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# **[JOINT LABORATORIES IN CHINA]**

China-EU Center for Information & Communication Technologies in  
Agriculture (CICTA), China Agricultural University (CAU)

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The Chinese S&T and innovation mechanism has been seen that development is extremely fast and dynamically, leading to China becoming a major new actor in the global system for the production of knowledge, with total amount of China's R&D expenditure in 2009 was €58,021m (a record high in history). China is seeking an equal and sustainable cooperation with international partners. Interest from abroad also grows in order to stimulate scientific cooperation with China in the form of the joint research laboratories and institutes in China.

Europe is a key partner for China in science, technology and innovation. Europe's grace history and excellence in sciences as well as its education systems attract many scholars and research collaborations between Europe and China. As The EC-China S&T Cooperation Agreement was first signed in 1998, the Sino-European cooperation shows growing dynamism, for instance, there are growing numbers of participations of Chinese partners in cooperative research projects funded by FP5, FP6 & FP7. And also with the majority of European research funding being at the Member State level, the breadth of the bilateral engagement with China is evident in research collaborations, joint laboratories, innovation activities, as well as scientific exchanges in key priority areas. Now the joint laboratories between China and Europe are going to be studied.

In this report, we would like to take four joint research centers/joint laboratories (one of them is China-USA) as case studies to show the profile of the joint labs in China.

## 1. Definition of Joint Laboratory

Presently there is no clear definition of joint laboratory in China. But it is explicitly that China will select some universities to build numbers of international joint laboratories and research centers encouraging colleges and universities to establish overseas research and development center, in order to form long-term stable partnership with advanced research institutions in the world, to jointly conduct scientific research and personnel training and to promote international cooperation and open share on large scientific equipment ([Agreement of the Ministry of Science and Technology and the Ministry of Education on Enhancing Universities' Technology Innovation Ability and Strengthening Collaborative Innovation](#)).

Electronics Navigation Research Institute (ENRI) gives a definition of Joint research as following: Joint research is a system which can be expected to produce more creative research outcomes by establishing common research themes with private companies, universities, and public research institutes and promoting research cooperatively while exchanging opinions from a standpoint of mutual equality. Compared with independent research, it must be possible to expect higher efficiency and synergistic effects ([Electronic Navigation research institute Newsletter, 2006](#)).

In the report of the cooperation between National Center for Scientific Research (CNRS) and Chinese Academy of Science (CAS) (2011), it provides four types of cooperation in CNRS, International programs for scientific cooperation (PICS), International associated laboratories (LIA), International Research Network (GDRI),

International joint units (UMI). PICS is a joint research program aimed at supporting joint research projects, which may not be a proper joint research lab.

An international associated laboratory (LIA) is created in order to structure collaboration between two research teams or laboratories (one in France and the other abroad) that already have joint publications, which is a "laboratory without walls". The relationship between the two partners is formalized through a contract signed by the heads of both organizations, with provisions covering issues such as intellectual property rights. Human and material resources are pooled to carry out the project. Teams or laboratories associated through an LIA retain their separate autonomy, status, Director and location. The LIA activities are coordinated by two co-principal investigators and by a scientific steering committee. This kind of cooperation lasts four years, and possibly renewable once. CNRS and the partner institution earmark funding for LIA projects, in addition to other resources provided by the home institutions for research on the project (<http://www.cnrs.fr/en/workingwith/LIA.htm>).

A GDRI is a scientific coordination network gathering research teams in European and non-European countries. Its activities are coordinated by a scientific committee. It aims to establish a flexible partnership bringing together several French and foreign research teams around a specific scientific topic. The cooperation lasts for Four years, possibly renewable once. The network is funded by all partners, and the resources are used towards the organization of conferences, seminars, symposiums, workshops, thematic schools or work meetings on the network's specialized topic. (<http://www.cnrs.fr/en/workingwith/GDRI.htm>).

A UMI is a full-fledged laboratory, as found in universities and research organizations. It is based in a single location, in France or abroad, and brings together researchers, students, postdocs, and support staff from CNRS and the partner institution(s). The Director of the UMI is jointly named by CNRS and the foreign partner institution(s), which can last four years, possibly renewable twice after evaluation of the UMI activity. Human and material resources are provided to the UMI by CNRS and the partner institution(s), in addition to funding from other sources, such as other research organizations, foundations, and private companies (<http://www.cnrs.fr/en/workingwith/UMI.htm>).

LIA sometimes foreshadow the creation of an UMI, which are proper joint laboratories, have the same status as CNRS joint research units (UMR) in France.

Based on the above mentioned, a joint research laboratory has the following characteristics:

(1) The partners usually come from coming from universities, public research institutes, or companies.

(2) Usually the director(s) is(are) appointed and the lab organizes a scientific steering committee.

(3)The lab should have obvious field of research.

(4) Usually the partners should sign an agreement for the cooperation.

And there are a few names, for example, joint research center, joint research laboratory, joint laboratory, international associated laboratory, International joint units, which have the similar meaning. In this report, we name it Joint Laboratory (LC) for the sake of simplicity.

## 2. General Information about Cooperation

### 2.1 Research Structures

The research structures have certain correlation with JC's early initiate stage, top-down (at ministerial/government level) or bottom-up (on institutional level). The analysis shows that various research institutes fall into one of these two categories mentioned above.

As the four Joint Laboratories(JC) we mentioned, China-U.S. Joint Research Center for Ecosystem and Environmental Change(JRCEEC) is bottom-up type, which is initiated by scientists from the University of Tennessee (UT), Oak Ridge National Laboratory (ORNL) and researchers from the Chinese Academy of Sciences (CAS), while the research structure of Institut Pasteur of Shanghai is top-down based on the agreement signed by the Chinese Academy of Sciences, Institut Pasteur and Shanghai government. The same with JRCEEC, the Center for Sino-German Cooperation in Marine Sciences (SGMS) is bottom-up, which was launched by universities/institutions. CAS-MPG Partner institute for Computational Biology features top-down research structure, because its establishment is in accordance with the agreement between CAS and Max-Planck-Society and national strategy. Here, the ratio of top-down type and bottom-up type is 1:1.

Dutch report for JC shows that most research structures were emerging from personal relationships between European professors and Chinese professors or PhD students and research structure is almost always started by committed and enthusiastic individuals ([Joint research centers in China: institutionalisation of scientific cooperation with China, in Dutch](#)). Ultimately a JRS remains a product of human effort. It is not paradoxical that in this report we just take four JCs as examples, deep investigation should be carried out.

### 2.2 Partners

With the four joint laboratories we selected as examples, the main body of partners comprises universities, institutes, companies are not involved. The number of partners is two or more than that. There is a research shows that the cooperation have been gradually changing from bilateral cooperation to multilateral collaboration.

**Table1.** Partners in different joint labs

<b>China-U.S. Joint Research Center for Ecosystem and Environmental Change (5)</b> <b>Location: Beijing</b>
<b>UT/ORNL Joint Institute for Biological Sciences (JIBS)</b> <b>UT's Institute for a Secure and Sustainable Environment (ISSE)</b> <b>UT's Center for Environmental Biotechnology (CEB)</b> <b>Institute of Geographical Science and Natural Resources Research,CAS (IGSNRR)</b> <b>Research Center for Eco-Environmental Science,CAS (RCEES)</b>
<b>Institut Pasteur of Shanghai (IPS) (3)</b> <b>Location: Shanghai</b>
<b>Chinese Academy of Sciences</b> <b>Shanghai Municipal Government</b> <b>Institut Pasteur</b>
<b>Center for Sino-German Cooperation in Marine Sciences (SGMS) (5)</b> <b>Location:Qingdao</b>
<b>Ocean University of China (OUC)</b> <b>University of Bremen</b> <b>University of Kiel (CAU)</b> <b>Leibniz Center for Tropical Marine Ecology (ZMT)</b> <b>Helmholtz-Centre for Ocean Research Kiel (GEOMAR).</b>
<b>CAS-MPG Partner institute for Computational Biology (2)</b> <b>Location: Shanghai</b>
<b>Max Planck Society</b> <b>Chinese Academy of Sciences (CAS)</b>

## 2.3 Legal Status

According to the agreement of the Ministry of Science and Technology and the Ministry of Education on Enhancing Universities' Technology Innovation Ability and Strengthening Collaborative Innovation, China would like to select some universities to build a number of international joint laboratories and research centers to encourage colleges and universities to establish overseas research and development center, to form long-term stable partnership with advanced research institutions in the world, and to jointly conduct scientific research and personnel training and promoting international cooperation and open share on large scientific equipment. But so far, there is no clear definition of *Joint Laboratory* in Chinese Law and joint laboratory is not an independent legal entity. It is just a research entity relying on universities or research institutes ([The Legal Status of Joint Laboratory under Chinese Laws. He Jing, November 2012](#)).

From the references we collected, only three labs, Fraunhofer Mobile Communications Lab MCI (at HHI, Berlin), Sino-German Joint Institute for Software

Technology JSI (at BUAA, Beijing), established by Fraunhofer in Germany and Chinese universities (Sino-German Joint Institutes for Information and Communications, Dr. Ulrike Tagscherer) and Institut Pasteur of Shanghai (IPS) are mentioned as legally independent research institutes.

EU and China agreed to explore the mechanisms to support the work of joint laboratories between China and EU Member States, to investigate ways to foster broader multilateral collaboration, and to strengthen their contribution to innovation cooperation (EU-China Research and Innovation Collaboration Week Beijing, 12-16 November 2012).

## 2.4 Activities of Cooperation

Most of the laboratories are designed to benefit scientific research, global scientific exchange, application of projects and a training center for international postdocs and students. And some labs also function as an incubator for innovative projects and technology transfer (Kavli Institute for Astronomy and Astrophysics, <http://kiaa.pku.edu.cn/>; China-Italy Technology Transfer Centre, <http://www.eupic.org.cn/>). The four main activities are as following.

