Delegation of the European Union to China

April 2011

RESEARCH AND INNOVATION HIGHLIGHTS IN CHINA[1]

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EDITORIAL

Dear colleagues,

April was a lively month for EU-China S&T cooperation with the first Sino-EU Symposium on Nanotechnology in Consumer Products in Beijing and the launch of the first "twinning" health project (fundamental glycol-proteomics) in Hangzhou.

To help you get abreast of the main developments of the EU-China research and innovation contacts and relations of the month, we have incorporated, from this issue of *the Highlights*, a new column on major EU-China events.

In China, April witnessed the celebration of the 100th anniversary of Tsinghua University, one of the country's most prestigious research-oriented universities, which is also a very active participant in the EU's Framework Programme (in 14 FP7 projects since 2007). The celebrations of the University – the "cradle" of many outstanding scholars, successful entrepreneurs and distinguished statesmen, with the alumni of 170,000 that include one-fourth of the academicians of the Chinese Academy of Sciences and one-fifth of the academicians of the Chinese Academy of Engineering – brought back to campus its students of several decades and raised high attention of the State leaders, many of whom are graduates of the University itself. "People of the Month" column of *the Highlights* provided more focus on Tsinghua.

The Delegation is now in full gear preparing for the upcoming visit of the Commissioner for Research, Innovation and Science Mrs. Máire Geoghegan-Quinn, later in May in Shanghai and Beijing. The Commissioner will meet her Chinese interlocutors as well as European and Chinese experts in the domain of research and innovation. Following the successful convening of the 9th Joint Steering Committee of the EU-China S&T Cooperation Agreement in March, the visit of the Commissioner will consolidate the dialogue with her Chinese counterpart in the Ministry of Science and Technology, and explore the prospect of EU-China cooperation in the S&T field at a time when innovation is high on the political agenda of both sides. Meetings with other Chinese counterparts are also on the agenda of the Commissioner's programme.

Best regards for the sunny season,

Philippe Vialatte
Head of S&T and Environment Section

EU-CHINA R&I EVENTS

First Sino-EU Symposium on Nanotechnology in Consumer Products

As a follow-up of the establishment of a Memorandum of Understanding between the EC-JRC Institute for Health and Consumer Protection (IHCP) and the Chinese Academy of Inspection and Quarantine (CIAQ), signed in June 2010, the first Sino-EU Symposium on nanotechnology in consumer products was held 14-15 April 2011 in Beijing. The first Sino-EU Symposium was organised for the purposes of: 1) Exchanging information on research activities carried out in China and the EU addressing identification and detection of nanomaterials in composite materials and toxicological effects of nanoparticles; 2) Gaining a fuller picture concerning the activities in the field of standardisation of methods; 3) Identifying the priorities for further research on nanomaterials at a global level as well as the major challenges facing risk assessment and detection of nanomaterials in consumer products for the purposes of consumer protection. The symposium was attended by approximately 60 persons drawn from Chinese research institutes and representatives from government organisations. Five speakers from the EU were also present. The discussions were extremely fruitful and prompted lively debate, with many areas of future collaboration between China and Europe being identified.

Health project officially launched

The EU-China health project "fundamental glycol-proteomics: technology and clinical operations" was officially launched by the EC Directorate General for Research and Innovation and the Chinese Ministry of Science and Technology in Hangzhou on 15 April. Dr. Philippe Vialatte, Head of S&T and Environment Section of the EU Delegation to China, and Mr. Tomasz Dylag, Scientific Officer from the Directorate General for Research and Innovation, attended the kick-off event and delivered speeches. The cooperation is an endeavour designed as a "project level coordination", procedure by which the EU and China launched two separate calls on the same subject (functional glycol-proteomics), selected each a project in accordance with their respective rules and required the EU and Chinese projects to work together. On the same occasion, the third International Forum on Proteomics was held which gathered around 800 specialists from China, EU, USA, Canada, Japan and other countries.

Presentation of the 12th Five-year Plan at the EU Delegation

Mr. Chen Linhao, Deputy Director General of International Cooperation Department of the Chinese Ministry of Science and Technology, gave a very comprehensive presentation of the 12th five-year plan for the S&T development at the EU Delegation to the EU and EU Member States Science Counsellors and Representatives of the EU R&D organisations. According to the presentation, spending is set to continue to soar under the new plan. Significant increases are expected not only from central government and provincial level spending but also from improving the financial framework conditions for R&D and innovation. S&T developments will gain strategic importance in contributing to the economic shift China expects in the next 5 years while facing both domestic challenges of energy consumption, environmental damage and an aging population as well as the international financial crisis. China seeks to boost indigenous innovation through strategic emerging industries and to foster basic and frontier research. China will open its national programmes to foreign R&D and will continue to cooperate internationally. The plan also seeks to reform S&T management systems and to home-grow and attract overseas innovative talents.

EC Commissioner for Research and Innovation to visit China

Mrs. Máire Geoghegan-Quinn, the Commissioner for Research, Innovation and Science of the European Commission, will pay an official visit to China in late May. During her visit, the Commissioner is planning to meet her Chinese counterparts in research and innovation and explore the potential and prospect of the research and innovation cooperation between the EU and China, at a time when research and innovation are on very high political agenda of both sides.

POLICIES AND PAPERS

China's top political stresses indigenous innovation

China's top political advisor, Jia Qinglin, chairman of the Chinese People's Political Consultative Conference (CPPCC) National Committee, stressed the role of scientific and technological innovation during a visit to a bio-science company in Beijing, CapitalBio Corporation. Jia urged the company to boost scientific and technological innovation and to attach great importance to new technologies and products. He urged the company to expand cooperation with world class bio-science companies, and broaden its international market so as to become an international brand. (Source: central government web)

Advisers want food safety laws to be better enforced

Members of Counsellors' Office of the State Council and the Central Research Institute of Culture and History called for the government to strengthen law enforcement and supervision to reverse the trend that has seen a growing number of scandals involving food safety. Wen told a host of newly appointed members that he regards the food safety issue as a matter of morality and cultural building. Wen's words resonated with the members who said the issue even goes beyond morality "especially the law enforcement departments and supervisory bodies." (Further details in source: People)

