



# Science, Technology and Education News from China

## Number 49 – July 2008

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### Introduction

With a few days to go before the opening of the Beijing 2008 Olympic Games, the whole City of Beijing starts to "Think Olympic": One of the most sensitive issues around the Olympics is air quality. Cooperation between ESA and MOST now allows for better prediction and control of the various measures that have been taken in order to improve air quality in the capital. On the dawn of the Beijing Olympics, China continues to fight an up hill struggle in an effort to reconstruct the earthquake-demolished areas in Sichuan province. "Architectural Knowledge on the Re-establishing of Livelihood", is aiming to meet the needs of the popularization of S&T knowledge on quake-proof buildings during the reconstruction of damaged buildings in the quake-hit rural areas. Last but not least, the Swiss President will officially open the Swissnex Shanghai office on 7 August 2008.

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#### 1. **Measuring Air Quality during the Olympics**

(ESA, 22-07-2008)

The Chinese government has introduced various measures to improve the air quality during the Beijing 2008 Olympic Games. A new instrument allowing for an efficient controlling of these measures has been installed in the capital. The government is aware of the fact that bad air quality could have negative effects on the athlete's performances. The principle source of air pollution in the urban zone of Beijing is traffic. This is why restrictions on car circulation have been introduced on July 20, which resulted in a 50% reduction of the 3.5 million cars in Beijing. On behalf of ESA (European Space Agency), CERC (Cambridge Environmental Research Consultants) has installed an air quality prediction system, which will allow the Chinese authorities within EBP (Environmental Bureau for Protection) to control the effects of their measures. This system is the result of a joint initiative of ESA Dragon-2 and the Chinese Ministry of Sciences and Technology. The goal of this initiative is to encourage the exploitation of satellite data in China. For online predictions: [www.beijingairquality.cn](http://www.beijingairquality.cn)

#### 2. **Promotional Wall Maps of "Architectural Knowledge on the Reestablishment of Livelihood" Designed, Printed and Distributed to Earthquake-hit areas**

(MOST, 10-07-2008)

Recently, a team of earthquake disaster mitigation experts under CNCDR (China National Centre for Disaster Reduction) and MOST has specially designed wall maps of popular science, "Architectural Knowledge on the Re-establishing of Livelihood", aiming to meet the needs of the popularization of S&T knowledge on quake-proof buildings during the reconstruction of damaged buildings in the quake-hit rural areas. The easy to read wall maps present essential points that need special attention during the reconstruction. Specific earthquake counter measures are put forward in accordance with the habits of local residents, material conditions and common house styles, and several construction forms not suitable for houses in earthquake region are enumerated. Fifty thousand copies of the wall maps have been printed and distributed to the disaster-hit areas.

#### 3. **Xiangshan Science Conference Held on Global Change**

(MOST, 22-07-2008)

The 325th Session of the Xiangshan Science Conference was held in Beijing from July 7 to 9, 2008. The theme is Global Change: Observation, Simulation, Human Activities and Economic Problems. Experts noted that the research work of China on global change should have created a synergy despite increased input. More should be done to define focus areas and better deploy advanced research technologies. Accordingly, the pressing tasks are to do a good job on top layer design, expand government investment, integrate available resources, and build a full-fledged platform for the scientific research on global change.

#### 4. **Power Production Rises By 13%**

(China Daily, 23-07-2008)

China's major power plants produced 1.68 trillion kWh of electricity in the first half of this year, a year-on-year increase of 12.9 percent, said the China Electricity Council (CEC). Environmental protection should also be underlined for the industry, said Wang. From January to May, small-scale power generating units with a total capacity of 5,790 MW had been closed nationwide. Huaneng Beijing thermal power plant launched China's first post-combustion CO2 capture pilot project. With an investment of 28 million yuan, the project, which is in cooperation with research institutes in Australia, can capture 3,000 tons of CO2 in a year.

More details on <http://english.peopledaily.com.cn/90001/90776/90884/6456443.html>



## 5. Wind Power Fans New Investment

(Xinhua, 21-07-2008)

Wind-power plants are drawing increasing investment in China; statistics from the United Nations Environment Programme (UNEP) have shown. Investment in the country's sustainable energy sector grew by 91 percent last year to a record high of \$10.8 billion, most of which has flowed to wind-power generating units, UNEP report Global Trends in Substantial Energy Investment 2008 showed. The large investment doubled China's capacity for wind power to 6,000 MW last year. Similarly, new investment in sustainable energy reportedly surpassed \$148.4 billion worldwide, up 60 percent year-on-year. Funds toward wind power were said to be the major contributor to the surge.