### (1) Research Collaboration

This is most important point for cooperation, aiming to produce more creative research outcomes by establishing common research themes. By way of cooperation, the advantages complementary can come true among partners. Some innovative ideas can emerge during the cooperation.

### (2) Academic Exchange

Effective mechanisms for information exchange and academic discussion will be established by all parts of the "Joint Research Center". The scientists will be scheduled to visit the partner's laboratories for project research and information exchange. The research facilities, field observational sites, data resources will be shared among the collaborators for joint publications of high-impact international scientific articles. A variety of international conferences and workshops will be organized.

### (3) Student Education

The "Joint Research Center" will provide students and young scientists with extensive opportunities for academic visiting, information exchange, experimental study in the laboratories of the collaborators, manuscript writing, and co-advice on thesis.

### (4) Technical Transfer and Trainings

Sometimes, technology transfer and training classes for specific skills and tools will be organized to make innovative and practical technology being industrialized and promote technology progress

### 3. Management and Operation Mechanism

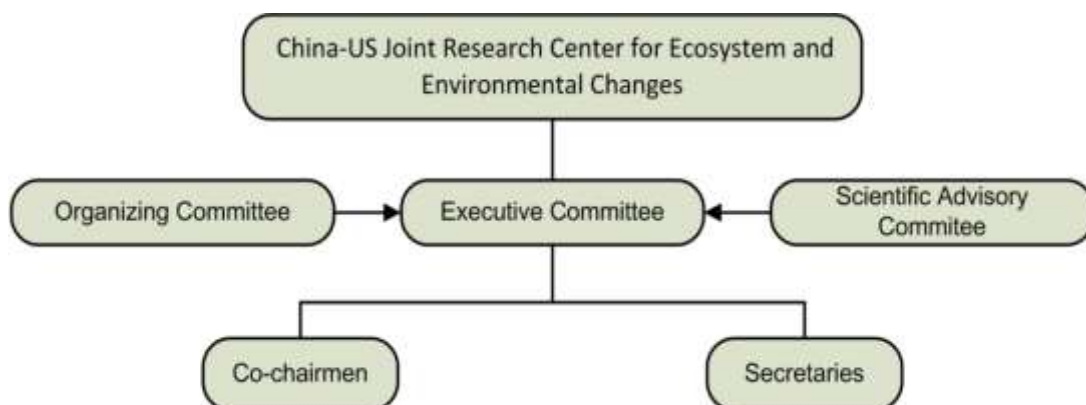
There is currently lacking of laws and regulations in China about how the labs operate, and the concrete articles about management and operation are usually provided in an agreement, which is secret in China. Based on rules of other kinds of laboratories, and the real status of joint research laboratories the operation mechanism and management are summarized.

#### 3.1 Organization Structure and Operation

Usually, a laboratory includes a Laboratory Management Committee, who is responsible for the day-to-day operations of the laboratory, and an Academic Committee, who is responsible for the academic activities of the laboratory.

##### (1) The China-US Joint Research Center for Ecosystem and Environmental Changes (JRCEEC)

On July 20, 2006, US and Chinese scientists signed an agreement establishing the framework for the China-US Joint Research Center for Ecosystem and Environmental Change. In the initial phase, which extends from October 2006 to September 2011, the JRCEEC will focus on research related to four themes about ecosystem. Maybe this organization structure fits for joint research centers with one research group.



**Figure 1.** Organizational Chart of China-US Joint Research Center for Ecosystem and Environmental Changes

The Joint Research Center will be led by an Executive Committee, with the support of an Organizing Committee and a Scientific Advisory Committee.

The Organizing Committee is composed of the high level leaders in each government's agencies or departments whose portfolio deals with the broad issues of climate and environmental changes and policy-level decisions. The role of this committee



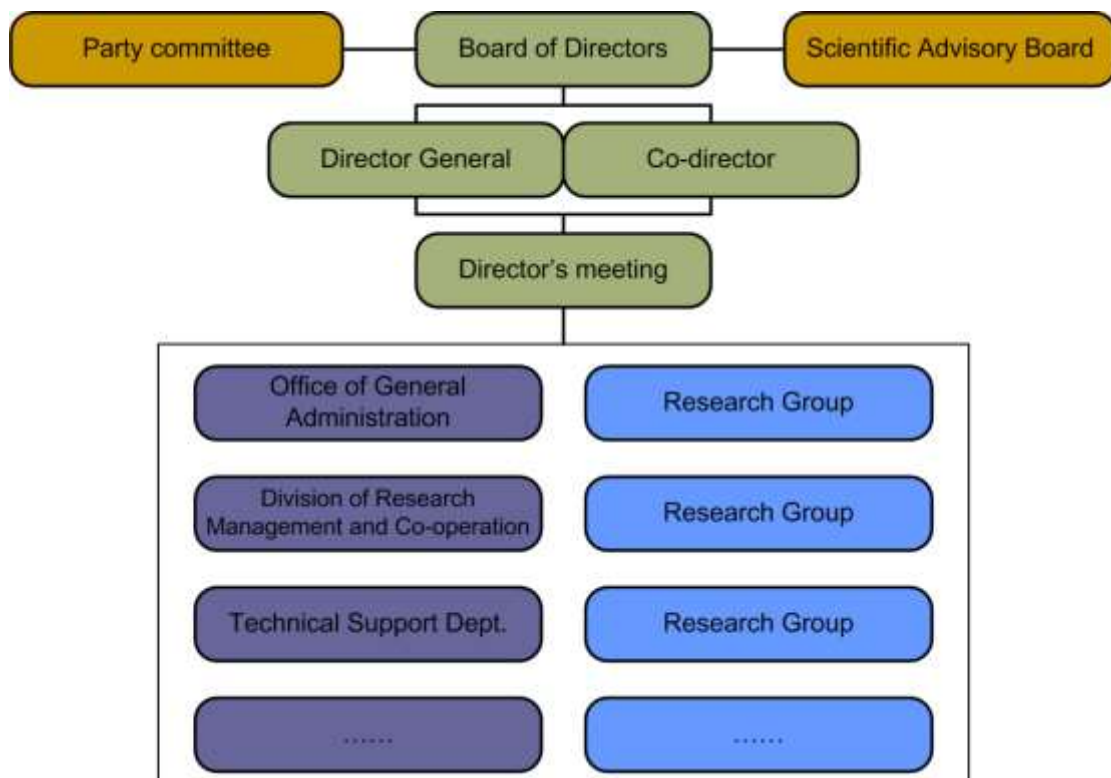
is to look at the “Big Picture” and assures that the Advisory Committee establishes a balanced and effective set of action plans, and that communication and synchronization of effects are reasonable and successful.

The Scientific Advisory Committee includes senior, highly regarded scientists within each discipline. This committee will play a critical functioning in making the long-term research plans and reviewing their progresses.

The Executive Committee includes co-chairmen and secretaries, and is responsible for assuring the success of the projects by monitoring the progress and integration of the suggestions by the Scientific Advisory Committee and the Organizing Committee (The China-US Joint Research Center for Ecosystem and Environmental Changes, <http://irceec.utk.edu/about.html>). In this center, totally there are seven co-chairmen, selected from each partners equally (one from a partner), who are responsible the issues coming their own units.

## (2) Institut Pasteur of Shanghai (IPS)( <http://english.shanghaipasteur.cas.cn/>)

Institut Pasteur of Shanghai (IPS) was founder by the Chinese Academy of Sciences, Institut Pasteur and the Shanghai government in 2004. It is an independent, non-profit life sciences institute and aims to contribute to a better public health in China and in the world through excellence in research, through sharing of our knowledge and translation of our science to concrete public health tools.



**Figure 2.** Organization Structure of Institut Pasteur of Shanghai

The Board of Directors is IPS's managing sector, which comprises four members, three coming from members with equal number in each partner, besides, one director coming from third party as independent director. Board of Directors is responsible the day-to-day business in the institute under the lead of director and director's meeting.

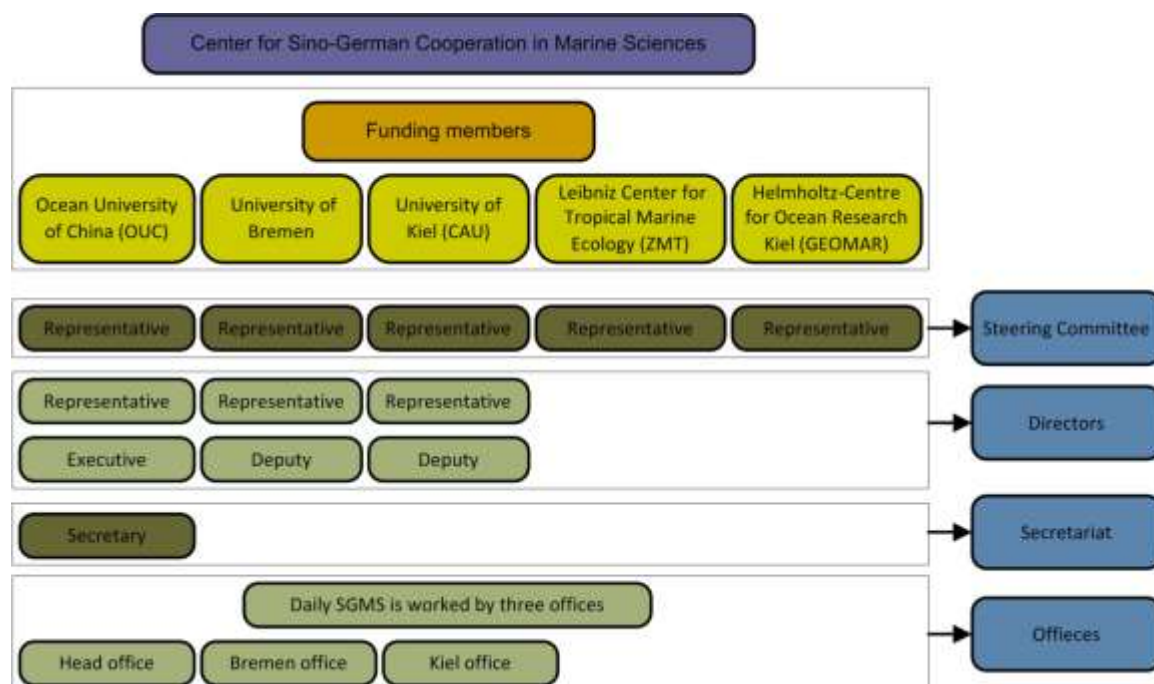
Scientific Advisory Board leads the scientific research. Usually the members of Scientific Advisory Board are leading scientists in the fields related from around the world. Together, the Scientific Advisory Board helps guide the future of the institute's brand, lending their expertise and knowledge of the rapid changes in their specific fields directly into the research and development process.