China to implement new Internet regulation: MIIT

China will implement a new regulation to further control the online industry after a dispute between two Chinese Internet giants, Tencent and Qihoo 360. Zhang Feng, director of the Department of Communications Development of the Ministry of Industry and Information Technology (MIIT) said. The move is part of a bid to strengthen the management of the country's online market and promote the healthy and orderly development of the industry. Zhang said the ministry is also working on an online industry development plan to be implemented during the country's 12th Five-Year Plan period (2011-2015). (Further details in source: central government web)

Institute for Engineering Strategies

Institute of Engineering Development Strategy, co-founded by the Chinese Academy of Engineering and Tsinghua University, was set up to study and provide strategic solutions for engineering development on April 18, 2011 in Beijing. The Institute is designed to support the decision-making processes of major national engineering projects. (Further details in source: MOST)

NDRC publishes new industry restructuring plan

National Development and Reform Commission of China (NDRC), the top economic policymaking body published a blueprint for industrial restructuring, providing a list of sectors the government should promote, curb or ban in coming years. The list, which calls for increased industrial upgrading, domestic innovation and service sector development, will provide an important guide for Chinese regulators as they steer investment, levy taxes and make financial, land and trade policy. Newly added industries targeted for expansion include new energy, city rail infrastructure, public safety and emergency response equipment. Sustainable development emerged as a central theme of the revision: the outline marked clean production, energy conversation, emissions reduction and recycling technologies for expansion in almost every category of manufacturing. (Further details in source: China.org)

China drafting special law on climate change

China's chief negotiator to UN climate change talks said that the country is drafting a special law dedicated to climate change and will explore a low carbon development path suitable to China. Xie Zhenhua, vice chairman of the National Development and Reform Commission (NDRC), said China attached great importance to the legislation of climate change and has already published relevant regulations concerning the management of Clean Development Mechanism (CDM) projects and international cooperation on climate change. The vice chairman said that China will draw on experiences from other countries in climate change legislation and deepen cooperation with its global partners. (Further details in source: China.org)

Japan nuclear crisis prompts 'urgent' drafting of new law

The drafting of a nuclear energy law is high on the State Council's legislation agenda for this year as people raise questions about the safety of reactors following the nuclear crisis in Japan. "The Ministry of Industry and Information Technology will gather a team of drafters and a team of experts together to draft the law for review by the State Council's Legislative Affairs Office before passing it to the Standing Committee of the National People's Congress," said the senior member of the China Nuclear Energy Association. (Further details in source: China Daily)

VOICES AND OPINIONS

60% think low of experts and scholars

Nearly 60% of Chinese people see a decline in the authority of scholars and experts, according to a survey of 2,186 people conducted by China Youth Daily. As to the reason behind the decline, 74% think that there are too many "bogus experts" and 68% believe many experts did not parade their sense of social responsibility and just speak for some interest groups. What kind of experts and scholars are needed? 89% of those surveyed believed social conscience should stand first in the must-have personalities, followed by professional quality and social knowledge.

The survey also shows that 55% of people hoped experts would face up to their mistakes and be responsible with their words. (Source: China Daily)

Property rights linked to innovation

China must do more to protect intellectual property rights or its economy will remain too reliant on labor-intensive industries and its ability to innovate may wither away, warned Xi Xiaoming, vice-president of the Supreme People's Court, who encouraged courts nationwide to continue cracking down on violations of intellectual property rights and sales of counterfeit goods. "After 30 years of fast development, China should see technological innovation playing a bigger role in its economy. But severe infringements of intellectual property rights are detracting from the motives (behind innovation)," Xi said. Kong Xiangjun, president of the Supreme People's Court's Intellectual Property Tribunal, said protecting intellectual property rights in China now costs more than violating them. (Further details in source: China Daily)

Vice-Premier urges tough action in IPR cases

Vice-Premier Wang Qishan demanded that local authorities step up efforts to crack down on infringement of intellectual property rights as he presided over a work conference held for the national anti-piracy campaign. The ongoing campaign takes aim at pirated publications, DVDs, software and other illegal products, as well as infringement of trademarks and patents. (Further details in source: China Daily)

Strategies of innovation

Protection of intellectual property rights could help China grow its own technologies and domestic brands. Whether or not China can realize its ambitious strategy of developing itself into an innovative and creative nation will be decided to a large extent by whether it can boost the competitiveness of its home-grown technologies, its cultural power and the influence of domestic brands. The country needs to take more concrete and effective measures to strengthen protection of its intellectual property rights (IPR) and innovation. More effective measures need to be taken to raise the proportion of the country's scientific research input to its gross domestic product (GDP), which was only 1.7 percent in 2010, slightly higher than the world's average of 1.6 percent. China must also strive to convert more of its scientific and technological research into practical applications. (Further details in source: China Daily)

PEOPLE OF THE MONTH

Chinese president inspects Tsinghua University on eve of centennial anniversary

Chinese President Hu Jintao visited Tsinghua University on 20 April, ahead of its centennial anniversary. He urged the university to further improve its teaching quality and scientific research capabilities. Hu visited the university's history exhibition hall, met with professors and new graduates, inspected the university's Network Research Center and the center for structural biology. Hu urged Tsinghua to strive to build itself into one of the world's leading universities by further improving its research capability and teaching quality. He also asked the university to foster more talent and contribute more intellectual support to the country's development. The President joined his old classmates in the Department of Hydraulic Engineering, where he had once studied and worked for nine years, more than 40 years ago. (Further details in source: central government web)

Tsinghua marks century of learning

Institutions of higher education should place quality at the top of their agenda and enhance innovation and research, President Hu Jintao said as Tsinghua University marked its centennial on 24 April. Hu praised the university's cultural traditions, history and contribution to the nation and noted its efforts to continuously improve the quality of its education. He also called on students to be ambitious and diligent and strive to build a brilliant future for the nation. Originally founded in 1911 as a training school for students aiming to study abroad, Tsinghua University is one of the country's prime institutions of higher learning. It has fostered many outstanding scholars, successful entrepreneurs and distinguished statesmen. It has more than 170,000 alumni, who have made a significant contribution to the development of the country, across a number of fields. Tsinghua's alumni also include Wu Bangguo, chairman of the Standing Committee of the National People's Congress, Vice-President Xi Jinping, and former premier Zhu Rongji. Many renowned scientists are also Tsinghua alumni. One-fourth of the members of the Chinese Academy of Sciences graduated from the university as did one-fifth of the members of the Chinese Academy of Engineering. However, Tsinghua has faced criticism in recent years for its "utilitarian" approach. (Further details in source: China Daily)

