



# Environment & Research News from China

Number 1 - July 2004

## Introduction

This new newsletter is intended to further foster the growing cooperation between Switzerland and China in the areas of Environment, Science and Technology.

At the end of 2003, both countries have signed a Memorandum of Understanding to strengthen scientific and technological cooperation in varied areas including medicine, biotechnology, nanomaterial, fuel cell, microsystems, environment protection, communication and information technologies, fine machinery. Implementation of this MOU starts with increased contacts between Swiss and Chinese research teams and ultimately leads to more joint research activities.

Besides, at the beginning of 2004, Switzerland has become a full participant in the EU's FP6 large-scale research platform. On the other hand, China has an agreement with FP6 allowing its researchers to take part in and contribute to research programmes. In practice, this further facilitates joint research between Swiss and Chinese researchers.

In the area of environment protection and sustainable development, Switzerland and China are continuing to cooperate actively with pro-active support of the Swiss government. In June, Switzerland has granted China a new mixed credit line allowing import of Swiss technology having a positive impact on the environment with a grant of the Swiss government.

We hope that these press clippings and calendar will also contribute to facilitate the identification of opportunities for cooperation.



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## Activites coming up soon

August 19-20
<b>Sino-European Green Chemical Industrial Development Conference (Shanghai)</b>
Contact: secn@sh163.net
September 8-10
<b>China Int'l Forum on Agricultural Investment &amp; Fair for Recommended Agricultural Projects (Xiamen)</b>
www.cicos.gov.cn, Contact: xuming@agri.gov.cn
September 16-18
<b>International Forum on the Sustainable Development of Shandong Province &amp; International Exhibition of Environmental Technologies (Qingdao)</b>
<a href="http://www.goodlink.cn">www.goodlink.cn</a>
September 19
<b>China Forestry Products Fair (Heze near Qingdao)</b>
<a href="http://www.cfp919.com">www.cfp919.com</a>
September 20-24
<b>Yunnan Sustainable Development Symposium (Kunming)</b>
Contact: henryvoigt@web.de
September 21-24
<b>Environmental Protection &amp; Energy Saving Exhibition (Beijing)</b>
<a href="http://www.chinamachine.org/emaocu/lhzi/lhzi-huanbao.htm">www.chinamachine.org/emaocu/lhzi/lhzi-huanbao.htm</a>
September 23-27
<b>Sixth Int'l Fruit/Vegetable Exposition (Yantai, near Qingdao)</b>
<a href="http://www.fruitveg-expo.cn">www.fruitveg-expo.cn</a>
September 27-29
<b>Water &amp; Membrane China 2004 (Beijing)</b>
<a href="http://www.grandexh.com/water2004/">www.grandexh.com/water2004/</a>
October 12-15
<b>2nd Int'l Conference on Environmental Concerns (Xiamen)</b>
<a href="http://www.ICEC2004.org">www.ICEC2004.org</a>
October 12-14
<b>2004 International Symposium on Water Resources Management and Development of Cities</b>
liuyk@bjwater.gov.cn , <a href="mailto:Huangyzzh@bjwater.gov.cn">Huangyzzh@bjwater.gov.cn</a>
October 12-17
<b>European exhibits at the China Hi-Tech Fair in Shenzhen</b>
October 22-26
<b>Regional Environmental Quality Change and Environmental Security in China</b>
<a href="mailto:ydavidchen@cuhk.edu.hk">ydavidchen@cuhk.edu.hk</a>



October 31-November 4
<b>3 rd World Wind Energy Conference and Renewable Energy Exhibition Including Wind Power Asia 2004</b>
<a href="mailto:sg@wwindea.org">sg@wwindea.org</a> , <a href="http://www.wwindea.org">www.wwindea.org</a> , <a href="http://www.wwec2004.cn">www.wwec2004.cn</a>
November 3-5
<b>Pollutec China 2004 (Shanghai)</b>
<a href="http://www.pollutec-china.com">www.pollutec-china.com</a>
November 9-11
<b>IWA International Conference on Water Conservation and Management in Coastal Areas</b>
<a href="mailto:zhengyan@ouc.edu.cn">zhengyan@ouc.edu.cn</a>
November 18-19
<b>Global Food Safety Forum</b>
Dr. Horst Betz, GTZ China, <a href="mailto:Horst.Betz@gtz.de">Horst.Betz@gtz.de</a>



## Environment

### Investment Sought for Urban Sewage Treatment

*01/01/1970*

Over 60 percent of the China's cities lack urban sewage treatment plants due to lack of investment, despite the fact that urban sewage currently exceeds industrial waste as the country's biggest water polluter.

"The industry is starving for non-state capital," said Pan Yue, deputy director of the State Environmental Protection Administration, in an announcement released Tuesday.

Pan said that urban sewage reached 24.76 billion tons in 2003, accounting for 53.8 percent of the country's total waste water.

According to a standard set by the State Environmental Protection Commission in 2001, the sewage treatment rate must reach 45 percent on average and exceed 60 percent in cities with a population of over 500,000. However the government promised to collect 120 billion yuan (US \$14.5 billion) to achieve this plan, while the treatment rate lingered at a mere 22.3 percent in 2003.

The government is now encouraging the investment of private capital in the industry in the Build-Operate-Transfer (BOT) and Transfer-Operation-Transfer (TOT) models, and will provide favorable policies in taxation, land, electricity and credit guarantee. To guarantee investor's profits, the government will soon enforce an emission fee levying system throughout the country.

"The government is going to make standards on construction, operation and technology for industrial players. Furthermore, contractors of sewage treatment plant projects will only be chosen through public bidding," Pan added.

*Beijing Today, 06/11/2004*

### Heavy Polluters Urged to Clean Up

*By SuWei*

The Beijing Environmental Protection Bureau released a list Monday of 28 heavy polluters that together account for 68 percent and 44 percent respectively of the city's sulfur dioxide and solid waste emissions.

The 28 enterprises include subsidiaries of two Hong Kong-listed power giants, Huaneng Power International and Datang Power International, Beijing Jingneng Thermo Power, five subsidiaries of Shougang Group, China's fourth biggest steel producer, and local heating providers, cement mills and oil refineries.



All the companies on the list have been ordered to install effective environmental protection facilities, and those that still fail to comply with environmental standards by the end of the year will be fined up to 100,000 yuan(US \$12,000).