As an independent research institute supported by one partner of the Shanghai government, IPS is an independent legal entity and owns legal representatives, meanwhile, there is Party Committee in the organization structure. These two points are is different with other joint centers, which are based on and affiliated with university or other institute.

### **(3) Center for Sino-German Cooperation in Marine Sciences (SGMS)**

**(<http://www2.ouc.edu.cn/sgms/index.asp>)**

The Center for Sino-German Cooperation in Marine Sciences (SGMS) was jointly created in 2011 by the Ocean University of China (OUC), the University of Bremen, the University of Kiel (CAU), the Leibniz Center for Tropical Marine Ecology (ZMT), and the Helmholtz-Centre for Ocean Research Kiel (GEOMAR). The establishment of the SGMS is an extension of the Sino-German Initiative on Marine Sciences funded by the German Federal Ministry of Education and Research (BMBF) and the Ministry of Education of the People's Republic of China (MOE). The SGMS strives to continuously enhance the cooperation between the above mentioned institutions of both countries in the fields of higher education, research and development in marine sciences. The SGMS head office is hosted by the Key Laboratory of Physical Oceanography, MOE, at the OUC.



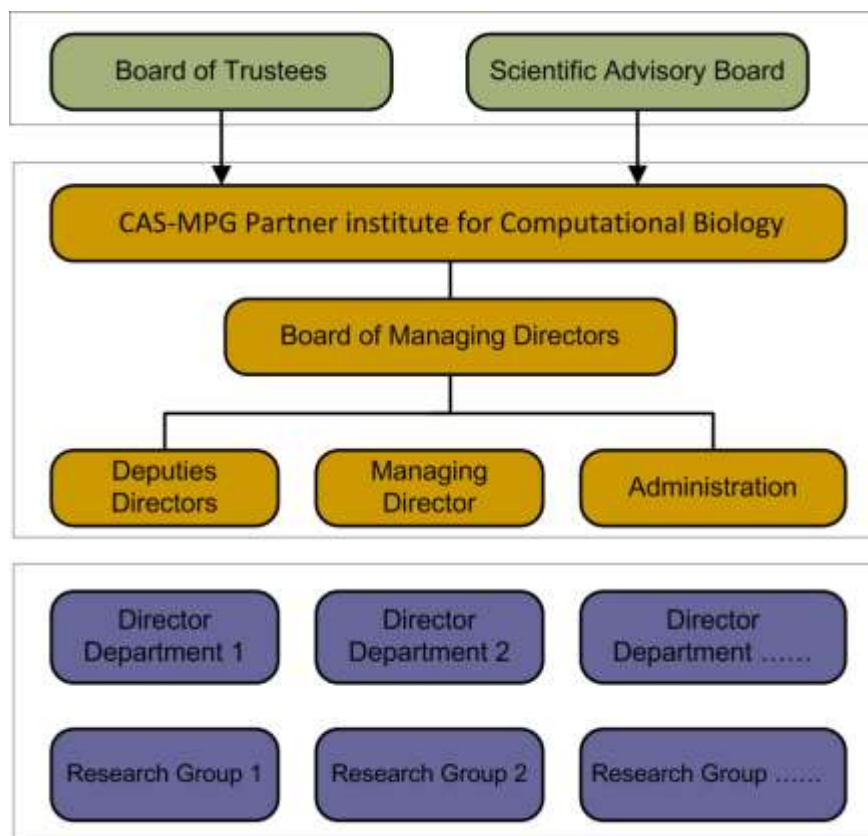
**Figure 3.** Structure of Center for Sino-German Cooperation in Marine Sciences

The Steering Committee (SC) is the supreme organ of the SGMS, which is composed of an equal number of four members from each country representing the founding SGMS universities and institutions. The SC will compile the development strategy and the overall working tasks of the Center, and will meet alternatively in China and Germany. The SC shall receive an annual report of the Center's activities from the Directors. The Sino-German Partners will invite additional members from ministries and other organizations for the SC Meeting whenever appropriate. All the decisions of the SC shall be made by consensus.

The board of directors comprises six members coming from OUC, University of Bremen and University of Kiel, each with two directors, one is general director and the other is deputy director, and the executive director is from Ocean University of China. The board of directors is responsible daily work. The Center includes a Secretariat to support the work of the Executive Director at the head office.

#### **(4) CAS-MPG Partner institute for Computational Biology** <http://www.picb.ac.cn/introduction.htm>

CAS-MPG Partner Institute for Computational Biology is founded by the Max Planck Society and the Chinese Academy of Sciences jointly. The procedures of the establishment of the institute as well as of the recruitment of the directors follow the model of the Max-Planck-Society. The institute have 4 departments and 4 Independent Research Groups (each group 5 -10 scientists / postdocs / students) and allow further modification and growth. This kind of structure is suitable for a joint research center with more than one research group. The structure of organization is as shown in figure 4.



**Figure4.** Structure chart of CAS-MPG Partner institute for Computational Biology

The research center is managed by statute under the scientific and administrative directorship of the Board of Directors. It is assembled of scientific members of the institute who are at the same time departmental directors (In Germany, the directors are appointed by the senate of the Max Planck Society). The Board of Managing Directors of the Institute consists of a Managing Director, who is selected from the whole world, and two deputies. The Board of Managing Directors runs the daily business of the institute and implements the decisions of the Board of Directors. In this, it is assisted by the office of the managing board of directors and the administration. Usually the position of the center's managing director changes from one director to the next every two or three years.

The administration aims at supporting the scientists by providing all necessary administrative and technical support such as personnel, accounting, purchasing and technical services. A mechanical and an electrical workshop as part of the Technical Service Department construct and maintain scientific devices. The final goal is to strengthen and support the scientific departments and research groups by the provision of unbureaucratic, quick and focused work.

In order to ensure the high quality and productivity of the center' research on a long-term basis, the center routinely undergoes scientific evaluations by independent scientific advisors – the so-called Scientific Advisory Boards. All of the members of Scientific Advisory Board come from other research institutions and most of them are

from abroad, and they evaluate the research work according to world's standard every three years.

The joint Board of Trustees, who are influential members of society coming from politics, economy, science and media, meet once a year to inform themselves about the developments at the center in general. With the help of this information the trustees provide the center with advice in science, social and science-political issues.

### **(5)General Structure of Joint Laboratory**

From the structures mentioned above, the general structure usually comprises board of directors, steering committee or scientific advisory committee, management office. All of the members in board of directors, steering committee or scientific advisory committee are selected every 3 to 5 years.

The directors, selected from each partners, compose the board of directors, which takes the responsibility of daily issue under the lead of executive director or managing director, and day-to-day work are carried out by management office or secretary. In some laboratories, the board of directors should submit report to steering committee or scientific advisory committee every one or two years.

The steering committee and the scientific advisory committee are similar in different joint laboratories. They help to guide the future of the institute's brand, lending their expertise and knowledge of the rapid changes in their specific fields into the research and development process. But in the model of Max Planck Society, the board of trustee functions as steering committee or scientific advisory committee in other joint laboratories. The Scientific Advisory Board routinely implements scientific evaluations for the center. Basically, the members of steering committee or scientific advisory committee are selected from the whole world, who enjoy high reputation in their research field and/or in society.

## **3.2 Management**

The joint lab management includes many aspects, like daily work, personnel, fund, achievements, and so on.

In a joint laboratory, the director usually takes responsibility of the management, and the administration department takes the day-to-day work.

With respect to fund, the board of directors under the lead of director should draft the budget report and submit to steering committee to be considered. At the end of each year, the fund report should be evaluated by a staff authorized by partner's director.

As a joint laboratory is not legally independent, the staff working for the lab usually still belong to his/her original organization.

The common achievements acquired under the framework of the lab should be released. But before publication, the partner reaching the result should let other parties

know the achievements. When the research results are published, the relationship with the joint lab should be stated in artworks or patents, or others. All partners own the property of the common achievements.

## 4. Priority Fields of Co-operation

The scientific disciplines of these institutes or labs vary widely, ranging of social sciences to medical and technical sciences. Based on the list of 125 joint labs we collected and the classification from EURAXESS Links China, the distribution of research fields is analyzed. It shows that most of labs focusing on Engineering, Production Systems & Services and ICT, while the fundament research, mathematics & formal sciences, and social sciences and humanities are not very welcome by researchers to initiative joint labs.