Tsinghua's performance amazing: Princeton's representative

Tsinghua's performance in the past years was amazing, said Gordon Wu, representative of Princeton University. "It's amazing that only in about 32 years, Tsinghua gets to be where it is today…Tsinghua has started from a low level, but now, there is all sort of increase in the enrollment, increase in the quality of the students, and in quality of the faculty. " Wu also said Tsinghua, like all the universities, has a long way to go to achieve its goal to become one of the world top universities. "You must have research programs; you must have good professors, but what's more important is that you must have top quality students to come in," he said. "But it can't do it just overnight," said Wu by citing a Chinese saying, "It takes ten years to grow trees, but a hundred years to rear." (Source: People)

Tsinghua's foreign academic connection

Tsinghua University, one of China's most renowned universities, celebrated its 100th year in April. During its history, the university has shaped the lives of many people who have made great contributions to China in different fields. The more than 10,000 foreign teachers and visiting fellows have played a very important role in the university's 100 years' of development.

About 50 percent of the foreign experts today are in the university's science and technology departments, 43 percent in arts, and 7 percent in law and medical science. Since 1998, it has sought the services of about 100 leading scholars from different fields - and up to 2008, 70 percent of them were from overseas. (Further details in source: China Daily)

Past boasts quietly forgotten at Tsinghua's centennial party

Tsinghua University's 100th anniversary in April marks a milestone – but not a success. In 2001, Tsinghua invited 10,000 international leaders and scholars to a ceremony marking its 90th anniversary, vowing that by the centennial "Tsinghua University would be among the world's premier universities." A decade later, Tsinghua sits anywhere from 36th to 58th place by most international rankings. Respectable, but still far from the Harvards and Oxfords of the world. Subjective as they may be, international rankings tend to agree that Tsinghua is doing fine in things money can buy, like the quality of facilities and faculty. But the assessors also agree on the shortcomings, and Tsinghua has two big ones. The first is the international aspect, and the second on academic citations. *The author is a master's candidate of Global Business Journalism at Tsinghua University.* (Further details in source: Global Times)

Nobel Prize Winner in Physics Prof. Klaus Von Klitzing awarded CAS Einstein Professor

Nobel Prize winner in physics Klaus Von Klitzing, director of the Max-Planck Institut fuer Festkorperforschung in Stuttgart, was awarded Einstein Professor of Chinese Academy of Sciences during his visit to Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences (SINANO) from April 8th to 12th. (Further details in source: CAS)

Top Chinese Scientists Honored with Naming of Minor Planets

Four minor planets have been named after top Chinese scientists with the approval of the International Astronomical Union (IAU). Minor Planet No. 17606 was named after Wu Mengchao, an academician of the Chinese Academy of Sciences (CAS) and a renowned expert who established a unique system of liver surgery in China; Minor Planet No. 48636 was named after Huang Kun, a former academician of the CAS and an internationally acclaimed physicist and one of the founders for the country's solid state and semiconductor physics industries. Minor Planet No. 90825 was named after Li Zhensheng, an academician of the CAS and a renowned wheat growing expert who initiated wide-hybridization between common wheat and Thinopyrum ponticum. Minor Planet No. 30991 was named after Min Enze, an academician of the CAS and the Chinese Academy of Engineering, and a petrochemical catalyst expert. All four scientists previously won the State Top Scientific and Technological Award, the country's top science prize, for their outstanding contributions to scientific and technological innovation. The four minor planets were discovered on Sept. 28, 1995 by the Beijing Schmidt CCD Asteroid Program at the Xinglong observation station in northern China. (Further details in source: CAS)

SCIENTIFIC ACTIVITIES

Health

New Mode for Regulating Innate Immune Response

CAO Xuetao, an academician of Chinese Academy of Engineering, and head of State Key Laboratory for Medical Immunology, and coworkers from the Second Military Medical

University Institute of Immunology, Zhejiang University School of Immunology, and Chinese Academy of Medical Sciences reported that intracellular MHC class II molecules promote TLR-triggered innate immune responses by maintaining activation of the kinase Btk. (Further details in source: MOST)

Food, agriculture and fisheries, biotechnology

Scientists sequence genome of crested ibis

Chinese scientists have sequenced the genome of the crested ibis, an achievement which may aid efforts to protect the endangered bird. By understanding the genetic make-up of the crested ibis, researchers may be able to explain the species' low birth rate and high mortality rate, said Li Shengbin, a scientist with Xi'an Jiaotong University. Researchers from the university and the Beijing Genomics Institute (BGI) in Shenzhen, China's flagship genome center, sequenced DNA that was separated from 1.5 ml of blood taken from a two-year-old bird. (Further details in source: Xinhua net)

China's agriculture sector faces rising costs in 2011: think tank

China's agriculture sector is expected to face increasing pressures from rising costs in 2011, according to China's Rural Economy (2010-2011) released by the Chinese Academy of Social Sciences (CASS). The CASS report also predicted grain prices, especially of corn, to continue to trend upwards in 2011. Further, the report urged greater efforts to stabilize agricultural production costs, by increasing supply and tightening market regulations. (Further details in source: People)

Human Lactoferrin Producing Goat Cloned

XinXin, a goat cloned to produce human lactoferrin, the first of its kind in the country, was born on April 9, under a project jointly initiated by the Nanjing Agricultural University and Shandong Yinxiang Weiye to breed high yield GM goats. (Further details in source: MOST)

Tsinghua University establishes Center for Structural Biology

The Center for Structural Biology of Tsinghua University (THU-CSB) was established on April 16, 2011. Professor Binling Gu, President of Tsinghua University, Member of Chinese Academy of Sciences, with Professor Yigong Shi, founding Director of the CSB, unveiled the plaque for CSB. CSB represents an integrative program with principal investigators from School of Life Sciences, School of Medicine and Department of Chemistry. The missions of CSB are to cultivate young talents in molecular biology and to address challenging biological problems with an integrated approach. Now there are 15 independent laboratories and about 170 post-doctoral research associates, graduate students and technicians. (Further details in source: CAS)