However, deputy director of the bureau Du Shaozhong believes that most of the named companies would prefer to pay a fine. At present, fines levied on plants emitting excessive amounts of sulfur dioxide, set at 400 yuan (US \$8.33) per ton on average, are far less than the actual cost of processing the sulfur dioxide.

“It is unlikely these offending companies will be willing to complete the required upgrades,” he told Beijing media. “But desulfurization facilities must be installed and tested, enabling the city to reach its targeted annual reductions in sulfur dioxide and solid waste emissions.”

*Beijing Today, 07/21/2004*

### **Higher Emissions Standards Adopted**

A more demanding vehicle emissions regulation, equivalent to Europe’s Euro II standards, went into effect last Thursday across China, in a bid to reduce vehicular emissionpollution. The move is a further step in China’s anti-pollution drive, according to the State Environmental Protection Administration.

The new standards will measure the weight of pollutants and suspended particulate matter and will regulate a 30 percent cut in carbon monoxide and 55 percent cuts in hydrocarbons and nitrogen oxide compared to the old Euro I standard adopted in 2000, reported Friday’sChina Daily.

According to the tougher emissions standard, manufactured and imported vehicles that have been approved to only meet the Euro I standards will have to end production or imports within a year. Sales of such vehicles must cease the following day.

Zhang Lijun, director-general of the Pollution Control Division of the Environmental Protection Administration stated in a interview with China daily, “the whole country will adopt Euro III standards in 2008, whie Beijing will first adopt Euro III-equivalent standards as early as next year. The State Council has agreed to continue tax reductions for vehicles that meet Euro III standards ahead of time.”

China has become the world’s fourth largest automobile producer and third largest consumer of cars. The country produces 4.45 million automobiles a year and there are more than 24 million automobiles running across the country.

The administration says that while air quality in 70 percent of the country’s cities is sub-standard, and vehicle emissions account for 79 percent of air pollution.

*Beijing Today, 07/09/2004*

### **Tibet a biodiverse wildlife sanctuary**

ONE-THIRD of the Tibet Au-tonomous Region has been turned into a paradise for wild-life, including some rare species once on the verge of extinction. The region in southwest China has 15 nature



reserves covering 41 million hectares, says Liu Wulin, head of the regional institute for forestry survey. "These nature reserves serve as havens for the wildlife that abound on the roof of the world." Statistics from the autonomous regional environmental protection authority show Tibet also has more than 6 million hectares of wetland. The population of some rare wildlife species—including Tibetan wild donkeys, black-necked cranes and Tibetan antelopes has grown fast in recent years, Liu said. "The number of Tibetan antelopes has risen to about 100,000 from 60,000 reported in 1999, and the plateau has more than 8,000 black-necked cranes, as against 3,700 in 1994." The plateau is also home to 240,000 blue sheep, which are found only in the Himalayas. Even red deer, listed in 1990 as extinct, have reappeared in Sangyip County and the population has grown to about 300. Tibet is one of the world's most biodiverse regions and a major gene pool in both vegetation and animals, according to a recent government bulletin. It has 9,600 wild plant species, of which 6,400 are higher elevation plants. Tibet also has 789 wild vertebrate species, 125 of which are under special protection by the central government. There are 45 animal species like Tibetan wild donkey, wild yak and black-necked crane that are peculiar to China.

### **City looking to use more green power**

THE local government is encouraging companies to use power from environmentally friendly sources to supplement its current supply, energy officials revealed yesterday.

"The program will find buyers for the clean energy and raise funds for construction of more power plants dependent on clean energy sources," said Yang Jinde, an official with the Shanghai Energy Conservation Supervision Center. Clean energy refers to power created by solar panels, windmills and hydro electricity. Currently the city has only one wind power plant with a generating capacity of 3,400 kilowatts,

and a small solar power generating system. Both are in suburban Fengxian District.

The annual generation of "green power" in the city is more than 7 million kilowatt-hours. The electricity costs around 0.9 yuan (11 US cents) per kwh, about 50 percent more than that power produced from coal. The city also plans to build another two bigger wind power plants in suburban Chongming County and Nanhui District.

Companies willing to pay extra to use the environmentally friendly energy will earn the title "green power users." At present about 20 companies have expressed an interest in using the "green power" for production. Most of them are joint ventures or large state-owned enterprises, said Yang. "It is a good way for them to boost their company image." Residents can also purchase the "green power" at local power

sale networks, according to Yang. In other news, local weathermen are waiting for the government's final approval to create man-made precipitation this summer to cool down the city to help relieve the overloaded power grid. "We have finished preparations for the event," said Huang Jiaxin, an official in charge of artificial rain with the Shanghai Meteorological Bureau. The project can't begin right now as there are not enough clouds over the city.

*Shanghai Daily, 07/21/2004*

### **Capital urged to tap into water recycling**

*By Cai Wenjun*



TREATED water, a recycled water resource of low cost, is in the spotlight in Beijing as the city tries to quench its mounting thirst. “However, about 50 percent of the city’s waste water recycling capacity is not fully utilized,” said Huo Jian, general manager of the Beijing Jingcheng Re-cycled Water Co. Treated water can be used for gardening, road-washing, agri-cultural irrigation and feeding lakes, which can help conserve tap water and underground water resources. Jingcheng is able to produce 495,000 cubic meters of treated water a day, accounting for 90 percent of Beijing’s total. But only 240,000 cubic meters is used each day, with about the other half lying idle. Beijing is among the two-thirds of the big and middle-sized cities in the country facing water shortage. The average available tap water for a Beijinger is less than 300 cubic meters a year, just one-eighth of the national average. However, treated water accounted for less than 10 percent of the city’s total water consumption, far less than the 50 percent in developed countries. “It is mainly because the pipeline supply network is inadequate and the force of price leverage is not given full play,” said Huo. Beijing has 105 kilometers of treated water pipelines which can hardly satisfy the needs of water reuse, he said, adding that the price of the recycled water is not competitive. Water reusing, with its competitive price, will give users much more benefit with the imminent implementation of a new water price charging system.

Huo cited car washing as an example. Many car washing firms will choose treated water, which costs just 1 yuan (12 US cents) per cubic meter. Tap water costs 60 yuan each cubic meter. “Several car wash company owners are willing to sign contracts with us, and we will send them treated water by tanker vehicles,” Huo said.

*China Daily, 07/16/2004*

### **Swage plants planned**

Chinese military forces plan to build 280 sewage plants around their barracks to meet the country’s requirements on environmental protection.

According to the general office of the Environmental and Afforestation Committee of the People’s Liberation Army, the Chinese Government has allocated special funds for these projects.