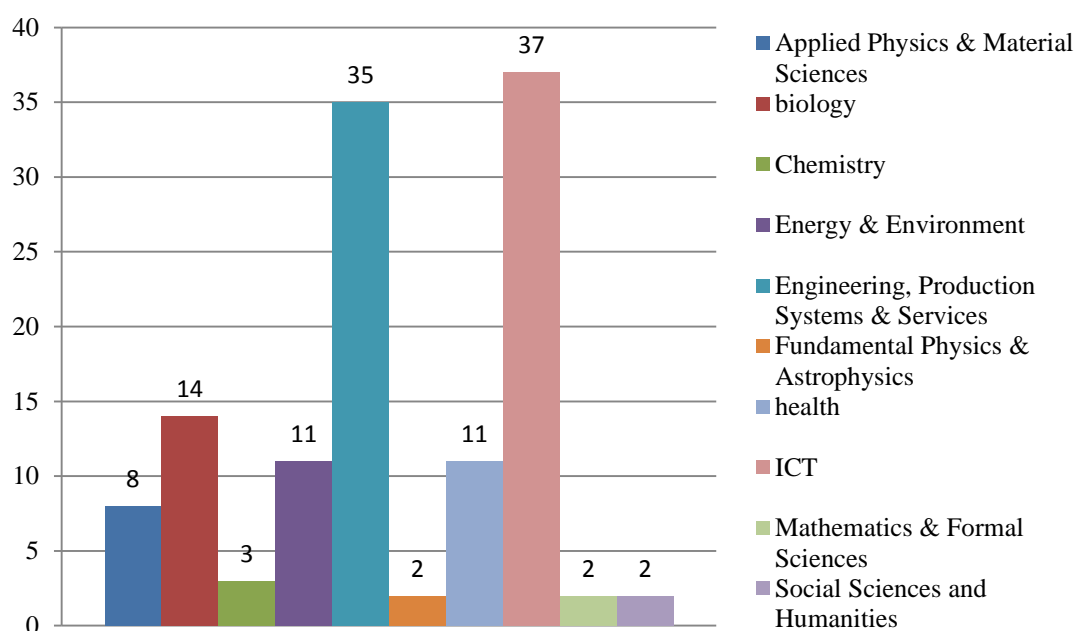


Figure 5. Distribution of research field

## 5. Human Resources

Human resources are extraordinarily important for each group. In a lab, it usually includes fulltime staff, part-time staff, visitors, exchange students, pos-doctor, doctor students, and master students, internships, and also with Administration and Support Staff.

### 5.1 Staff Distribution

Table2 shows the distribution of three joint labs, from which it can be noticed that usually the sum of Prof. and associated Prof. accounted for about 20% of the total researchers. The percentage of Doctor and Master is from 45% to 50%, who can be seen as the backbone force for research. The number of pos-doc is very small, and the ratio is

about 5%. The percentage of staff for daily management does not exceed 10% according two labs' data.

Very reputable and senior scientists play an important role in the development of labs. According to data from Institut Pasteur of Shanghai (IPS), among the 35 fulltime professors, 11 of them are CAS 100 talents, 1 is Young Outstanding Scientist entitled by NSFC, one is Chinese 1000 Talents.

**Table 2.** Researchers distribution in joint labs

Labs		CAS-MPG Partner institute for Computational Biology		Institut Pasteur of Shanghai (IPS)		Sino-French laboratory for computer science, automation and applied mathematics	
<b>fulltime staff</b>	Prof.	41	19.71%	35	15.22%	46	13.77%
	associated Prof.	1	0.48%			36	10.78%
<b>part-time staff</b>	Prof.	11	5.29%	7	3.04%		
	associated Prof.						
<b>visitor</b>		6	2.88%			21	6.29%
<b>research assistant</b>		24	11.54%	51	22.17%		
<b>student</b>	master	29	13.94%	17	7.39%	152	45.51%
	doctor	68	32.69%	69	30.00%		
<b>exchange student</b>	master	7	3.37%	17	7.39%		
	doctor						
<b>pos-doc</b>		5	2.40%	11	4.78%	16	4.79%
<b>Administration</b>		16	7.69%	23	10.00%	N/A	
<b>other</b>						63	18.86%
<b>Total</b>		208		230		334	

## 5.2 Staff Exchange

In this section, we mainly focus on the researchers from other countries working in China. According to the data we collect, Table 3 shows the situation existing in Sino-French laboratory for computer science, automation and applied mathematics. And to some degree it is an exception, because looking at those joint laboratories we collected, few foreign researchers work in China.

**Table3.** Sino-French laboratory for computer science, automation and applied mathematics

	Prof.	associated professor	pos-doc	Doctor/Master Student	visitor	other
<b>Number of European Research in China</b>	18	13	6	24	3	19
<b>Total</b>	46	36	16	152	31	63
<b>Percentage</b>	39.13%	36.11%	37.50%	15.79%	9.68%	30.16%

## 6. Funding

The funds for regular operation of Joint Laboratory will be mainly obtained from their respective governments. For most of the joint Laboratories in China, the fund usually comes from European Commission (EU), CNRS, the National Natural Science Foundation of China (NSFC), the Ministry of Science and Technology (MOST), the Chinese Academy of Science (CAS), local government, companies, and so on. Because of the low transparency, it is difficult to know the amount of fund that labs get from their sponsors.

## 7. Advantage and Problems

### 7.1 Advantage

- (1) For other countries, setting up a joint laboratory in China provides access to relevant data, Chinese research funds, research facilities, Chinese talent, and so on, and vice versa.
- (2) Joint laboratory in China is also a pull factor for foreign researchers and students to China with a lower threshold.
- (3) A great advantage is forming an effective and long-term stable platform for the exchange of knowledge and researchers.

### 7.2 Problems

Although China has long international collaborations in the field of research and education develops speedily, but joint laboratories in China are relatively new. There is



currently lacking of laws and regulations in China about how the labs operate. The lack of uniformity creates an opaque landscape. There is a lot of confusion among both Chinese and foreign parties what is or is not possible within the limits of the Chinese rules (*Joint research centers in China: institutionalisation of scientific cooperation with China, in Dutch*). This situation slows down and sometimes limited the cooperation of a joint institution. In some cases, projects couldn't officially be off the ground because the national legislation is not yet in place.

A lack of effective communication between the foreign and Chinese partner (s) is a stumbling block that often appears. It was not only refers to a language barrier but also on a lack of visibility and presence of the foreign party (*Joint research centers in China: institutionalisation of scientific cooperation with China, in Dutch*).

And other two problems, Management of labs could suffer inefficiency resulting from long-time leave of institute director. And in most situations, the labs don't have basic and special fund and need a number of national projects to gain own profile.

## 8. Case

In this part, we would like to take Sino-Danish Center for research and education as an example to show how a joint lab operates (<http://www.sinodanishcenter.com/>).

### 8.1 Introduction

The Sino-Danish Center for Education and Research (SDC) is a joint project for education and research, which is a top-down research center initiated by Danish Ministry of Science. In 2008, the Danish Ministry of Science, Technology and Innovation published its Knowledge-based Strategy for Collaboration between Denmark and China in the fields of Research, Education and Knowledge. An important outcome of the strategy was the creation of a Sino-Danish University Center in China.

The university center should be a platform for research collaboration within areas of high relevance to future development of both Chinese and Danish society. In May 2008, a Danish delegation visited several Chinese universities with the purpose of identifying a strong partner.

Based on a series of negotiations during 2008, the Danish Ministry of Science, Technology & Innovation and Danish Universities decided to develop a Sino-Danish Center for Education and Research (SDC) in partnership with the University of Chinese Academy of Sciences (UCAS). Sino-Danish Center is located at UCAS' Olympic Village Campus, centrally located in Beijing.

### 8.2 Mission and Aims

The mission of the Sino-Danish Center is to establish unique collaboration between Denmark and China on research, master education and PhD training. By providing an

efficient organizational structure and a modern physical environment SDC aims at:

- Achieving excellence in graduate education and research by combining the best competencies, teaching traditions and research environments in the two countries.
- Increasing mobility of students, researchers and scientific personnel between Denmark and China.
- Enhancing Sino-Danish scientific and technological collaboration by creating a platform for joint education and research activities.
- Strengthening linkages between research, educational establishments and private companies in Denmark and China.
- Developing and commercializing new knowledge and technology to the benefit of both countries with due respect to intellectual property rights.
- Increasing networking and cultural understanding between Denmark and China.
- Facilitating mutually beneficial interaction between universities and private companies.

### 8.3 Organization and Management

The supreme decision-making body of SDC is the Joint Managerial Committee (JMC). JMC consists of ten high level representatives equally divided between Denmark and China. JMC appoints the Chinese Principal Director and the Danish Executive Director, who are in charge of SDC's daily management. Two administrative units – one is in China and another is in Denmark - support the two directors in their work.

Each of SDC's five research themes is coordinated by a Chinese and a Danish Principal Coordinator (PC), who are responsible for developing the research and educational activities. Some research themes are developed into subthemes each headed by a Principal investigator (PI).

Within each area a Chinese and a Danish Head of Educational Programme (HEP) will take care of the overall planning of educational activities.

The SDC Academic College (SDCAC) ensures coordination of research and exchange of knowledge between different research themes. SDCAC comprises the Principal Coordinators (PC) and the Head of Educational Programmes (HEP) from both the Danish and Chinese side.

Two advisory boards, the International Scientific Advisory Board (ISAB) and the Industry Advisory Board (IAB) will advise JMC and the two directors on matters related to research development and industry collaborations. To allow students influence a Student Forum will be established.

**Table4.** Principal Coordinators for each research theme in SDC

Danish Principal Coordinator	Chinese Principal Coordinator
<b>Water and Environment</b>	
<b>Peter Englund Holm</b> Professor Department of Plant and Environmental Sciences University of Copenhagen peho@life.ku.dk	Hu Zhengyi Professor and Vice Dean College of Resources and Environment GUCAS zhyhu@gucas.ac.cn,
<b>Sustainable Energy</b>	
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## 8.4 Research Field

Both the Danish and the Chinese partners have worked on identifying research themes of interest to both parties. After consulting the domestic research environments, it has been agreed upon that the initial research activities of SDC fall within five major research themes, some of which are further divided into subthemes. The five themes are:

- Water and Environment
- Sustainable Energy
- Nanoscience
- Life Sciences

➤ Social Sciences

The selection of themes is based on the presence of complementary strengths and significant growth potential. Chinese and Danish researchers collaborate within each research theme on joint research projects including design of experiments, analysis and interpretation of data as well as the publication and commercialization of research results.