China mulls new health food regulation

A new health food regulation, designed to strengthen supervision and control of industry irregularities, is expected to go into effect before the end of this year, said an official with China's top food and drug safety watchdog, the State Food and Drug Administration (SFDA). The regulation concerns the "examination, approval, production and market supervision of health food" and will help authorities deal with problems such as use of illegal additives, incorrect media reports and exaggerated promotion. (Further details in source: China Daily)

Optimal Algorithm for Molecular Evolution Study

A study team at Huazhong Agriculture University has made progresses in molecular evolution studies. The finding will facilitate the use of evolution models. To the researchers who are not good at functional genetics in the area of molecular evolution, the new method is able to help infer the possible gene functions. Researchers have published the algorithm on a web site (http://obsm.ncpgr.cn), allowing more people to use it. The program is easy to operate, and calculation is technically acceptable. The algorithm facilitates in-depth study of genetic functions and associated information. (Further details in source: MOST)

Information and communication technologies

China to boost integrated circuit sector as "state strategy"

China will boost the integrated circuit (IC) sector at a "state strategy" level over the next five years through 2015, Yang Xueshan, vice minister of industry and information technology has said. The sector will produce a series of chips with independent intellectual property rights. Under the plan, development of about 30 percent of the IC products used by China's major whole-set enterprises would occur domestically, Yang said. (Further details in source: Xinhua net)

China's Huawei sales up 24 pct in 2010 thanks to overseas expansion: annual report

Sales revenue of China's Huawei Technologies rose 24.2 percent year on year to 185.2 billion yuan (28.4 billion U.S. dollars) in 2010, the telecom equipment maker said in its annual report. Huawei attributed the growth mainly to its fast-growing overseas markets, with sales there rising 33.8 percent year-on-year to 120.4 billion yuan. Huawei's overseas sales accounted for 65 percent of the company's total, 5 percentage points higher than in 2009, while domestic sales registered relatively moderate growth of 9.7 percent, according to the annual report. (Further details in source: People)

Home Made PCRAM Chip

CAS Shanghai Institute of Microsystem and Information Technology recently rolled out a proprietary phase-change memory (PCRAM) chip. The novel chip combines the strength of mainstream memory gadgets, including DRAM, SRAM and FLASH, enjoying numerous merits, including super miniature performance, non-volatile, long cycle life, fine data stability, and low power consumption. It is believed an optimal solution for the next generation non-volatile memory technology. (Further details in source: MOST)

First Superconducting Substation in World

A Chinese made superconducting substation, the first of its kind in the world, was officially put into grid operation on April 19, 2011 in the Baiyin City, Gansu Province. Stationed at a national hi-tech industrial park in the city, the substation is designed with an operating voltage of 10.5kV, housing an array of superconducting power devices, including 1MJ/0.5MVA high-temperature superconducting energy storage system, 1.5kA three-phase high temperature superconducting current limiter, 630kVA high temperature superconducting transformer, and 75-meter long 1.5kA three-phase AC HTS cable. The new system has noticeably enhanced the reliability and

safety of the grid network, with an improved power supply and reduced system losses/floor space. (Further details in source: MOST)

Earth System Simulator

A supercomputer capable of a hundred trillion floating-point operations per second, jointly developed by Tsinghua University and Inspur, was put into official operation on April 15, 2011. The new system is the highest performance computing platform operating at a higher learning institution, or the fastest supercomputer applied in modeling the Earth system in the country. The two parties inked on the same day an accord to jointly develop an Earth system simulator. (Further details in source: MOST)

China's New Body Scanner Debuts, Promises Privacy

China's newly-developed body scanner with independent Intellectual Property Rights (IPR) made its debut, promising to quickly detect nonmetal, destructive objects while better protecting privacy. The security check equipment was developed by a group of experts mostly from Beijing's Tsinghua University. (Further details in source: CAS)

China Develops Phase-change RAM

The Shanghai Research Institute of Microsystems Technology at the Chinese Academy of Sciences – working with foundry chipmaker SMIC and Microchip Technology – has announced it has developed phase-change random access memory (PCRAM) that is based on Chinese intellectual property. The 8-Mbit memory, scheduled for mass production later this year, is intended for use as a replacement for NOR flash in applications such as mobile storage and RFID. (Further details in source: CAS)

China to improve rural broadband coverage over next five years

China is planning to expand broadband Internet coverage to more of its vast rural areas during the country's 12the Five-Year Plan period (2011-2015), said Xi Guohua, vice minister of the Ministry of Industry and Information Technology (MIIT). He said that China aims to increase broadband Internet access in rural areas, making it available to 95 percent of the country's administrative villages by the end of 2015. Eighty percent of China's administrative villages have broadband access at the present time. (Further details in source: People)

Huawei starts manufacturing in India

Chinese telecom gear maker Huawei Technologies has already kicked off the production of optical network transmission equipment in a plant in Chennai of South India, said Justin Chen, CEO with Huawei Technologies India Pvt Limited. Chen said the plant also would manufacture wireless network equipments in the future while refraining from elaborating the investment amount for the plant. Huawei will spend $2 billion in the next five years in Indian operations with $500 to 600 million in the research and development area, said Chen. Huawei also has started the building of self-developed research and development park in Bangalore with $120 to 140 million of investment. (Further details in source: China Daily)

Supercomputing Environment

Supercomputing environment and associated application, a project undertaken by Chinese Academy of Sciences, passed an acceptance check on April 22, 2011. CHI Xuebin, project

leader, and a research fellow at Chinese Academy of Sciences Computer Network Information Center, told reporters that the supercomputing environment allows CAS to extend its supercomputing capacity and associated applications to the entire country. In addition to the Headquarters in Beijing, CAS will build 8 branches in Kunming, Dalian, Qingdao and other cities, covering bioinformatics, materials science, climate modeling among others. (Further details in source: MOST)

