant ranked 78th place among some 250 pressurized water reactors, in terms of WANO performance indicators, with 5 out of nine major indicators being at an internationally advanced level.

In the past 15 years, the Qinshan Nuclear Power Plant has created fine economic returns and social benefits. As of the end of November 2006, the reactor has produced 28.5 billion kilowatt hours of electricity on a combined basis, with a sales revenue worth RMB 8.7 billion, and taxes paid exceeding RMB 1.7 billion. In the 15 years, the operation has realized a reduced emission equivalent to 200,000 tons of sulphur dioxide, and 30 million tons of carbon dioxide.

During its 15-year operation, the nuclear plant has registered no accident at class two level or above. It has achieved effective "three wastes" emissions, with a maximum hazardous emission being only at 2% of the national standard, and a minimum of several counts per 100,000, as a proportion of the national standard.

China's Smart Card Chain

China has established a well-functioned industrial chain for producing smart cards, consisting of chip design and manufacture, module and IC card making, read/write application software development, system integration, comprehensive solutions, and technical service.

Chinese made card readers and writers have covered almost all application areas, from desktop to hand held, and from touch or non-touch, enjoying laudable stability, reliability, performance, and external appearance. Chinese made IC card chip has witnessed a steadily raised technical level from design to processing. The development of IC chip design has spurred up the development of integrated circuit design in the country. Of the top ten domestic IC designers, nearly half made their fortunes through IC chips.

In the area of chip making, a number of domestic vendors have been taking orders from both domestic and overseas clients, with a raised capability from 0.35 microns to 0.18 microns. China also enjoys an array of domestic vendors good at chip packaging, with some of them having a daily capacity of one million pieces.

Controlled Electricity Efficiency

Thanks to 6-year painstaking efforts and collaboration with the Institute of Electrical Engineering, part of the Chinese Academy of Sciences, and the Department of Electrical Engineering at Tsinghua University, researchers with Guangdong Duopule Electricity Efficiency Co. Ltd. have rolled out a product featured with automatic low-voltage phase controlled electricity efficiency. The new product works on the principle of realizing the frequency conversion based electricity efficiency, through improving the external environment of machine. Researchers developed high performance digital circuits and proprietary automatic control chips. The new product can automatically convert or handle external voltage and feedback signals, allowing a best operation under a low voltage.

The new product has been granted with three utility and invention patents. Test

conducted by the General Administration of Quality Supervision, Inspection and Quarantine, shows that the new product saves electricity by 15%~55% on a daily basis, extending the service life of machine. The product has been put into bulk production, and is available in the market.

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