Each research theme is jointly chaired by a Chinese and a Danish Principal Coordinator who take the lead in developing and improving the research agenda. This takes place with several Principal Investigators who implement and coordinate individual research projects within each overall theme.

## 8.5 Activities of Cooperation

Sino-Danish Center for Education and Research (SDC) is a partnership between all eight Danish universities and University of Chinese Academy of Sciences (UCAS) in Beijing.

### (1) Training

The overall aim of SDC is to promote and strengthen collaboration between Danish and Chinese learning environments and increase mobility of students and researchers between Denmark and China. SDC in Beijing offers seven unique Master's Programmes jointly developed by Danish and Chinese research environments:

- Neuroscience & Neuroimaging
- Water & Environment
- Innovation Management
- Public Management & Social Development
- Omics
- Nanoscience
- Chemical and Biochemical Engineering

For example, The Master of Science (MSc) programme in Nanoscience and Technology is an interdisciplinary and research-based programme with a focus on theoretical, experimental and practical subjects. The programme enables the student to understand and apply nanoscience and nanotechnology concepts and methods and provides the student with a basic knowledge of business innovation and entrepreneurship. The candidate in nanoscience and technology has an eye for new and non-traditional applications of scientific techniques and methods.

The duration of the training programme is two years. The first year of the master's programme is Nanoscience and technology combines academic courses with laboratory exercises in modules of seven weeks duration. The first half of the second year will prepare the student for the thesis to be completed in the fourth semester.

**Table5.** The course arrangement of Master's Programme

Year	Term	Courses
2 <sup>nd</sup> year		Thesis preparation course
		thesis
1 <sup>st</sup> year	2 <sup>nd</sup> Semester	Synthesis and Fabrication
		Nanoelectronics
		Bioinorganic Materials Chemistry/DNA Nanotechnology
		Business, Innovation and entrepreneurship
		Nanoenergy Materials
	1 <sup>st</sup> semester	Unifying concepts in Nanoscience
		Nanocharacterisation
		Nanobiology

## (2)Research

SDC provides a platform for jointly undertaken research activities and exchange of scientific staff between China and Denmark. Still take nanoscience as an example.

The scientific background of the Nanoscience collaboration is strongly connected to two recently established Centers of Excellences. These two centers are built upon close relations to Chinese research groups from Chinese Academy of Science (CAS): The National Centre for Nanoscience and Technology (NCNT) and Institute of Chemistry (ICCAS) both situated in Beijing.

The research plans cover broad aspects of nanoscience from synthesis, self-assembly, characterisation and theoretical understanding of surface-bound functional molecules to synthesis of nanomaterials, which have new thermoelectric properties, as well as the possibilities for allowing molecules and other nanostructures to take part in electronic circuits. The research builds on broader themes that can be summarised as Functional Nanomaterials, Self-assembly of molecular nanostructures, Nano-energy-materials, Nanoelectronics and –photonics, and so on.

## 8.6 Funding

Research funding will have to be applied for the listed organisations and foundations regularly donate funding for research within areas relevant to SDC collaboration.

- Danish Agency for Science, Technology and Innovation
- The Danish Council for Independent Reserach
- The Danish Council for Strategic Research
- The Danish Council for Technology and Innovation
- Danida
- European Commission CORDIS

There are also some private foundation, such as A.P. Møllers Almene Fond, Velux Foundation (special focus on Humanities and Social Sciences), Otto Mønsted Foundation (special focus on Danish Industry and Business). Chinese funding option includes Sino RED (Renewable Energy Development Programme).

## 9. Joint Labs of CICTA

The China-EU Center for Information & Communication Technologies in Agriculture(CICTA) (<http://www.cicta.cn>) of China Agricultural University is an international technology cooperation base established in 2009 by the national Ministry of Science and Technology. The Center is mainly devoted to the research and development of agricultural internet of things (IOT).

### 9.1 Feasibility

CICTA has a long history in international cooperation and in recent years, CICTA has undertaken more than 50 national and provincial research projects, and 17 international collaborative projects, including the EU Asia IT & C projects, and FP6 projects. CICTA is also the National Contact Point (NCP) in ICT in China.

The director of CICTA, Daoliang Li, is a leading professor at department of computer science, China Agricultural University (CAU). He coordinated more than 50 international and national research projects, and has published more than 100 national, international journals papers and 8 books.

CICTA has signed cooperation agreement with Italy (Agreement on Sino-Italian bilateral Scientific Cooperation), Germany (UIT & AST -CAU Collaboration Agreement) to make complementary advantages come true. Meanwhile, the on-going project *SENSORFISH—Intelligent Sensor Network and System Technologies for Fish Farming under the FP7* makes CICTA keep a close relationship with 3 European countries(Germany, Netherland, Norway). Two international cooperation projects *Smart sensor for*

*agriculture based on Nanotechnology and Advanced Materials, and Key technology cooperating research on agricultural Internet of Things advanced sensor and intelligent processing, sponsored by Ministry of Education in China, benefits CICTA in contact with Italy and Germany in technology introduction and staff exchange and training. All of the cooperation is foreshadow the creation of joint laboratories.*

## 9.2 Present Status

CICTA aims to initiative three joint laboratories under the frame of international projects. They are listed as following:

(1)China-Europe Advanced Sensor and Cloud Computing Joint Laboratory. The partners are from Italy, Germany, Holland, Greece.

(2)Joint laboratory of Intelligent Sensor Network and System Technologies for Fish Farming. The partner is University of Messina

(3)CAU-Fraunhofer Joint Laboratory for advanced sensor and system technologies. The partner is Fraunhofer AST

China-Europe Advanced Sensor and Cloud Computing Joint Laboratory has acquired the support from China Science and Technology Exchange Center (CECO).

## 9.3 Difficulties

Meanwhile, the difficulties must be admitted, for example, the physical distance between China and Europe, the language barriers, which sometimes can lead to misunderstanding. And communication among staff from different countries, because of cultural difference, is more difficult compared with in one country. Last but not least, how to get steady and stable fund? Because usually there is no special fund for joint laboratories.

## 10. Summary

For references and data collected and experiences acquired by researches working in joint labs, the following can be concluded.

(1)A successful way to joint labs to continue should be through a clear focus of activities, mission and branding, which will benefit fund application and improve the impact in a long term.

(2)Despite the lack of transparency in China it is advisable to delve into the rule and laws of the host country to any problems and avoid misunderstandings. And China maybe should accelerate the rules-making about joint labs.

(3)Establishing effective communication channel and mechanism among partners

(4)There are many different organization structure existing in joint laboratories, better

structure should be selected when initiating a joint lab.

(5)Government should earmark special fund for the long-term stable development of joint laboratory.



## List of Established Joint Labs in China

SN	Name	Partners	Fields	Time	Website	Others
1	Joint Research & Development Laboratory for Advanced Computer and Communication Technologies (JDL)	Institute of Computing Technology of the Chinese Academy of Sciences(ICT)、Graduate University of Chinese Academy of Sciences (GUCAS) 、Peking University、 Harbin Institute of Technology (HIT)、 Beijing University of Technology,etc.	Audio-Video Coding/Decoding Technologies、 Content-Based Information Retrieval From Mass Multimedia data、 Biometrics, Intelligent Human-computer Interaction、 Applied Algorithms.	1996	<a href="http://www.jdl.ac.cn/">http://www.jdl.ac.cn/</a>	
2	Ministry of Education-Microsoft Key Laboratory of Visual Perception of Zhejiang University	Zhejiang University、 Microsoft Research Asia	Video Animation、 Photorealistic Rendering、 Speech & Face Driven、 Digital Entertainment and Multimedia Analysis and Retrieval.	1999	<a href="http://www.msra.cn/UR/JointLabItemList.aspx">http://www.msra.cn/UR/JointLabItemList.aspx</a>	Corporate with Microsoft Research Asia
3	Ministry of Education-Microsoft Key Laboratory of Multimedia and Network Technology of Tsinghua University	Tsinghua University、 Microsoft Research Asia	Video Coding、 Content-Based Information Retrieval From Mass Multimedia data、 Visual Computing、 Natural language Processing	2000	<a href="http://www.msra.cn/UR/JointLabItemList.aspx">http://www.msra.cn/UR/JointLabItemList.aspx</a>	
4	Ministry of Education-Microsoft Key Laboratory of Speech and Language of Harbin Institution of Technology	Harbin Institution of Technology、 Microsoft Research Asia	Basic Study of Natural Speech and Language Processing,inclusing Chinese character encoding、 Machine Translation、 Information Retrieval、 Speech Recognition & Synthesis, Artificial Intelligence and Theoretical Method of Machine Learning	2000	<a href="http://www.msra.cn/UR/JointLabItemList.aspx">http://www.msra.cn/UR/JointLabItemList.aspx</a>	