Nanosciences, Nanotechnologies, Materials and new Production Technologies

Nanofiltration for Better Energy Storage

Scientists in China have found that nanofiltration membranes could enhance the efficiency of vanadium redox flow batteries (VRBs) making them a more viable tool for large-scale energy storage. Xianfeng Li from the Chinese Academy of Sciences in Dalian and his team made the membranes, which separate two components in the batteries, from polyacrylonitrile. Pores in the membrane can be adjusted, allowing scientists to have more control over the ions passing from one side of the battery to the other during charge-discharge cycles, improving the battery's performance. (Further details in source: CAS)

Mental Liquid Radiator for High Power LED Developed by TIPC,CAS

Light Emitting Diode (LED) is rapidly emerging as a new generation of lighting source for its distinctive advantages including long work-life, low-power consumption and environmental-friendly characteristics. Heat dissipation of LED, however, has been a challenge for designing high power LED products, for the optical performance and reliability of LED are greatly affected by junction temperature which should be kept under 120 ℃. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences (TIPC) made a breakthrough in this respect by developing a novel radiator for high power LED (200 W) using liquid mental as the coolant. The radiator can ensure LED’s operation at full load with ambient temperature of LED substrate lower than 45℃. It is less prone to pose danger compared to ordinary liquid that may exert extraordinary heavy pressure due to phase transition at a high temperature, as the liquid mental can keep being liquid state even at 2300℃. (Further details in source: CAS)

New and Simple Method for High-throughput Fabrication of Ultranarrow Graphene Nanoribbons

Researchers in Institute of Physics, Chinese Academy of Sciences, and collaborator in Peking University, succeeded in developing an innovative approach for the high-throughput, rapid and low-cost fabrication of ultranarrow GNRs by using nanosphere lithography (NSL) nanopatterning in combination with low-power O2 plasma etching. It is believed that this new GNR-fabrication approach demonstrates a possible new avenue for the development of graphene-based nanoeletronics. The work has been supported by Chinese Academy of Sciences, the National Natural Science Foundation of China, and the Chinese Ministry of Science and Technology. (Further details in source: CAS)

Environment (including climate change)

Study lays out roadmap for environment

China is aiming to effectively curb emissions of major pollutants and ensure greater environmental quality, as pointed out in a strategic report jointly published by the Chinese Academy of Engineering (CAE) and the Ministry of Environmental Protection (MEP). , says the government's intensified and persistent efforts to control pollution have paid off by cutting emissions of major pollutants. It may still take China two decades to fully rein in rampant pollution, rapid ecological degradation and the loss of valuable species, according to the roadmap laid out by the study. (Further details in source: China Daily)

190 million Chinese drinking polluted water

Some 190 million Chinese people are drinking water with fairly high levels of hazardous substances, and about one-third of the urban population are breathing polluted air, according to a report on China's environmental strategies released at a recent conference. China has vowed to complete a revision of its environmental quality standards for air and water during the “12th Five-Year Plan” period (2011-15). (Further details in source: People)

'Grave situation' threatens coastal areas

China's fragile coastal ecosystems are severely threatened by human activities, and pollution and environmental degradation have created a "grave situation", according to the 2011 China Ocean Development Report released by China Institute for Marine Affairs of the State Oceanic Administration. Sun Zhihui, former head of the State Oceanic Administration, warned that severe marine pollution has been caused by the country's fast economic development, in particular by land reclamation from the sea. China's coastal environment has also been the victim of large-scale draining efforts for real estate development and port or harbor construction. The 12th Five-Year Plan (2011-2015), approved by the National People's Congress in early March, laid out measures to prevent over-exploration of marine resources and to stop excessive land reclamation. (Further details in source: China Daily)

Energy

National lab for clean energy to open

The National Laboratory for Clean Energy is expected to go into operation in September, an academician of the Chinese Academy of Sciences (CAS) said at a conference in Dalian on April 11. Li Can, a key member of the preparation team, said the lab is established by the Ministry of Science and Technology and the CAS. Its research will cover petroleum chemical, natural gas, coal, solar energy, biomass energy, hydrogen energy, fuel cells, power storage and some other areas. He welcomed world universities, research institutions and companies to collaborate with the lab in Dalian, a port city of northeast China's Liaoning province. (Further details in source: China Daily)

Ministry unveils geothermal power plan

Geothermal power is expected to provide 1.7 percent of China's total energy in 2015, as the country speeds up its exploration of renewable and clean-power sources, said Guan Fengjun, director of the department of geological environment of the Ministry of Land and Resources. Using geothermal power for heating and generating electricity is a significant part of China's low-carbon development strategy, Guan said. By 2015, this green-energy source can replace 68.8 million tons of coal and reduce carbon dioxide emissions by 180 million tons, Guan said. (Further details in source: China Daily)

China to build 100 new-energy model cities

China will build 100 new-energy model cities during the 12th Five Year Plan (2011-2015), 21st Century Business Herald reported. The plan to build the new-energy cities is included in the 12th Five-Year Energy Plan, a National Energy Administration official told the newspaper. The evaluation system and relevant policies for the concept of "new-energy cities" are being drafted and are expected to come out later this year. (Further details in source: China.org)

Indonesia, China to strengthen co-op on renewable energy

Indonesian and Chinese business owners have affirmed their commitment to strengthening cooperation in developing Indonesia's renewable energy sector in a bid to help the country reduce dependence on fossil fuels and boost economic growth, the Jakarta Post quoted the Chinese Ambassador as saying. (Further information in source: Central government web)

Turning Waste Heat Into Electricity

Researchers in the United States and China report that they've come up with a new way to boost the performance of one of the most common thermoelectrics on the market, an advance that could pave the way for more widespread use in converting waste heat from cars and other mechanical devices into useful electricity. (Further details in source: CAS)

Transport (including aeronautics)

Smart grid able to handle EV recharging demands

The ambitious electric vehicle development plan released recently triggered concern on the stability of the Chinese grid system, yet government officials said the smart grid will stand the impact by the time EVs are prevalent in China. According to the government development plan, the number of electric cars will reach 30 to 40 million by 2030. Yang Junqian, chief expert of smart grid, EV and renewable energy department of Schneider Electric China, said the pressure on the grid system can be huge, when hundreds of thousands of EVs charge at the same time. (Further details in source: China Daily)