All these sewage treatment facilities with a total handling capacity of 340,000 cubic meters are planned and designed in accordance with standards set by the State Council. Feasibility studies will be examined by military and civilian experts on environment protection, said the office.

*South China Morning Post, 07/15/2004*

### **Dishing the dirt on China's smog cities**

*By JANE CAI*

For the first time, mainland environmental authorities have named and shamed 10 cities with the worst air pollution records in the country.

Linfen, Yanquan and Datong, three cities in the central province of Shanxi, had the worst air quality of the 113 mainland cities assessed last year by the State Environmental Protection Administration.



The other cities to make the blacklist were Shizuishan in Ningxia , Sanmenxia and Luoyang in Henan , Jinchang in Gansu , Shijiazhuang in Hebei , Zhuzhou in Hunan and Xianyang in Shaanxi.

In the past, the administration has released only a general assessment of the air quality.

Administration deputy chief Wang Jirong said the cities with the most serious pollution problems should step up action to improve the situation.

The administration said the mainland's environmental quality was basically stable last year and obvious improvements were seen in some cities. It also pointed out that there was not enough investment in environmental protection. Infrastructure such as treatment systems for polluted water and medical waste disposal facilities were very weak in some cities, including Harbin, Changchun and Wuhan.

A source within the administration's pollution control department said the list of worst offenders was not surprising. "Cities in Shanxi have been plagued by severe air pollution for a long time because the coal industry is its economic backbone," the source said.

Ma Zhong , professor and vice-dean of Remin University's environment school, said that due to the overheated economy, coal pollution would continue to have a big impact on Shanxi' s air quality for at least the next two years.

"Increased coal demand from power plants, the building industry and car manufacturers resulted in increased coal output and processing volume last year, and the rising trend will continue," he said.

"Companies are busy making money at the moment and are reluctant to focus on pollution control. The local governments also lack motivation to better manage the situation because the revenue connected with the booming coal industry has more of a direct influence on their performance appraisal."

The state administration's annual report also pointed out that the presence of nitrogen dioxide had increased visibly in Harbin , Nanjing , Guangzhou , Xian and Yinchuan

*Newsletter(The Ministry of Science and Technology)  
06/30/2004*

## **Biochemical Sand Control**

Researchers from the Xinjiang Institute of Ecology and Geology, a branch of the Chinese Academy of Sciences, are at present working on innovative sand control techniques. The project expects an outcome of one or two biochemical sand fixation materials that can be used to restore vegetations and control sands in an environment with annual precipitation less than 150 mm. Biochemical sand fixation means will see a cost reduction by 30%, as compared with pure chemical means.

According to recent findings, lower grade plants and microbes, including blue algae, lichen and mosses, which have extensive distributions over the northern deserts of Xinjiang Autonomous Region,



have sand fixation functions. With a drought tolerance stronger than trees and grasses, they may even survive a waterless environment, though they will have a prosperous growth once being given water. They can present a sand control cost lower than tree planting and grass growing. A chemical technique may bring about a fast sand control result, while a biological one may last the sand control result. Researchers, in this context, wish to work out a fast but long lasting sand control approach combining the two.

*Newsletter(The Ministry of Science and Technology)*  
*06/20/2004*

## **China-Canada for Clean Development**

The Chinese Ministry of Science and Technology staged on May 9, 2004 a China-Canada clean development mechanism (CDM) demonstration project to promote the capacity building in Ningxia Hui Autonomous Region. Representatives from the Canadian Ministry of Foreign Affairs, the Chinese Ministry of Foreign Affairs, the Chinese State Development and Reform Commission, the Chinese Meteorological Administration, and the Ningxia Hui Autonomous Region Government were present.

Aiming at promoting the CDM capacity building in the autonomous region, the joint CDM capacity building project will enhance the region's CDM projects developing and sponsoring capacity, and set a role model for launching similar efforts in other provinces. The project has defined numerous objectives, including further building up the CDM environmental protection service center in the region, helping local authorities to develop and manage CDM projects, and preparing teaching materials for CDM capacity building training. The project plans to run 4 rounds of training courses for 350-400 trainees, so as to forge up a CDM expert team in the region. It will also look into the CDM projects in the region, and develop and complete 12 potential CDM projects. In addition, the collaborating parties will, in line with international standards, work out designing documents of 3 CDM demonstration projects recommending to Canadian businesses. Meanwhile, the project will design a greenhouse gas emission reduction network for China's west region.

## **Key Technical Projects Launched**

According to a recently issued circular, the State Development and Reform Commission will stage a number of key technical development projects, in an effort to address the key technologies involving resources prospecting, development and utilization. The new initiatives will play a role in further upgrading the nation's industrial technical level and core competitiveness.

Starting from 2004, a total of ten key industrial technical projects will be launched to address key technical issues concerning major industries, fields and enterprises. These projects will cover numerous key technologies, including resources prospecting, development and efficient utilization; large scale petroleum, natural gas and coal chemistry, and associated catalyzing; energy efficiency and new energy; efficient industrial water use; environmental protection; comprehensive resources utilization; safe production; advanced manufacturing; agricultural products' deep processing; and modern traffic system.



The State Development and Reform Commission spokesman told reporters that the key industrial technical development projects will, taking into account the needs of the national economic development and major infrastructure projects, work on the key and common technologies encountered in the industrial development, providing strong technical support for a sustained, fast, coordinated and healthy economic development. These key technical projects will be kicked off one after the other, in line with pre-phase progresses and immediate needs. A key technical project involving safe production techniques will become the first among those to be launched in the near future.

*Newsletter (The Ministry of Science and Technology)*  
*06/10/2004*

## **Sun Illuminates 230,000 Households**

Thanks to a series of electricity supply projects launched by the Chinese government, targeting at the nation's rural areas, including the State Electricity Supply for Rural Areas, Brightening Project, and foreign aided solar power projects, electricity eventually radiates its warmth and light into 230,000 rural households. With an investment over RMB 3 billion, solar energy projects have benefited the provinces, cities and autonomous regions in the west region, as well as some parts in the middle and east sections.