SN	Name	Partners	Fields	Time	Website	Others
5	Ministry of Education-Microsoft Key Laboratory of Information Technology of HKUST	HKUST, Microsoft Research Asia	Computer Networking, Multimedia, Data Base, Artificial Intelligence	2000	<a href="http://www.msra.cn/UR/JointLabItemList.asp">http://www.msra.cn/UR/JointLabItemList.asp</a>	x
6	Ministry of Education-Microsoft key Laboratory of Statistics and Information Technology of Peking University.	Peking University, Microsoft Research Asia	Statistic and Information Processing, Computer Vision, Image Processing	2000	<a href="http://www.msra.cn/UR/JointLabItemList.asp">http://www.msra.cn/UR/JointLabItemList.asp</a>	x
7	Ministry of Education-Microsoft Key Laboratory of Human-Centric Computing and Interface Technologies of Chinese University of Hongkong	Chinese University of Hongkong, Microsoft Research Asia	Computer Vision, Computer Graphics, Speech Processing and Multimodal Human-Computer Interaction, Multimedia Processing and Retrieval, Wireless Communications and Networking	2005	<a href="http://www.msra.cn/UR/JointLabItemList.asp">http://www.msra.cn/UR/JointLabItemList.asp</a>	x
8	Ministry of Education-Microsoft Key Laboratory of Computational Intelligence and Intelligence System of Shanghai Jiao Tong University	Shanghai JiaoTong University, Microsoft Research Asia	Artificial-Intelligence Computing and Retrieval	2005	<a href="http://www.msra.cn/UR/JointLabItemList.asp">http://www.msra.cn/UR/JointLabItemList.asp</a>	x
9	Microsoft Digital Cartoon and Animation Laboratory of	Beijing Film Academy, Microsoft Research Asia	Gaming and Animation Concerning with Chinese Ink Wash Painting, Gaming Curriculum Design Based on Microsoft Platform, Digital	2006	<a href="http://www.msra.cn/UR/JointLabItemList.asp">http://www.msra.cn/UR/JointLabItemList.asp</a>	x

SN	Name	Partners	Fields	Time	Website	Others
	Beijing Film Academy		Cartoon and Animation, Cartoon and Animation Design.			
10	Microsoft Intelligence Information Processing Laboratory of Xi'an Jiaotong University	XI'AN JIAOTONG UNIVERSITY、 Microsoft Research Asia	Artificial Intelligence Computing、 Software System、 Internet Information Processing	2007	<a href="http://www.msra.com.cn/UR/JointLabItemList.aspx">http://www.msra.com.cn/UR/JointLabItemList.aspx</a>	
11	The Sino-French Lab in Computer Science, Automation and Applied Mathematics(LIA MA)	Chinese Academy of Science; French National Institute for Research in Computer Science and Control; The French National Centre for Scientific Research ; Centre de coopération internationale en recherche agronomique pour le développement; Chinese Academy of Sciences Institute of Automation; Bureau de Recherches Géologiques et Minières		1997	<a href="http://www.ia.cas.cn/jlh/gjj/q/tjg/bm6/">http://www.ia.cas.cn/jlh/gjj/q/tjg/bm6/</a>	
12	State-Key Laboratory of Chemical Engineering	Tsinghua University、 Tianjin University、 East China University of Science and Technology、 Zhejiang University	Maximization of the efficiency of Polymerization Process、 Controllability of Polymer Product Structures、 Green Polymerization Process and Polymer Product、 Practicability of Functional Polymer Material	1987	<a href="http://skloche.cust.edu.cn/index.html">http://skloche.cust.edu.cn/index.html</a>	
13	China-Singapore Institute of Digital Media	Media Development Authority (MDA) of Singapore、 Institute of Automation, Chinese Academy of Sciences	Spoken dialogue analysis, Language translation, Affective video analysis, Immersive environment, and Sensor networks for gesture recognition.	2008	<a href="http://www.ia.cas.cn/jlh/gjj/q/tjg/zxyj/">http://www.ia.cas.cn/jlh/gjj/q/tjg/zxyj/</a>	



SN	Name	Partners	Fields	Time	Website	Others
14	Joint Research & Development Laboratory for Intelligience identification Institute of Automation, Chinese Academy of Sciences、 Hong Kong University of Science and Technology-	Institute of Automation, Chinese Academy of Sciences、 Hong Kong University of Science and Technology-	Pattern Recognition、 Artificial Intelligence、 Wireless Sensor Network and RFID	2008	<a href="http://www.ia.cas.cn/jlhz/gjjl/qjg/gjjg/">http://www.ia.cas.cn/jlhz/gjjl/qjg/gjjg/</a>	
15	USTC-SHINCRO N Joint Lab for Advanced Thin Film Processing and Materials	University of Science and Technology of China、 SHINCRO Co.,Ltd.	Film Processing and Materials	2003	<a href="http://www.usjt.ustc.edu.cn/index.html">http://www.usjt.ustc.edu.cn/index.html</a>	
16	Joint Lab. Of Network Communication System & Control	University of Science and Technology of CHina、 Institute of Acoustics, Chinese Academy of Sciences	The basic theory, key techniques and system implementation for new media's expression, transfer, storage,retrieval in complicated network environment		<a href="http://ncsc.ustc.edu.cn/labintro/duction.html">http://ncsc.ustc.edu.cn/labintro/duction.html</a>	
17	State Key Joint Laboratory of Environmental Simulation and Pollution Control	Tsinghua University、 Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences、 Peking University、 Beijing Normal University	Regionally atomspheric pollution,climate and global change、 Atomspheric environment process simulation, Atomspheric Pollution sources and controll techniques, atomspheric species observing technology、 Health effect in asomspheric pollution	1989	<a href="http://cese.pku.edu.cn/air/index.asp">http://cese.pku.edu.cn/air/index.asp</a>	
18	Tsinghua National Laboratory for Information Science and Technology	School of Software(Tsinghua University)、 Department of Computer Science and Technology of Tsinghua University; Verimag	Software identifying techniques、 Embedded system design based on 、 Hybrid system design & verification, Embedded system design programming language and its development environment	2010	<a href="http://www.tnli.st.org.cn/pages/dept_zhongfaru_anjian.jsp">http://www.tnli.st.org.cn/pages/dept_zhongfaru_anjian.jsp</a>	



SN	Name	Partners	Fields	Time	Website	Others
19	Joint Research Center for Energy Information	Viterbi, Tsinghua National Laboratory for Information Science and Technology	Intelligent Electric Grid, Intelligent Buliding, Intelligent home, Green Communications, cloud computing, solar power, optoelectronic device, Logistics and intelligent transportation system		<a href="http://www.tnli.st.org.cn/pages/dept_nengyuan_xinxixue.jsp">http://www.tnli.st.org.cn/pages/dept_nengyuan_xinxixue.jsp</a>	
20	State Key Joint Laboratory of Integrated Optoelectronics	Tsinghua University, Jilin University, Institute of Semiconductors-Chinese Academy of Science	New type optics and Photonic Integration Devices based on Semiconductors-optoelectronic s materials, Micro-nano-optoelectronics materials and Mcro-nano-electronic material; Research in applications and the systematic technology relating to Optical fiber communications system and network, optical information processing and display, light-sensing technology, solar powerd and solid lighting and national security	1991	<a href="http://lab.semi.ac.cn/jcgdz/contents/407/6287.html">http://lab.semi.ac.cn/jcgdz/contents/407/6287.html</a>	
21	NHC-KLNM JOINT RESEARCH & DEVELOPMENT LAB	Chinese Academy of Science Key Lab for Nutrition and Metabolism Sciences, Chinsese Academy of Science- innovation center for Hu Zhou Nutrition and Human Health	Nutrition and Human Health in Desired State Fields		<a href="http://www.nhc.ac.cn/lianhe/index.htm">http://www.nhc.ac.cn/lianhe/index.htm</a>	
22	Joint Laboratory of Nutritional Intervation on Female	Chinsese Academy of Science- innovation center for Hu Zhou Nutrition and Human Health, Zhejiang Zhong Ke Zhong Chuang Health Technology.co.Ltd.	Studying and Developing Healthy food featuring exact ingredients, high utilization, and pronounced effects, focusing on asian female charactertics		<a href="http://www.nhc.ac.cn/lianhe/index04.htm">http://www.nhc.ac.cn/lianhe/index04.htm</a>	
23	Laboratory for Biological Inspection & Detection	Huzhou Hai Chuang Biotechnology .co.Ltd, Chinsese Academy of Science- innovation center	Development and industrializing Vitro Diagnostics		<a href="http://www.nhc.ac.cn/lianhe/index01.htm">http://www.nhc.ac.cn/lianhe/index01.htm</a>	



SN	Name	Partners	Fields	Time	Website	Others
		for Hu Zhou Nutrition and Human Health				
24	Joint Laboratory for New type biologicals	Beijing CoSci Med-Tech Co.,Ltd、 Chinsese Academy of Science- Innovation center for Hu Zhou Nutrition and Human Health	Design and Development sustained-release technique, controlled-release technique and orally disintegrating techniques, Advanced Drug Delivery Technology.		<a href="http://www.nhc.ac.cn/lianhe/in dex02.htm">http://www.nhc.ac.cn/lianhe/in dex02.htm</a>	
25	HERLAB Joint Laboratory for development of Cosmetic Products	Chinsese Academy of Science- Innovation center for Hu Zhou Nutrition and Human Health, Shang Hai Botanova Cosmetic Product Co.Ltd.	Active plant Ingredient for Cosmetic Product、 Process Development		<a href="http://www.nhc.ac.cn/lianhe/in dex03.htm">http://www.nhc.ac.cn/lianhe/in dex03.htm</a>	
26	Tsinghua University-Tencent joint Laboratory for Innovatively Internet technology	Tsinghua University、 Tencent Research	Internet search engine and browser Techniques; Communalized Information Organizing and mining; Obtaining, expression, organizing and high-efficient Processing of Mass Internet Information.Machine Learning and Data Mining of Mass Information;Massive Information's computational Model and Information Organization under new type hardware hierarchy.		<a href="http://www.tsin ghua.edu.cn/pu blish/cs/5757/in dex.html">http://www.tsin ghua.edu.cn/pu blish/cs/5757/in dex.html</a>	
27	Tsinghua-HP Multimedia Joint Lab	Department of Computer Science and Technology of Tsinghua University、 HP	Machine Learning、 Computer vision、 Computer Graphic、 Word processing, Multimedia Information analysis, processing, search and management, Virtual Reality, and development of other relative applied technology	2007	<a href="http://www.tsin ghua.edu.cn/pu blish/cs/5756/in dex.html">http://www.tsin ghua.edu.cn/pu blish/cs/5756/in dex.html</a>	
28	Tsinghua University-Sohu Joint Laboratory for Search technology	Key State Laboratory of the Department of Computer Science and Technology of Tsinghua University for Intelligent Technology and System、 The Institute of	Network Storage、 Retrieval、 Management and Applied Techniques	2007	<a href="http://www.tsin ghua.edu.cn/pu blish/cs/5755/in dex.html">http://www.tsin ghua.edu.cn/pu blish/cs/5755/in dex.html</a>	