China should strive to make new-energy cars appealing to the public: expert

A Chinese expert told Xinhua that the largest barrier in developing new-energy vehicles is convincing customers to view them as a safe, practical and cost-effective substitute for traditional cars. The Chinese government has made it clear that it would energetically push the development of new-energy vehicles, among other industries, according to the 12th Five-Year Plan (2011-2015). The Ministry of Industry and Information Technology said that a plan to boost the new-energy vehicle industry in the next 10 years had been submitted to the country's

State Council for final approval. According to the draft plan, China will invest more than 100 billion yuan to help nurture the industry over the next decade. (Further details in source: People)

Fast trains to run at reduced speed

China's high-speed railways will run at a slower speed than previously expected. Sheng Guangzu, railways minister, said high-speed trains will run at 300 kilometers per hour starting from July 1, instead of the previously announced 350 km/h. Zhao Jian, a transport professor at Beijing Jiaotong University, told China Daily that the speeds should have been slower right from the start. "Because, at 300 km/h or less, the high-speed rail network can operate in a more economically efficient and safer way," he said. The energy consumption of trains at 350 km/h could be twice that of trains at 200 km/h, he explained. For passengers, a lowered speed could mean a cut in ticket prices in the future. (Further details in source: China.org)

New Boeing China plant to be launched in 2013

The China office of US aircraft manufacturer Boeing said that an expansion of its China venture in north China's port city of Tianjin will be operational in 2013. The $21m project will double the size of Boeing Tianjin Composites Co. Ltd., a joint venture between Boeing and the China Aviation Industry Corp. which produces components and parts for the Boeing 737, 747, 767, 777 and the 787 Dreamliner aircraft. (Further details in source: China Daily)

China's railways to rise to 120,000 km by 2015

China's total mileage of railways open to traffic will increase to 120,000 kilometers by the end of 2015, including 50,000 kilometers of railways in the western regions, an official said in Beijing. China currently has 91,000 kilometers of railways, said Sheng Guangzu, railway minister. (Further details in source: central government web)

Electric Vehicle Forum

An international forum was held April 20-22, 2011 in Shanghai to discuss electric vehicle demonstrations and associated industrial development. Participants discussed and exchanged views on a range of issues including government strategies, policies and regulations on the development of electric vehicles, national and municipal planning, development goals, demonstration experience, public and private sector partnerships (PPP), research cooperation between industry, universities and research institutes, new business models in demonstration, markets/investment/financing, infrastructures, including charging equipment, road systems, data collection, technical coordination, and standards. (Further details in source: MOST)

Socioeconomic sciences and the Humanities

Chinese experts call for attention to 'city illnesses'

Chinese experts said that China's rapid urbanization and economic growth have caused serious "city illnesses," such as water shortages, environmental pollution and traffic jams. "City illnesses" have greatly reduced people's quality of life and feelings of happiness, Li Bo, director of the Chinese environmental group Friends of Nature (FON), said. The group released the Annual Report on the Environment Development of China (2011). Speaking at a press briefing,

Li said he expected that China's urbanization rate will reach nearly 80 percent in 30 to 40 years and the government should create a comprehensive action plan and take concrete measures to address the issue. (Further details in source: China.org)

China facing rich drain

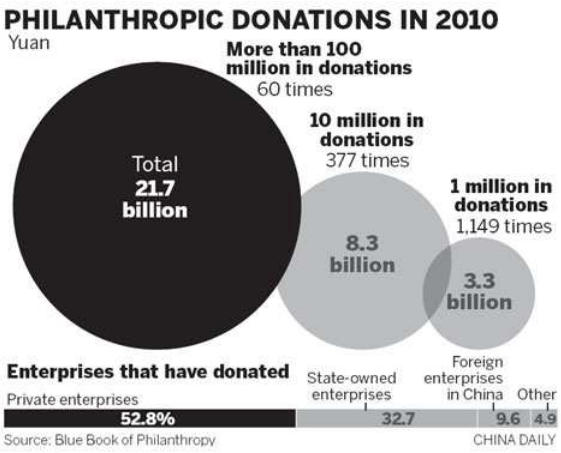
More and more Chinese millionaires are investing overseas, and many are doing so in order to immigrate to another country, according to the 2011 Private Wealth Report published by China Merchants Bank and business consulting firm Bain & Company. The report showed that the number of high net worth individuals (HNWIs) in China exceeded 500,000 in 2010, 19 percent more than in 2009. There are three major reasons behind rich people's immigration: a better education for children, safety of personal wealth and a preparation for retirement, the report showed. (Further details in source: Global Times)

Half of Beijing women eligible for 2nd child give up - survey

More than 50% of the childbearing-age women in Beijing who are eligible for a second child under China's family planning policy do not want to produce, said the "2010-2011 Beijing Social Development Blue Book" released by the Beijing Academy of Social Sciences. The report pointed out that the childbearing will of females in Beijing is currently going towards the trend of having fewer children, later childbirth, and no clear gender preference. In addition, the only-children themselves dominate the reproductive behaviors, and the impact of policies on childbearing will gradually become minimal. (Further details in source: People)

2010 a very charitable year: Report

The country's top think tank said that donations hit 70 billion yuan ($10.7 billion) last year, more than double the year before. According to the Blue Book of Philanthropy, the number of non-government organizations focusing on charity in China hit 439,000 in 2010, with more than 31 million volunteers. Zhu Jinchang, chief of the social policy research center under the Chinese Academy of Social Sciences, which published the report, said that the country's charity development is stable and public awareness about charity and wealth has improved in recent years. (Further details in source: People)



Economy threatened by aging demographic

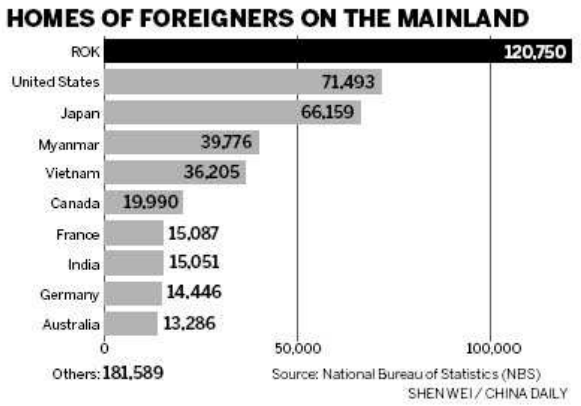
China's population is getting older, and that could have a major effect on the nation's economic prosperity. The emergence of negative growth in the total working-age population, which some demographers predict will happen as early as 2013, is likely to contribute to slower economic growth and higher inflation, according to analysts. However, they said the demographic shift from a rural surplus of labor to a deficit will help to accelerate the transformation of the growth model from one which is export- and investment-led to one driven by services and consumption. The latest census data, released by the National Bureau of Statistics, showed that the proportion of the population aged between 0 and 14 fell to 16.6 percent in 2010 from 22.9 percent in 2000.