China's renewable energy program, jointly financed by the State Development and Reform Commission, the Global Environment Funds, and the World Bank for an amount of USD 25.5 million, has so far extended power grids to 84,000 households dwelling in no-electricity areas in Inner Mongolia, Gansu, Xinjiang, Tibet, Qinghai and Sichuan. The RMB 2.6 billion worth state electricity supply project brings electricity to 78,000 households in Gansu, Inner Mongolia, Xinjiang, Tibet, Qinghai, Sichuan and Shann'xi. Other electricity supply initiatives, including the RMB 40 million worth Brightness Project, Tibet A'li Project, Silkroad Brightness Project financed by the Dutch government, China-Japan Green Energy Cooperation Project financed by the Japanese government and other solar power projects, have put an end to the no-electricity history of nearly 70,000 households dwelt in Gansu, Inner Mongolia, Tibet, Hebei and Xinjiang.

*Business weekly*  
*July 26 to August 1*

## **Nation promotes renewable energy projects Entrepreneurs honoured with funds, tax cuts**

*By Fu Jing*

Entrepreneurs investing in renewable energy projects will not only enjoy preferential loans and tax policies, but also funding support from developed countries, according to a recently unveiled government regulation to develop the world's largest clean-development market.

But the new opportunities may also mean great challenges for Chinese investors. The regulation was part of the Kyoto Protocol adopted on December 11, 1997. It is being devised to assist developed countries in fulfilling their commitments on emission reduction. At the same time, the protocol allows



industrialized countries to earn emissions credits from their investments in emission-reducing projects in developing countries.

The new regulation on projects aims at lessening greenhouse gas emissions with advanced technology and capital from developed countries. It was recently approved by the National Development and Reform Commission(NDRC) and the Ministry of Foreign Affairs.

The clean development mechanism regulation took effect on June 30. It puts in place qualification requirements for new projects in terms of their energy consumption. “It’s the rules for enterprises and developed countries to be involved in clean development mechanism projects,” said Gao Guangsheng, director general of the National Co-ordination Committee for Climate Change.

Only Chinese enterprises and companies owned by Chinese investors can apply for clean development projects, according to the regulation. Priority will be given to projects aimed at improving energy efficiency and exploration of new and renewable energy sources, said Gao. Renewable energy refers mainly to water, wind, solar, biomass, geothermal and marine-based energy. China is the largest potential clean-development market in the world. It makes up about half the world’s total, analysts say. That’s partly due to the country’s heavy reliance on coal and its lack of up to date energy efficient technologies and renewable energy sources.

In 2003, China consumed 26.7 per cent of the world’s steel output. Meanwhile, its domestic oil consumption rose 10.15 per cent year-on-year to 252.31 million tons. It is the world’s second-largest oil consumer, after the United States.

Currently, China has about 20 small-scale projects that include hydropower, wind farming, energy-free refrigeration, municipal waste incineration for power generation and sugar-house, waste-based organic fertilizer production to avoid methane emissions.

After years of efforts, China has made substantial progress in the development of renewable energy, but still lags behind developed countries, and even some developing nations such as India and Brazil, said Xu Dingming, director of Energy Bureau of NDRC.

“Effective policies and legal systems must be formulated to identify the strategic status of the development of renewable energy in the growth of national economy and ensure the rapid development of related industries,” Xu said.

Highlighting the significance of legislation on the development and utilization of renewable energy, he said legal support must promote the rapid growth of the nation’s energy industries and help improve the structure of energy use to play an increasingly important role in the nation’s sustainable economy.

Duan Ning, director of China Cleaner Production Centre, said besides the government’s promotion, individual enterprises should actively seek energy efficient production to cut energy consumption.

The centre is affiliated with the State Administration of Environmental Protection. “Currently, most enterprises do not have enough motivation to develop energy-efficient production because they lack funding stimulus,” Duan said. Most experts agree that China has abundant reserves of sustainable energy. Greenpeace said in a research report named Wind Force 12 that China’s wind energy reserves will surpass the total amount of China’s current power generation in the future.

The report predicts by 2020, China’s electricity generated by wind energy could reach 14 per cent of the global wind energy outputs.



*Shanghai daily June 18th*

## **Pudong hits zero target on garbage**

*Yan Wenfang*

PUDONG has reached the goal of “zero landfill” of residential garbage, well ahead of the city’s 2010 schedule, officials with the Pudong Solid Waste Administration Office said yesterday. They said the office has achieved the state-designated task of detoxification and recycling of garbage cinders after incineration. As a result, no untreated garbage or toxic garbage cinders are buried in Pudong landfill sites, said Chen Weiwei, deputy director of the office. “We are not only ahead of the city’s plan but taking a lead in the country,” he added. Chen said Pudong’s technology might be promoted to the whole city. The new treatment now under test solves the problem of pollution caused by garbage cinders and makes it possible to reuse the cinders to produce construction materials. “The bricks made of garbage cinders have passed quality inspection and we will start trial production this year,” said Dr Xia Yueqing, who leads the research group. About half the garbage sent to landfill sites in the city is untreated, without sorting out nonbiodegradable and toxic substances. Last year Pudong produced about 800,000 tons of garbage.

*Shanghai Daily, July 31*

## **Treatment of medical waste centralized**

*Yan Wenfang*

THE city will charge over 4,200 local medical facilities for treating medical waste and close down the facilities’ own waste incinerators when the centralized medical waste disposal system starts to operate mid next year, the Shanghai Environment Protection Bureau announced yesterday. A fee schedule for treating the waste and regulations on how hospitals will be monitored will be announced at the end of this year, said Sun Jian, the bureau’s deputy director. “It (the fee) will very likely be set up according to the number of beds that hospitals provide for patients,” Sun added. Shanghai Environmental Protection (Group) Company, which owns the new waste treatment center, will assume full responsibility for profits or losses while the local government won’t provide financial aid. “The center applies Germany technology and will be the largest of its kind in the country with a total handling capacity of 26,000 tons a year,” said Jin Zhengji, the company’s manager. He said that he is quite confident about the future owing to the prompt steps that the government has taken to facilitate the project. Medical waste refers to appliances used in operations and excised human organs which have been traditionally treated by each hospital and tend to create air pollution due to the unregulated and rough treatment. When it is completed next year, the new hazardous wastes disposal center situated in northwest Jiading District will centralize the collection and recycling of all medical waste created across the city.



*Beijing Time 2004-07-20 09:49*

## **Baishan city to be titled "Int'l Mineral Water City"**

The International Foundation for the Protection of Drinking Water will grant Baishan City in northeast China's Jilin Province the title of "China International Mineral Water City" in August.

The ceremony would be held during China's first festival of mineral water in Baishan, themed "Mineral water of Baishan, the source of health", from Aug. 18 to 20.

Meanwhile, the festival would also hold an international forum on mineral water protection and utilization and arrange visits to the mineral water sites and drinking water enterprises.