More details on [http://www.china.org.cn/china/sci\\_tech/2008-07/21/content\\_16039976.htm](http://www.china.org.cn/china/sci_tech/2008-07/21/content_16039976.htm)

## 6. Major Breakthrough Made On Lightning Diversion

(China Daily, 18-07-2008)

Chinese scientists are now able to harness lightning. A research project has found ways to draw lightning down to designated areas for disaster prevention and use. Scientists have begun to use the electromagnetic radiation produced by lightning to genetically modify plants and to change the some of the earth's chemical elements. Lightning diversion can also help reduce the frequency of hailstorms. The technology is expected to be used in the fields of meteorology, forestry and agriculture

More details on [http://www.china.org.cn/china/sci\\_tech/2008-07/18/content\\_16028762.htm](http://www.china.org.cn/china/sci_tech/2008-07/18/content_16028762.htm)

## 7. New Method for Early Cancer Diagnosis

(NSFC, 03-07-2008)

The National Natural Science Foundation of China funded Key Program project "A real-time analysis of the early diagnosis of cancer markers", undertaken by Changchun Institute of Applied Chemistry, Chinese Academy of Sciences (CAS), recently received recognition from an expert team for assessment. By means of capillary electrophoresis (CE) with electro-chemiluminescence (ECL) detection, surface plasma resonance (SPR), laser induced fluorescence (LIF), spectrum technology, protein chips, gene chip sensors, etc.; a real-time, sensitive and specific online detection of some cancer markers was established. The project won the research group 4 prizes and 16 patents, and produced 87 papers, of which, 50 were published by key academic journals abroad (SCI impact factor > 3), and 38 conference papers.

More details on [http://www.nsf.gov.cn/Portal0/InfoModule\\_479/25420.htm](http://www.nsf.gov.cn/Portal0/InfoModule_479/25420.htm)

## 8. Virus Structure Reveals A Target for Novel Anti-Bird Flu Therapeutics

(CAS, 25-07-2008)

A research team led by CAS biologists has recently decoded the fine structure of a polymerase complex from an avian flu H5N1 virus, which may meet the urgent need for improved influenza therapeutics. The work is supported by the National Natural Science Foundation of China, the Ministry of Science and Technology International Cooperation Project and the National "973" Program.

More details on <http://english.cas.cn/Eng2003/news/detailnewsb.asp?infoNo=27269>

## 9. China's Arctic Icebreaker Could Not Venture Further North Due To Shrinking Ice Cap

(Xinhua, 25-07-2008)

The shrinking ice cap may make it impossible for China's Arctic icebreaker Xuelong to go further north this year. According to a satellite image sent to Xuelong by the U.S. National Oceanic and Atmospheric Administration (NOAA), the ice on Chukchi Sea has retreated to around latitude 73 degrees north, [...]

More details on [http://news.xinhuanet.com/english/2008-07/25/content\\_8768045.htm](http://news.xinhuanet.com/english/2008-07/25/content_8768045.htm)



## **10. Remains of Vast Neolithic Site Found In South China**

(Reuters, 22-07-2008)

Thousands of ancient artefacts and wooden poles more than 3,000 years old have been unearthed in China's southern Yunnan province, possibly the world's largest site of a Neolithic community, local media reported. The site could be older than the Hemudu community in Yuyao, in Zhejiang province, which is among the most famous in China and is believed to be the birthplace of society around the Yangtze River.

More details on <http://www.newsdaily.com/stories/pek199681-china-excavation/>

## **11. CAS VP Presents Jeoujang Jaw Award at COSPAR Assembly**

(CAS, 23-07-2008)

CAS Vice President JIANG Mianheng led a Chinese delegation to attend the 37<sup>th</sup> Scientific Assembly of the International Committee on Space Research (COSPAR) held from 13 to 20 July in Montreal, Canada. He also presented the 2008 Jeoujang Jaw Award at the opening ceremony of the assembly. Jointly bestowed by CAS and COSPAR, the award, which is named after Chinese scientist Jeoujang Jaw (or ZHAO Jiuzhang, 1907-1968), is to recognize scientists who have made distinguished pioneering contributions to promoting space research, establishing new space science research branches and founding new exploration programs. This year's Jeoujang Jaw award went to Dr. James L. Burch, vice president of the Space Science and Engineering Division of Southwest Research Institute in US.

## **12. First Collision at Renovated Electron-Positron Accelerator**

(CAS, 25-07-2008)

On late afternoon July 19, researchers at the CAS Institute of High Energy Physics (IHEP) in Beijing produced for the first time collisions in the upgraded Beijing Electron-Positron Collider (BEPCII). The feat was observed in its brand new associated detector, Beijing Electron Spectrometer III (BESIII). Although careful and separate tests have been conducted to the two devices, this was the first time they operated together. These first collisions represent a major milestone of the 640 million yuan project, costing eight years of planning and construction.

More details on <http://english.cas.cn/eng2003/news/DetailNewsb.asp?InfoNo=27271>

## **13. Announcement – Opening of Swissnex Shanghai 7 August 2008 by the Swiss President**

(Swissnex, 29-07-2008)

Official opening of Swissnex Shanghai will take place on August 7, 2008, at the presence of the President of Switzerland, Federal Councillor Pascal Couchepin and the State Secretary for Education and Research, Mauro Dell'Ambrogio. The Vice Mayor of Shanghai in charge of Foreign affairs, Mr. Tang Deng Jie; the former Vice Minister of Education of China, and alumni of ETHZ, Mrs. Wu Qidi; the Vice President of Chinese Academy of Science (CAS) and President of CAS Shanghai, Mr. Jiang Mianheng; and the Vice President of China National Natural Science Foundation, Mr. Shen Wenqing have announced their participation. The Vice President of ETHZ, Prof. Schmitt and the President of University of Zurich; Prof. Fischer who represent respectively the China Leading House and Associated Leading House, will fly to Shanghai to celebrate the event. Leaders from some of the Chinese key universities and research institutes as well as local representatives from the Swiss business community will join the ceremony.