Meanwhile the number of people aged 60 and above grew to 13.3 percent from 10.3 percent. (Further details in source: People)

Highlights of China's sixth national census results

China has put its excessive population growth under effective control, and has greatly improved the population quality, entering a stage of low birth and death rates, according to the results of the country's sixth national census published on April 28. (Further details in source: People)

Almost 600,000 foreigners counted in China



Nearly 600,000 foreigners were living on the Chinese mainland at the end of 2010, results from the sixth national census released by the National Bureau of Statistics (NBS) showed. It is the first time the country has included foreigners who would stay on the mainland for at least three months in its once-in-a-decade population census, as "they've been playing an increasingly important role for the nation's social and economic development", said Zhai Zhenwu, dean of Renmin University's school of sociology and population. According to the census, the top three home countries of the foreigners on the mainland were the Republic of Korea (ROK), the United States and Japan. Among them, 56.62 percent, or 336,245, were males and 43.38 percent, or 257,587, were females, it showed. Business and study are major reasons bringing them here. (Further details in source: China Daily)

Space

Countdown begins for space station program

Authorities in charge of the manned space program unveiled plans on 25 April to build a 60-ton space station, made up of three capsules, and develop a cargo spaceship to transport supplies. The China Manned Space Engineering Office said at a news conference that it also wants the public to get involved by suggesting names for the space station, due to completed around 2020. According to documents provided by the office, the space station, weighing about 60 tons, is composed of a core module and two others where experiments will be conducted. A cargo spaceship to transport supplies will also be developed. (Further details in source: China Daily)

China may send women to space in 2012

China's women astronauts may fly to space as soon as the latter half of next year, said a senior official in charge of the manned space program. Yang Liwei, deputy director of the China Manned Space Engineering Office, said that following the country's first unmanned rendezvous and docking mission between the space module Tiangong-1 and an unmanned spacecraft Shenzhou VIII later this year, two more Shenzhou spacecraft will blast off next year to improve the rendezvous and docking technologies. At least one of the two spacecraft next year will be

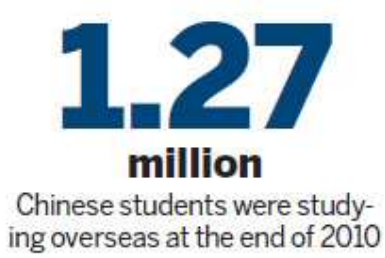
manned, said Yang, who is also China's first astronaut to space. (Further details in source: China Daily)

People

More scholarships for Americans announced

Visiting Chinese State Councilor Liu Yandong announced an additional 10,000 scholarships for Americans to study in China during the second meeting of the China-US high-level consultation on people-to-people exchange held in Washington. The new scholarships are made in addition to the pledge by the Chinese government last year of 10,000 "Bridge Scholarships" for American students to study in China. Realizing the strategic importance of the US-China relationship, the US government has called for more Americans to study in China. In November 2009, during his visit to China, US President Barack Obama announced the "100,000 Strong" initiative, a national effort designed to increase dramatically the number of American students studying in China. (Source: China Daily)

Students go overseas in record numbers



China has the largest number of overseas students in the world, with a record 1.27 million studying abroad at the end of 2010, according to the latest statistics from the Ministry of Education. About 285,000 of them were new students who began their overseas studies last year, up 24 percent over 2009, said the ministry. Self-financed students now make up the largest group of those going overseas, and among more than 100 countries they selected, more than 90 percent of the students chose to study in the top 10 destinations - the United States, Australia, Japan, the United Kingdom, South Korea, Canada, Singapore, France, Germany and Russia. (Further details in source: China Daily)

Returned Students Encouraged to Build Businesses

It was learned from the Ministry of Human Resources and Social Security on April 14, 2011 that China has publicized a range of policies to support returned overseas Chinese students establishing their own businesses. The said business is defined as a business created by returned overseas Chinese students taking advantage of their own patents, research findings, or proprietary technologies, with priority on the start-up phase of a business featured with strong innovation capability, promising potentials, and fine market perspectives. (Further details in source: MOST)

Confucius Institutes recruiting directors

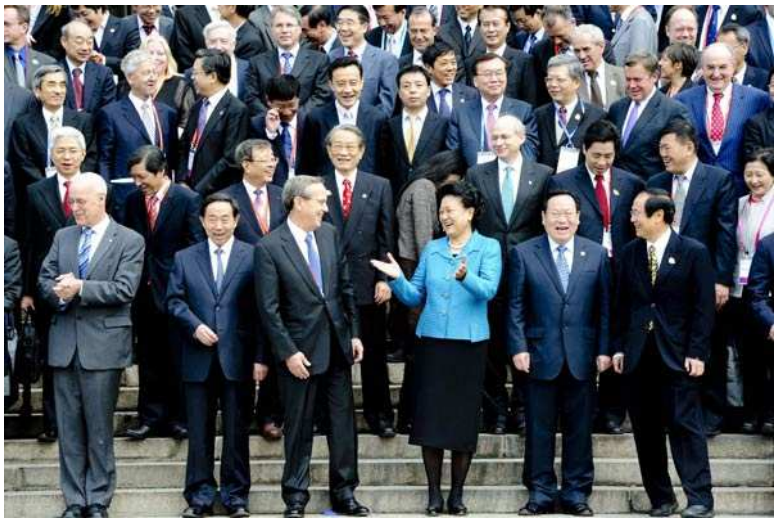
As the number of Confucius Institutes increases in other countries, China plans to recruit 199 Chinese directors who will work in the non-profit organizations, teaching their language and

promoting their native culture around the world. China has been establishing Confucius Institutes since 2004. (Further details in source: China Daily)