Located at the foot of Changbai Mountain, Baishan boasts a water storage totaling 8 billion cubic meters and its forest coverage rate amounts to 83 percent.

Baishan is one of the world's richest regions of mineral water along with the renowned Alps and the North Caucasus. According to the latest research, the city has detected nearly 200 mineral water source sites with the daily exploitation of 200,000 cubic meters.

Two major Chinese drinking water companies, the Wahaha and Nongfu Mountain Spring, have set up factories in Baishan with an annual output of 1 million tons. However, the present utilization is no more than one percent.



## Science & Technology

*China Daily, 07/15/2004*

### **Scientists to be honoured**

Three outstanding Chinese bioscientists – named as Wu Min, Li Jiayang and Zhang Yaping – will be awarded the “Biological Science Prize” at the 10<sup>th</sup> SCBA International Symposium, which will be held at the Beijing International Convention Centre from July 18<sup>th</sup> to July 23.

Hundreds of bioscientists from North America, Australia, Europe and Asia will be present at the symposium. Academicians from Chinese Academy of Science will attend as well.

*Beijing today 07/09/2004*

### **Beijing Seeks Hi-Tech Industrial Projects**

Beijing has launched its first public recruitment of hi-tech industrial projects in a bid to promote the capital's development of modern manufacturing, according to an announcement by the Beijing Municipal Commission of Development and Reform on Tuesday.

State-owned enterprises, private companies, as well as joint-ventures and non-governmental economic organizations are all qualified to declare hi-tech projects to the commission. The government will grant selected projects wide-ranging support in terms of favorable policies and capital backup.

According to Xie Jianhua, director-general of the commission's finance department, the move focuses on the fields of electronic information technology, automobile accessories production, biological engineering and new medication, especially highlighting the development of the software industry and electronic automobile industry.

“The move will further integrate the capital's industrial structure. It will help the shift of governmental and social investment from the current overheated real estate sector into the high-potential industries of hi-tech and modern manufacturing,” Xie said. The final selected hi-tech projects will be filed in the Beijing Regional Industrial Development Project Pool. Through the governmental-founded platform, they will be promoted regularly to both domestic and overseas investors. In addition, the Beijing Municipal Commission of Development and Reform will provide support by offering risk investments and reductions on interest credit and loans.

### **China to establish Joint Technology Park in Austria**

China will establish a Joint Technology Park in Austria under a document signed here on June 2.



A visiting Chinese delegation signed a memorandum of understanding on the project with the Austrian government.

Chinese vice-minister of Science and Technology Ma Songde, who is heading the delegation, told a press conference after the signing that the Chinese government has always considered the development and industrialisation of high technologies very important. Ma said the establishment of the park would benefit both countries.

The project was first proposed by the Chinese Ministry of Science and Technology. It aims to build a platform for Chinese high-tech companies to enter the European and international markets.

*China Daily, 07/17/2004*

## **Nobel winners named science gurus**

*Cui Ning and Fu Jing*

Six Nobel Prize laureates on Friday started working as academic advisers for China to help sharpen the country's research edge in life science and biological technologies.

The life science gurus are employed as advisers for the National Institute of Biological Science (NIBS).

With overseas talent forming its research backbone, the NIBS's establishment last year was regarded as a major government strategy to catch up in the life science field. Together with six Nobel winners, including Norman Borlaug and Robert Huber, 12 leading overseas Chinese researchers and domestic experts have also joined the academic adviser team at NIBS, which is sponsored by the Beijing municipal government.

An academician at the US Academy of Sciences, Wang Xiaodong, said the consultants will play a dynamic role in advancing research for China in the basic sciences.

"They can offer constructive suggestions for our research objectives and assess our performance," said Wang, who is Chinese and is among the youngest US academicians at the US Academy of Sciences.

The advisers are urging more basic research investment, since the Chinese Government spends much less than some other countries.

"With ample investment, well-educated research teams and improved infrastructure, China can make rapid progress very soon," said Ferid Murad, the US Nobel Prize winner. He said China has already made significant achievements in life science, citing the Human Genome Project. "Only with thriving basic research can one generate technologies in the biological industry."

Hartmut Michel, a German scientist and the Nobel Prize winner in chemistry, said biological technology will bring influences to medicine, agriculture and other areas.

He said many Chinese companies are moving forward in the field, with China representing a big market in the world.

Wang Hongguang, director of the Biological Technology Development Centre of the Ministry of Science and Technology, said China has already outlined its blueprint for the biological industry's



development in the next five to 10 years. He said biological technology may greatly propel the development of agriculture, medical science, manufacturing and other industries.

China is taking measures to develop such technology, with 1.3 billion yuan (US\$156 million) in government funds going to the sector this year. But compared to Japan, the United States and some other developed countries, China's biological technology is still in the fledgling stage, Wang said. Friday's meeting of NIBS's academic adviser team kicked off a series of events for this month and August to promote life science and the biological industry. Saturday is the Nobel Day, which features four Nobel prize winners delivering keynote speeches at the Great Hall of the People and four universities in Beijing. A forum on grain and food safety will be organized on Saturday.

Following the forum, the China Research Centre for Grain and Food Safety will be launched in Beijing on Sunday. The organizing committee of the events also said a conference in which overseas Chinese scientists will be key speakers will be organized on Monday. The organizing committee is inviting biological companies and research institutes to attend a conference August 2.

*China Daily, 07/21/2004*

## **New platform for scientific research**

*By Nicholas Ning*

A new platform may help deal with chronic duplication and lack of funding in scientific research in China. The aim of the new system is to meet the country's science, technology and social progress development demands by 2010.

The Ministry of Science and Technology released national guidelines to give scientists across the country better research conditions and allow them to share research resources, Vice-Minister of Science and Technology Liu Yanhua said Wednesday at a news conference in Beijing. The government's focus in the near future will be building a legislative framework to encourage sharing data and resources..

Sixteen cabinet departments have already created an inter-ministerial meeting system to build an innovative basic research platform. Twenty-three senior scientists are working as advisers. Liu said the idea is to address major problems facing China's basic science research. "We have made some progress in this field, but some problems are still bottlenecking our innovation," said Liu. Over the last two decades China did not have a national blueprint of basic research leading to duplicated projects, he said.