SN	Name	Partners	Fields	Time	Website	Others
		Software, Chinese Academy of Sciences; Sohu Research				
29	Tsinghua--David R. Cheriton collaborative Research Center for internet information acquisition	Department of Computer Science and Technology of Tsinghua University、 David R. Cheriton School of Computer Science	Intersectant language searching in Internet, Q&A, Restricted Internet Searching	2009	<a href="http://www.tsinhua.edu.cn/publish/cs/5753/index.html">http://www.tsinhua.edu.cn/publish/cs/5753/index.html</a>	
30	Joint Laboratory for Ocean and Climate	French laboratory of climate science and the environment, French laboratory of interactions and dynamics of surface environments , Institute of Geology and Geophysics Chinese Academy of Sciences (CAS) in Beijing) ,State key laboratory of Marine Science of Tongji University in Shanghai	spatio-temporal evolution of rainfall during the monsoon Southeast Asia via its impact on the detrital discharge of major rivers, the sea changes of surface properties and the variability of the past ocean circulation	2012	<a href="http://www.bafrance-cn.org/%E6%96%B0%E8%AF%91%E6%96%87-Lancement-du-Laboratoire-Mo usson-Ocean-C limat-LIA-MO NOCL-a-Pekin.html">http://www.bafrance-cn.org/%E6%96%B0%E8%AF%91%E6%96%87-Lancement-du-Laboratoire-Mo usson-Ocean-C limat-LIA-MO NOCL-a-Pekin.html</a>	
31	Tianjin-Oxford Joint Laboratory of Gene Therapy	Gene Therapy of Neuromuscular disorders Laboratory of the General Medical Science Research Center of Tianjin Medical University, Key Laboratory of The Department of Physiology, Anatomy and Genetics for Molecular and Neurosciences	Gene Therapy of Neuromuscular Disorders	2010	<a href="http://web.tmu.edu.cn/cn/news/10/07/news10104.htm">http://web.tmu.edu.cn/cn/news/10/07/news10104.htm</a>	
32	Sino-French joint Lab on Food Safety, Nutrition, and Pharmaceutical Chemistry	Tianjin University of Science & Technology、 Carbohydrate Chemistry Laboratory of Pierre-and-Marie-Curie University	Pharmaceutical and Healthy Field	2011	<a href="http://news.tust.edu.cn/kdxw/25204.htm">http://news.tust.edu.cn/kdxw/25204.htm</a>	



SN	Name	Partners	Fields	Time	Website	Others
33	China University of Mining and Technology-Chinese Academy of Science Joint Laboratory of Intelligent Information Processing	School of Computer Science and Technology, CUMT, Insitute of Computing Technology, Chinese Academy of Science	Artificial Intelligence & Pattern Recognition, Machine Learning & Data Mining, MLDMGranular Computing & Soft Computing	2007	<a href="http://jliip.cumt.edu.cn/">http://jliip.cumt.edu.cn/</a>	
34	CNNIC-Cisco Addressing Research Lab	China Internet Network Information Center; Cisco	Address Allocation, Address Management, Address Administration, Address Identification, Address Security, IPv6 Addresses, and Related Network Projects	2009	<a href="http://www.ccnic.cn/home/">http://www.ccnic.cn/home/</a>	
35	Tianjin University—Infineon on Automotive Electronic Joint Laboratory	Tianjin University, Infineon.	Engine Management System, Motorcycle electrical control technology, Electrical vehicle powertrain control and Vehicle infotainment system, and Provide Advanced Solutions with Infineon Chips	2004	<a href="http://www.tjuae.com/intro.asp">http://www.tjuae.com/intro.asp</a>	
36	Joint Laboratory of Nano-Catalysis Material and Technology	Suzhou Institute of Nano-tech and Nano-bionics; Lanzhou Institute of Chemical Physics (LICP) of the Chinese Academy of Sciences	Development and Preparation Techniques of Nano-Catalysis Material, New Techniques of Atomically & Economically Oriented Cleaning-Catalysis, Intergration of Nano-Catalysis techniques and its Application.	2011	<a href="http://www.cas.cn/xw/yxdt/201107/t20110727_3316567.shtm">http://www.cas.cn/xw/yxdt/20110727_3316567.shtm</a>	
37	Joint Laboratory of Security	Shanghai Jiaotong University, Shanghai Huahong Integrated Circuit Co., Ltd	Information Security	2009	<a href="http://www.shhic.com/about_jiaoda.aspx">http://www.shhic.com/about_jiaoda.aspx</a>	
38	Tianjin University-AstraZeneca Joint Laboratory	AstraZeneca, Tianjin University	Crystallization, Process safety and Green/Environmental Chemistry	2008	<a href="http://www.process-safety-lab.com/">http://www.process-safety-lab.com/</a>	
39	China-UK International Joint Laboratory	Huazhong University of Science and Technology, Rothamsted Research	Improve the end use quality, resistance to biotic and abiotic stress and yield of crops by biotechnology, to develop crop functional genomic	2000	<a href="http://chinauk.hust.edu.cn/IND_EX.HTM">http://chinauk.hust.edu.cn/IND_EX.HTM</a>	





SN	Name	Partners	Fields	Time	Website	Others
40	Harbin Institute of Technology-Intel Joint Laboratory	Harbin Institute of Technology, Inspur Co., Ltd, KingSoft Co.,Ltd, Intel Research Asia-Pacific	Software Development	2011	<a href="http://software.hit.edu.cn/practice/show/43.aspx">http://software.hit.edu.cn/practice/show/43.aspx</a>	
41	KIZ/CUHK Joint Laboratory of Bioresources and Molecular Research in Common Diseases)	Kunming Institute of Zoology, Chinese University of Hongkong	Infection & Immunization, Genetics, Neurosciences, Stem-cells, Reproductive biology and etc.	2007	<a href="http://www.cuhk.edu.hk/centre/kiz-cuhk/main.htm">http://www.cuhk.edu.hk/centre/kiz-cuhk/main.htm</a>	
42	Sino-Russian Joint Laboratory for Conservation of Grassland eco-environment and Sustainable Utilization	Institute of Grassland Research of Chinese Academy of Agriculture Sciences, Institute of General and Experimental Biology of Siberian Division of the Russian Academy of Science	Eurasian- temperate zone Grassland Resources, Zoology, Grassland Production and Human Activities regarding to Grassland Policy, etc.	2012	<a href="http://www.gov.cn/jrzq/2012-12/15/content_291187.htm">http://www.gov.cn/jrzq/2012-12/15/content_291187.htm</a>	
43	ISTIC-Thomson Reuters Joint Lab for Scientometrics Research	THOMSON REUTERS, Institute of Scientific and Technical Information of China	Basic Theory of Scientometrics, Techniques and Applicability, Exploring the relevant sciences' developing direction	2009	<a href="http://www.istic.ac.cn/tabid/654/Default.aspx?ArticleID=94188">http://www.istic.ac.cn/tabid/654/Default.aspx?ArticleID=94188</a>	
44	Joint Laboratory of Medical Devices Standards	Shanghai Jiao Tong University, Shanghai Testing & Inspection Institute for Medical Devices	Medical Devices Standards and Testing & Inspection Techniques	2012	<a href="http://news.scienet.cn/htmlnews/2012/12/272496.shtml">http://news.scienet.cn/htmlnews/2012/12/272496.shtml</a>	
45	Joint Laboratory of metallic nano-catalysis, University of Sciences and Technology of China	National Laboratory for Physical Science; National Synchrotron Radiation Laboratory, University of Science and Technology of China; Institute of Chemistry and Materials Science	Design and Preparation of Metal, Alloy, intermetallic-compounded nanocrystalline, Metal Cluster, And other New Type Catalysis Materials	2012	<a href="http://www.scienet.cn/classinfo/info.aspx?id=12088">http://www.scienet.cn/classinfo/info.aspx?id=12088</a>	
46	Nanjing University-Jinchuan Corporation Joint Laboratory of Metallochemistry	Nanjing University, Jinchuan Corporation	Function Compounds & Materials; Micro-Scale Functional Powder Materials and its Powder Metallurgy; Applied Techniques Research in Refining Process; Basic Study for the Application of	2005	<a href="http://chem.nju.edu.cn:90/jlmc/index.asp">http://chem.nju.edu.cn:90/jlmc/index.asp</a>	



SN	Name	Partners	Fields	Time	Website	Others
			Battery Materials; Basic Study for the Application of Industry Catalysis.			
47	Sino-French biomineralization nanostructures Joint Laboratory	Chinese Academy of Sciences、 China Agriculture University、 the French National Scientific Research Center、 French Atomic Energy Agency	Biological in geoscience, marine ecology, elements and material recycling, environmental pollution and the regeneration of governance, the magnetic field environment and life processes, human health and scientific issues, revealing the biology, physics and chemistry of biological mineralization process of biomineralization, biological development and utilization of mineral research	2010	<a href="http://www.bio&lt;br/&gt;mnsi.com/info_&lt;br/&gt;35_40.html">http://www.bio mnsi.com/info_ 35_40.html</a>	
48	Opzoon-Tianjin University Joint Laboratory of Applied Mathematics	Opzoon; Tianjin University	Abstracting, Analyzing, solving relatic problems with Mathematic Theories and Tools	2012	<a href="http://www.opz&lt;br/&gt;oon.com/2012/&lt;br/&gt;ab/index.htm">http://www.opz oon.com/2012/ ab/index.htm</a>	
49	Joint Laboratory of the The institute of electrical engineering (Chinese academy of sciences) and Huangming Solar Power	Huangming Solar Power; The institute of electrical engineering, Chinese academy of sciences	Optics、 Power Electronics Techniques 、 Machinery、 Structure Process 、 Materials、 Electricity Generation	2010	<a href="http://www.chs&lt;br/&gt;el.com/">http://www.chs el.com/</a>	
50	Donghua University- Schneider Electric Joint Laboratory	Schneider Electric; Donghua University	Motion Control、 Automation System	2007	<a href="http://cist.dhu.e&lt;br/&gt;du.cn/news.asp&lt;br/&gt;?id=404">http://cist.dhu.e du.cn/news.asp ?id=404</a>	