SIBS Signs Cooperation MoU with UCLA

The Shanghai Institutes for Biological Sciences, Chinese Academy of Science (SIBS) and the Regents of the University of California on behalf of its Los Angeles campus (UCLA) signed a Memorandum of Understanding in Shanghai on April 19 to encourage the development of a variety of activities, for instance, visits and informal exchanges of faculty, scholars and administrators, cooperation in postgraduate education and training, and exploration of possibilities for developing joint research programs and collaborations, particularly in the area of translational sciences and biomedicine, including the possibility of establishing a "SIBS-UCLA Joint Center for Translational Medicine in Shanghai", etc. (Source: CAS)

China pushing to be Asia's top draw among students



China is aiming to become the most popular destination in Asia among international students, said State Councilor Liu Yandong. She made the remarks at the Global Summit of University Presidents and the Association of Pacific Rim Universities' 15th Annual Presidents Meeting held at Tsinghua University. The government will increase the number and size of scholarships to attract more foreign students, she said. The Ministry of Education said earlier this year that the country plans to use cooperative educational programs to draw 500,000 foreign students to China by 2020. The number of US students in China is set to become one of the largest, with Beijing and Washington working together to bring 100,000 to China during the next four years. (Further details in source: China Daily)

Tsinghua and Oxford becoming schoolmates

Tsinghua University is poised to build a closer relationship with the prestigious University of Oxford. According to an agreement signed on 22 April, the universities will conduct academic research projects and facilitate exchanges of faculty and students in the next five years. The two universities will also co-host seminars and workshops, making academic materials and

publications more accessible to faculties and students at the two universities. (Further details in source: China Daily)

China strengthens human resource development in its own "Silicon Valley"

A committee to promote the development of human resources in Beijing's Zhongguancun technological base, often referred to as "China's Silicon Valley", was established jointly by the Beijing municipal government, the Organization Department of the Communist Party of China (CPC) Central Committee, the National Development and Reform Commission and the ministries of eduction and technology, in addition to several other departments. The committee aims to strengthen the management and coordination of human resources in Zhongguancun in order to attract more talent from both home and abroad. (Further details in source: Xinhua net)

Research infrastructures

Sino-German Cooperation in Theoretical Physics

A Sino-German Collaborative Research Center (CRC) was proposed to be set up at the Sino-German Workshop on Symmetries and the Emergence of Structure in Quantum Chromo-dynamics (QCD) from March 31 to April 1. One of the main topics was to discuss how to strengthen the theoretical QCD studies relevant to the experiments at BEPCII in Beijing, the Cooler Storage Ring (CSR) at Lanzhou and Anti-proton Annihilation at Damstadt (PANDA) in Germany. (Further details in source: CAS)

Physicists from China and the World Nab New Record for Heaviest Antimatter-Antihelium-4

The international STAR collaboration which Chinese scientists participated in at the Relativistic Heavy Ion Collider (RHIC) – a particle accelerator used to simulate and study conditions of the early Universe at the U.S. Department of Energy's Brookhaven National Laboratory(BNL) – has detected the antimatter partner of the helium nucleus: antihelium-4. (Further details in source: CAS)

Innovative Design and Technology Transfer Centers

Renato Brunetta, Italian Minister of Public Administration and Innovation, visited China April 21-25, 2011 and attended the ceremonies to launch a China-Italy Innovative Design Center at Tongji University in Shanghai, and a China-Italy Technology Transfer Center at the International Hotel in Beijing. The new design center expects to open up a range of branches in Shanghai, Hunan, and other cities, working on innovative design, industrial design, heritage protection design, and fashion design. China-Italy Technology Transfer Center is established to promote cross-border transfer of innovative technologies, allowing innovative elements,

including research findings, personnel, funds, and projects, to be exchanged and configured in an optimized manner. (Further details in source: MOST)

IDG Donation to Tsinghua University for Human Brain Study

International Data Group (IDG) and Tsinghua University jointly inked an accord, allowing IDG to donate USD 10 million to establish an IDG/McGovern Institute for Brain Research at Tsinghua University. In addition, IDG China and the Management Team of IDG Capital Partners will set up an IDG China Foundation and a Harmony Foundation to render long-term support and financial aid to the institute. (Further details in source: MOST)

International S&T relations

China, Brazil pledge to enhance science co-op

China and Brazil pledged to enhance cooperation on science and technology to advance bilateral relations to a new stage at the China-Brazil high-level dialogue on science, technology and innovation. Chinese Science and Technology Minister Wan Gang said China and Brazil have deepened bilateral relations in recent years and the science cooperation in the field of space technology has become an example for South-South cooperation. Representatives at the dialogue held discussions on scientific development, bilateral science relations and scientific innovation policies. Topics also included renewable energy, nanotechnology, information technology, agriculture, food security and space technology. (Further details in source: central government web)

Vice Minister Cao Jianlin Visits European Union

At the invitation of the European Commission, Vice Minister Cao Jianlin of Science and Technology had a successful visit to the EU headquarters in Brussels from March 21 to 23. During the visit, he chaired the 1st Steering Committee Meeting on R&D Cooperation in the Peaceful Uses of Nuclear Energy, the 2nd meeting of the China-EU Dialogue on Information and Communication Technologies Research, and the 9th Steering Committee Meeting of China-EU Science and Technology Cooperation. He also held talks with Antonio Preto, Head of the Cabinet of Vice-President Antonio Tajani of the European Commission, and paid a visit to the Interuniversity Microelectronics Center (IMEC). (Source: MOST)

Minister Wan Signs Chinese-Brazil S&T Cooperation Agreement

Minister Wan Gang and Brazilian Minister Mercadante of Science and Technology signed The Memorandum of Understanding on Bilateral Cooperation in S&T in the Area of Bamboo Development and The Memorandum of Understanding for Establishing China-Brazil Nanotechnology Research and Innovation Center between MOST and its Brazilian counterpart in the Great Hall of the People on April 12, 2011. President Hu Jintao and President Rousseff witnessed the signing ceremony. (Source: MOST)