At the same time, government funding is far from enough. "So it is difficult for Chinese scientists to make breakthroughs in some key technologies in the previous years," said Liu. Liu Chuang, a senior researcher with the Chinese Academy of Sciences, said she has high hopes for the new platform. "Previously, scientific documents were separated from each other among research institutes. It was very difficult to search for specific data. Scientists had to pay to use data owned by other institutes, and it was impossible for us to buy data because our research funds were very limited," she said. "Now scientists can freely share data thanks to governmental support." The SARS (severe acute respiratory syndrome) outbreak last year and bird flu this year were catalysts for the programme, said Liu. The outbreaks sent out a clear warning that more emphasis should be put on scientific innovation.



Sources from the Ministry of Education said China's scientific brain drain can be partly attributed to the country's poor basic research conditions. The State's long-term scientific plan (2005-20) is expected to be put together later this year and the ministry will start to draft the national scientific plan for the 11th Five-Year Plan (2006-10) period, Liu said. "All this work will heavily rely on whether we have an effective basic research platform," said Liu. The idea for the platform is not entirely new. China partly started the project a couple of years ago.

In 2002, the government launched the Scientific Data Sharing Programme, part of the National Facility Information Infrastructure, aiming to maximize the efficiency of the country's investment in science and technology. Vice-minister of science and technology Cheng Jinpei said sharing data is vital to sharpen the competitiveness of Chinese researchers and scientists. Science and technology development has been hindered by inefficient data sharing and duplication of theoretical research. "We are still inefficient in using such data," Cheng said. China has built up vast reservoirs of scientific data, most of which is kept on shelves or in archives.

Meanwhile, barriers against sharing remain between different organizations, institutes and research fields. "Some basic data is just exclusively owned by a single institute and exchange is scarce between research organizations," said Cheng. Liu Yanhua said the one task of basic research platform is to facilitate data sharing. With a meteorological research team taking the lead, the data sharing platform is gradually being built around areas such as mapping, geology, agriculture and sustainable development.

*Beijing Today, 07/21/2004*

## **Beijing Seeks Hi-Tech Industrial Projects**

Beijing has launched its first public recruitment of hi-tech industrial projects in a bid to promote the capital's development of modern manufacturing, according to an announcement by the Beijing Municipal Commission of Development and Reform on Tuesday.

State-owned enterprises, private companies, as well as joint-ventures and non-governmental economic organizations are all qualified to declare hi-tech projects to the commission. The government will grant selected projects wide-ranging support in terms of favorable policies and capital backup.

According to Xie Jianhua, director-general of the commission's finance department, the move focuses on the fields of electronic information technology, automobile accessories production, biological engineering and new medication, especially highlighting the development of the software industry and electronic automobile industry.

"The move will further integrate the capital's industrial structure. It will help the shift of governmental and social investment from the current overheated real estate sector into the high-potential industries of hi-tech and modern manufacturing," Xie said.

The final selected hi-tech projects will be filed in the Beijing Regional Industrial Development Project Pool. Through the governmental-founded platform, they will be promoted regularly to both domestic and overseas investors. In addition, the Beijing Municipal Commission of Development and Reform will provide support by offering risk investments and reductions on interest credit and loans.



*China Daily 07/19/2004*

## **China should build on R&D potential**

Nobel Prize laureates and leading overseas Chinese scientists who visited China recently talk to Cui Ning and Fu Jing about ways to improve China's basic research programmes and technological development.

Nobel laureates Torsten N. Wiesel and Hartmut Michel won the prestigious prize in 1981 and 1988, respectively. They believe that in basic research, Chinese scientists can hold their own alongside their peers in other countries.

Overseas Chinese scientists, for example, those in the United States, are playing leading roles in some sectors of science and technology. The government's strategy to encourage these established researchers to return home is an ideal way to strengthen China's position in international scientific research. China has already set up many research centres in big cities, and now the government should increase its input into basic scientific research. A healthy increase in research investment, along with better-educated human resources and policies that encourage research will bring fruitful achievements.

Basic research must always lay the foundation for technological and engineering development. That's the golden rule to invigorate a country's competitiveness in science and technology.

China has already moved in this direction. But the Chinese Government has been far behind many developed countries in its commitment to research and development. China spent only US\$12.5 billion or 1.1 per cent of its gross domestic product (GDP) on R&D in 2001. In contrast, the percentage of GDP allocated to R&D in Japan, the United States and South Korea is 3.0, 2.8 and 2.7, respectively. Sufficient and sustained investment is the fundamental reason why the United States leads the world in science and technology. In this area, China is decidedly still a developing country.

Norman E. Borlaug, the well-known American agricultural scientist who won the Nobel Peace Prize in 1970, said genetic engineering technology can improve a country's agricultural potential, but has to be put into appropriate crops if it is to effectively improve a country's agriculture production. The technology must also be such that farmers can understand and, thus, implement it. For example, Borlaug said, Chinese scientists have made some achievements in developing the Bt variety of cotton. Commercialization of Bt cotton can reduce the use of pesticides and thus minimize contamination of the environment.

Cotton and other monocultured crops require intensive use of pesticides, as various types of pests attack these crops causing extensive damage. Over the past 40 years, many pests have developed resistance to pesticides. So far, the only successful approach to engineering crops for insect tolerance has been the addition of Bt toxin, a family of toxins originally derived from soil bacteria. The Bt toxin contained in the Bt crops is no different from other chemical pesticides, but causes much less damage to the environment. These toxins are effective against a variety of economically important crop pests but pose no hazard to non-target organisms like mammals and fish.

*Newsletter (The Ministry of Science and Technology)  
06/30/2004*

## **China's Supercomputer Ranks Top Ten**



The Shuguang 4000A, a supercomputer developed by the China Shuguang Computer Corp., is rated one of the world's top ten supercomputers, among 500 supercomputers recently listed by the Lawrence Berkeley National Lab under the US Ministry of Energy. The rating makes the Chinese manufactured supercomputer the first instance in the world top ten rank. Equipped with 2,560 Opteron chips made by AMD, the Shuguang 4000A is able to perform at a speed of 8.061 trillion times per second. Apart from its central processor and LINUX operation platform, the China's supercomputer's all other components are home made. The rating also makes China's supercomputer the only non-US and non-Japan made giant among the top ten.

On the list of the world's top 500 supercomputers published on November 2003, the Shenteng 6800, a supercomputer manufactured by the China Legend Group for the Chinese Academy of Sciences, was rated 14th place for its 4.1 trillion times/second computation speed. The rating also made China's supercomputer a fastest calculation machine following the US and Japan made supercomputers. Starting from 1993, the world's top 500 supercomputer rating is made every half a year jointly by the Lawrence Berkeley National Lab, the University of Tennessee, and the Manheim University.

*Newsletter (The Ministry of Science and Technology)*  
*06/30/2004*

## **Superconductor in Mobile Telecommunication**

In collaboration with China UNICOM's Tangshan Branch, Tsinghua University found the successful application of a high-temperature superconductor filter in CDMA base station on March 26, 2004. After a three-month trial operation, Tsinghua University issued an official announcement on June 22, 2004, applauding the excellent performance of China's first high-temperature superconductor filter in CDMA base stations. The development makes China the second country following the US in the world possessing a proprietary high-temperature superconductor application in mobile telecommunication.

According to the announcement, China UNICOM has inked an agreement with Tsinghua University to establish a CDMA mobile telecommunication zone with high-temperature superconductor filter applications. The agreement expects a coverage of some 100 km<sup>2</sup> using the superconductor technology by the summer of 2005. For comparison, the superconductor application can reduce mobile handsets' radiation, while improving voice quality and the system's sensibility.

A research team headed by Prof. CAO Bisong, at the Department of Physics, Tsinghua University, started from 1997 to work on high-temperature superconductor filter's applications in China's mobile telecommunication system. The research has resulted in a dozen of patent applications, and the high-temperature superconductor filter has become a proprietary technology.

*Newsletter (The Ministry of Science and Technology)*  
*06/30/2004*

## **Breakthroughs in Quantum Technology**



Based on their 7-year tireless efforts, Prof. PAN Jianwei and his collaborators, at China Science and Technology University, have recently achieved a telepathy among five photons over a limited distance. The development marks the world's first instance of five-particle entanglement and a hidden transmission between terminal quantum. The finding, reported in the July 1st issue of the journal of Science, secures China a leading position ahead of the US, France and Austria in quantum entanglement study. According to the report, one has to create a maximum possible amount of quantum entanglement between two distant places, if a distant quantum coded telecommunication or hidden transmission is to be realized. Before the said finding, a number of international research teams had been pounding on the same experiments, ended up in producing a maximum 4-particle entanglement, without luck for a 5-particle one.

With the support of the Chinese authorities, Chinese scientists, using a single-photon detector, 'observed' a special pulse phenomenon, from which appeared the world's first instance of 5-particle entanglement. Researchers told reporters that they are now working to realize the same entanglement within a distance over 10 or more kilometers. Researchers predict that the accelerated S&T development will make quantum telecommunication a practical technology in the next 5 to 10 years.

*Newsletter (The Ministry of Science and Technology)*  
*06/30/2004*

### **China's First Leukemia Testing Kit**

A leukemia testing kit, jointly developed by the Xiamen University, China Institute of Medicinal and Biological Products Quarantine, Beijing Wantai Biomedicine Co. Ltd. and the Putian Central Blood Transfusion Station, recently passed the experts' verification check. Expert panel believe that the testing technique makes an important contribution to developing recombinant HTLV and associated diagnosing testing kit. The HTLV testing kit, China's first proprietary product in the field, will greatly improve the safe blood transfusion and reduce the infection of leukemia disease. The testing kits have so far screened out two positive cases of leukemia among some 7,000 potential blood donators.

*Newsletter (The Ministry of Science and Technology)*  
*06/20/2004*

### **China's Three Major Genome Studies**

Chinese scientists will join their efforts to work on three major genome projects, said Prof. YU Jun, Deputy Director of the Beijing Genome Institute, a part of the Chinese Academy of Sciences, at a ceremony for the official opening of the Institute on May 28, 2004. The three genome projects include "Yanhuang Project" for human genetics and health issues, "Shen'nong Project" aiming at the modernization of Chinese traditional medicines; and a "Xuanyuan Project" to study the genomes of animals, plants, and microorganism.

According to a briefing, the Beijing Genome Institute will, in collaboration with the Chinese Military Academy of Medical Science, stage a liver protein genome project, and build a paring database for army's field organ transplanting. The Institute will also, joining the Institute of Microorganism and the



Institute of Biophysics, both attaching to the Chinese Academy of Sciences, create interactive platforms for microorganism genome and scale life science studies.

In the last 6 years, the Institute has, working together with other domestic scientists, completed the “Chinese volume” of the human genome project, paddy rice’s fine genome charts, and a “frame map” of domestic silk worms’ genome. The Institute is now, with their counterparts from the Denmark and the US, working on swine’s and poultry’s genome.

*Newsletter (The Ministry of Science and Technology)  
June 20, 2004*

### **Green Battery’s Life Quadrupled**

A 3W pioneering group of the Nanjing Normal University demonstrated on May 18, 2004 a one-use green zinc-nickel battery. The patented green battery has found a solution to battery pollutions while prolonging a battery’s work life.

XU Juan, a lead developer of the battery and postgraduate student at the University, told reporters that she and her collaborators used a high molecule compound to be the diaphragm, which, when the battery gets worn out, would release an alkali rich electrolyte causing no pollution. Most batteries, in current use, produce an insoluble fattish organic matter, which may impose hazardous effects on both humans and environment. XU and others use ox-nickel hydroxide as anode, rather than manganese dioxide currently employed in zinc-nickel batters, though both cathodes remain made of zinc plates. According to statistics, China is the largest nickel producing country in the world. In this context, making nickel batteries’ anode will not only guarantee a abundant supply for raw materials, but will also make the recycling of the worn-out batteries’ anodes into an ox-nickel hydroxide for recurrent use, through a simple oxidation process, possible. In addition, experts’ verification check confirms that the new battery has, at least, quadrupled its work life, compared with normal batteries.

*Newsletter (The Ministry of Science and Technology)  
June 10, 2004*

### **Joint “Bluetooth” Project**

The Dongruan Group recently launched a project to develop bluetooth protocol applications, a short range wireless connection technology. The bluetooth related products are expected for a market value equivalent to RMB 40 billion within a decade. Unfortunately the Group’s expertise in tapping up bluetooth applications sees noticeable gaps from its overseas counterparts. To address the difficulty, the Shenyang Municipal Bureau of Foreign Experts, not long ago, introduced 7 renowned overseas experts in wireless communication, computer and world marketing from Japan and Canada to assist the Group in developing bluetooth applications. Foreign experts and the group’s experts are currently working together on bluetooth products. Foreign experts’ experience is believed a valuable technical support for bluetooth software and hardware designing, testing, and verifying.



*Business weekly*  
*July 26 to August 1*

## **Gov't determined to develop biotech**

*By Jia Hepeng*

China is reshuffling its biotechnology management system and working on a long-term plan to fuel development of the sector, but industry experts say more private involvement is needed if China wants to become a true biotech giant.

The key question for the industry's development is not whether the government has increased public investment, but whether the biotech industry has developed independent and efficient research and development capabilities, said Fang Xingwang, a senior scientist of Austin based Ambion Inc. Fang is a former professor of biological chemistry at Peking University.

Xu Guanghua, minister of science and technology, announced last Monday that the State Council, China's cabinet, has decided to form a top-level leadership committee for national biotech development, which will be headed by a major State Council leader. Xu spoke to the 10<sup>th</sup> International Symposium of the Society of Chinese Bioscientists in America (SCBA), which was held between last Monday and Friday in Beijing. Xu said other major measures to boost the biotech sector in China include forming a national industrial association, working out a national development plan outlining the focus and direction of China's biotech sector in the next two decades, as well as working out a biosafety law.

The minister did not give a timetable on when to form the leadership committee or to release the biotech development plan. "The move shows that the top leadership looks at the biotech sector as a kernel area of the national scientific and economic development," Xu said.

Insiders said the committee will be chaired by Chen Zhili, who was promoted to State Councillor from the minister of education in 2003. In China, leadership committees are very powerful and created only in very crucial sectors. The established ones include Central Leadership Committee of Economic Work, Central Leadership Committee of Laws and Central Leadership Committee of Taiwan Affairs.

*Shanghai Daily, July 31<sup>st</sup>*

## **Academic institute to bolster reforms**

*Yan Zhen*

THE Hefei-based University of Science and Technology of China opened the country's first privately funded academic research institute in the city yesterday. Located in suburban Nanhui District, the Shanghai Institute for Advanced Studies is affiliated to USTC but most of its funding will come from private corporate donations.

A local real estate developer put up the first round of funding for the institute, 500 million yuan (US\$60.24 million), to build a campus for the facility. Another 200 million yuan from the developer will be used to finance daily operations, USTC officials said. An obsolete management system along with



undeveloped economic conditions in Hefei, Anhui's provincial capital, hindered USTC's ambition to become an internationally recognized first-class university.,said Zhu Qingshi, USTC's president, in explaining why the institute was set up in Shanghai. Zhu will also head the local institute. The research center, which will be run separately from USTC, will recruit top scholars from around the world, with a focus on those in the fields of pure mathematics, physics and economics. They will be given great latitude to conduct their own research without the sort of pressures professors at Chinese universities usually suffer from. Professors will be offered spots as permanent faculty members or short-term visiting scholars. Zhu says the impressive remuneration packages offered to the faculty — including high salaries, cars and houses — will ensure their academic freedom. It is only when one is free of any achievement or living pressure that scholars can really climb to the peak of their respective research fields, Zhu said.

The achievement of professors is usually linked to the number of theses they published in authoritative academic journals. The center should have 10 permanent professors and about 30 visiting scholars every year within the next five years, Zhu said. Our final target is to become cradle of China's future Nobel Prize winners, as well as to boost reform of Chinese public universities. City budgets billions for key research Zhang Jun .The city government will spend 2 billion yuan (US\$241 million) this year to support 29 key scientific research projects, including studies of small satellites and new vaccines for hepatitis, officials announced yesterday. Representatives of several research organizations signed deals with various government departments at a meeting yesterday to officially take responsibility for the projects. We expect local researchers to be more innovative because science and technology plays an important role in the city's development, Yin Yicui, deputy secretary of the CPC Shanghai Committee, said at yesterday's meeting.

Most of the 29 projects involve basic scientific research aimed at improving the quality of life in Shanghai by creating faster Internet access, new medicines and new textiles. One of the projects will attempt to build a quicker communication exchange platform that can send TV, Internet and telephone signals through small satellites. The platform, which is being worked on by Alcatel Shanghai Bell, also promises to provide new Internet-related services. The satellite scheme, which has been contracted to a local institute under the Chinese Academy of Sciences, also aims to launch a group of small satellites to achieve better regional positioning accuracy. The satellites will generally weigh less than 1,000 kilograms. Due to their relatively small size, researchers say it will take less time to design the necessary technology, they will cost less than traditional satellites, and launch times will be more flexible. They can also be used to monitor natural disasters. Another key project is a gigantic light facility to be constructed in the city's Zhangjiang High-Tech Park over the next several years to boost the country's overall competitiveness in research power particularly in life sciences. The facility, Shanghai Synchrotron Radiation Facility, will also help detect cancer in its very early stages. We expect the facility to work as a cutting-edge multidiscipline research platform in China, said Xu Hongjie, the project head. It uses state-of-the-art synchrotron radiation technology to accelerate electric particles creating laser beams that are up to 1 billion times brighter than normal lights.

*Chinese Academy of Sciences Newsletter May 2004*

## **Institute Pasteur China in Shanghai to be Built Jointly by China and France**

During his visiting in French, Chinese President Jintao Hu attended a ceremony held by the Chinese and French Governments and signed a Bilateral Agreement for Cooperation with French Premier Raffarin on 28 Jan. At the ceremony, Zhu Chen, Vice President of the Chinese Academy of Sciences



and Pilippe Kourilsky, President of Institute Pasteur of France signed a Letter of Intent for a Cooperation Framework to build Institute Pasteur China in Shanghai jointly by the Chinese Academy of Sciences and Institute Pasteur French in Paris.

Institute Pasteur France, established in 1887, keeps a long-term cooperative relation with China. This time the two sides will join efforts in building an entirely new research institute on the principle of equality, mutual benefit, cooperation and innovation. It will maintain relations with China's existing research institutes, and will share China's large facilities for public health research. Among its planned 250- member staff, there will be more than 10 French experts stationed at the Institute on a long-term basis to be responsible for all types of research subjects. Over the years Institute Pasteur has trained hundreds of researchers for various Chinese research institutes. The cooperation between Mr. Pierre Tiollais, the renowned molecular biologist and Prof. Li Zaiping of CAS Shanghai Institute of Biochemistry and Cell Biology has attained major achievements in the research on hepatitis B virus and in developing the hepatitis virus vaccine.

During last year's outbreak of SARS in China, Institute Pasteur was the first European research institute to dispatch an expert team to China. The molecular biologists and virologists from Institute Pasteur explored countermeasures together with the Chinese scientists, and through joint efforts of the two sides they were given research projects sponsored by European Union and the French Government.



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