SN	Name	Partners	Fields	Time	Website	Others
51	Joint Laboratory of Low-Carbon and the Internet of things Technology	Zhejiang A&F University, Tsinghua University, The Hong Kong University of Science & Technology, Xi'an Jiao Tong University, Illinois Institute of Technology, Beijing University of Posts and Telecommunications, Nanyang Technological University, Yanshan University, Hangzhou Dianzi University	Study of Carbon Emission & Carbon Sink Monitoring based on the technology of Internet of Things	2010	<a href="http://iot.zafu.edu.cn/">http://iot.zafu.edu.cn/</a>	
52	Beijing Joint Laboratory of New Media	State New Media Industrial Base, Animation School of Communication University of China, Beijing Insitute of Graphic Communication, Chinese Academy of Sciences, Renmin University of China, Beijing Institute of Technology, Beijing University of Posts and Telecommunications, Beihang University	Nes Media Industry, Film and Television Production Industry, Digital Publishing & Printing Industry, Creative Design Industry, Tourism and Entertainment Industry	2010	<a href="http://www.caigou.com.cn/Lab/Detail/62037.shtml">http://www.caigou.com.cn/Lab/Detail/62037.shtml</a>	
53	Audi- Tongji Joint Labortary	FAW- Volkswagen, Audi, Tongji University	Electric Vehicle	2010	<a href="http://baike.baidu.com/view/4697850.htm">http://baike.baidu.com/view/4697850.htm</a>	
54	Donghe Data Joint Labortary of Loss Given Default	Beijing Donghe Data Co., Ltd, Center for Forecasting Science of Chinese Academy of Sciences	The Loss Given Defaults Under Internal Ratings-Based Approach in BASEL II	2008	<a href="http://finance.sina.com.cn/roll/20080922/10095328385.shtml">http://finance.sina.com.cn/roll/20080922/10095328385.shtml</a>	

SN	Name	Partners	Fields	Time	Website	Others
55	Baidu- Harbin Institute of Technology joint labortary	Harbin Institute of Technology、 Baidu	Natural Language Processing、 linguistical Analysis、 Dependency methods、 Word Sense Disambiguation、 Semantic Role Labeling、 Linguistic Generating & Paraphrasing Techniques、 Computer-Aided Writing、 Mechanical Translation、 Text Mining & Entity-Relationship Extraction、 Coreference Resolution、 Options Mining、 Text Retrieval、 Q & A System、 Vertical Search、 Customerized Searching		<a href="http://baike.baidu.com/view/756704.htm">http://baike.baidu.com/view/756704.htm</a>	
56	Inauguration of a Franco-Chinese laboratory in Nanjing	University of Science and Technology Nanjing、 University of Lille 1	Automatic Applied toRail (TGV) 、 Biodiesel Engine in the AeronauticaSector	2012	<a href="http://www.bafrance-cn.org/%E4%B8%80%E4%B8%AA%E6%96%B0%E7%9A%84%E4%B8%AD%E6%B3%95%E8%81%94%E5%90%88%E5%AE%9E%E9%AA%8C%E5%AE%A4%E5%9C%A8%E5%8D%97%E4%BA%AC%E6%88%90%E7%AB%8B.html">http://www.bafrance-cn.org/%E4%B8%80%E4%B8%AA%E6%96%B0%E7%9A%84%E4%B8%AD%E6%B3%95%E8%81%94%E5%90%88%E5%AE%9E%E9%AA%8C%E5%AE%A4%E5%9C%A8%E5%8D%97%E4%BA%AC%E6%88%90%E7%AB%8B.html</a>	
57	Baidu-I2R Research Centre	Institute for Infocomm Research、 Baidu, Inc.	Information Technology、 Wireless & Optical Fiber Communication Network、 Interaction and Digital Media、 Signal Processing & Computing, etc.	2012	<a href="http://tech.qq.com/a/20120223/000361.htm">http://tech.qq.com/a/20120223/000361.htm</a>	



SN	Name	Partners	Fields	Time	Website	Others
58	Joint Laboratory of Advanced Auto Steel	China FAW Group Corporation R&D Center, CHINA IRON & STEEL RESEARCH INSTITUTE GROUP	Advanced Auto Steel in New Energy Vehicles , Lightweight design for Auto, Safety Design for Auto, Application in Key in Selective Catalytic Reduction	2011	<a href="http://www.qipiren.com/New/s/news-21932.htm">http://www.qipiren.com/New/s/news-21932.htm</a>	
59	Joint Institute of Measurement Science	National Institute of Metrology of China, Tsinghua University	Precision Measurement of Gravity, Time, Frequency and So on.	2011	<a href="http://www.jmi.tsinghua.edu.cn/jmi/do.php?index=Tsinghua&amp;do=index&amp;lang=zh">http://www.jmi.tsinghua.edu.cn/jmi/do.php?index=Tsinghua&amp;do=index&amp;lang=zh</a>	
60	Sino-Germany Joint Laboratory of Superconductivity and Bioelectronics	Shanghai Institute of Microsystem and Information Technology( Chinese Academy of Sciences , Forschungszentrum Jülich, Institute of Bio- and Nanosystems	Bioelectronics & Superconductor, Circuit, Relative Application and Etc.	2010	<a href="http://www.cas.cn/xw/yxdt/20101022_2991444.shtm">http://www.cas.cn/xw/yxdt/20101022_2991444.shtm</a>	
61	Joint Laboratory of "Post-translational modification"	Sino-France				
62	Joint Laboratory of Bio-pharmaceuticals Research	Zhejiang Hisun Group, The Institute of Microbiology of the Chinese Academy of Sciences	The Development of Sources of Endophyte, The Modification of Genetic engineering relating to The Clavulanic-acids-Production Strain		<a href="http://www.im.cas.cn/ydhz/lhs/ys/">http://www.im.cas.cn/ydhz/lhs/ys/</a>	
63	Joint Laboratory of Bioactive Substance	Zhejiang Silver Elephant Bioengineering Co., Ltd, The Institute of Microbiology of the Chinese Academy of Sciences	Nisin	2006	<a href="http://www.im.cas.cn/ydhz/lhs/ys/">http://www.im.cas.cn/ydhz/lhs/ys/</a>	
64	Joint Laboratory of Microbiological Genome	Beijing Institute of Genomics( Chinese Academy of Sciences), The Institute of Microbiology of the Chinese Academy of Sciences	Biological Genome	2006	<a href="http://www.im.cas.cn/ydhz/lhs/ys/">http://www.im.cas.cn/ydhz/lhs/ys/</a>	



SN	Name	Partners	Fields	Time	Website	Others
65	Joint Laboratory of Saccharomyces Cerevisiae	TsingTao Brewery Research Center、 The Institute of Microbiology of the Chinese Academy of Sciences	Genetic or Molecular Modification of TsingTao Saccharomyces Cerevisiae with Utilization of Self-Cloning Techniques Under Asured Biosecurity	2006	<a href="http://www.im.cas.cn/ydhz/lhs/ys/">http://www.im.cas.cn/ydhz/lhs/ys/</a>	
66	Joint Laboratory of Microbes Ferments	Polo China Co.,Ltd、 The Institute of Microbiology of the Chinese Academy of Sciences	Expanding the Application and Studying the Deep-Development of Microbes Ferments , Solving the Technical Problems in Manufacturing Process, Developing other relative Techniques.	2007	<a href="http://www.im.cas.cn/ydhz/lhs/ys/">http://www.im.cas.cn/ydhz/lhs/ys/</a>	
67	Joint Lab of Next Generation Internet Interactive Computing	High Performance Computing Center of Shanghai UNiversity、 Institute of Computer Engineering and Science	interactive computing techniques, Web knowledge flow, Semantic link Web of Mass data, Cognitive-based text understanding, A new Web knowledge service	2009	<a href="http://iic.shu.edu.cn/shiyanshi.html">http://iic.shu.edu.cn/shiyanshi.html</a>	
68	Joint Laboratory of Flexibly optic-electronic Techniques	CAS-Suzhou Institute of Nano-tech and Nano-bionics 、 Nanchang O Fei Guang Co., Ltd.	Flexible-Based Electronic Techniques of Lighting, Photovoltaic and Printing	2012	<a href="http://news.science.net.cn/html/news/2012/11/271336.shtml">http://news.science.net.cn/html/news/2012/11/271336.shtml</a>	
69	NorthEastern University-Rockwell Joint Lab of Automation	NorthEastern University、 Rockwell Automation Co., Ltd	Industrial Personal Computer、 Programmable Logic Controller 、 Transducer、 Intelligent Motor Controller、 Transmission and etc.	1999	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	Improving Experimental Facilities & Environment ,Student'sPractice, Training
70	NorthEastern University-Mitsubishi Electric Joint Lab of FAF	Mitsubishi Electric、 NorthEastern University	Motor	2006	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
71	NorthEastern University -Texas Instruments Joint Lab of Digital-Signal	Texas Instruments、 NorthEastern University	Digital-Signal Processing	2001	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	



SN	Name	Partners	Fields	Time	Website	Others
	Processing					
72	NorthEastern University—Freescale Joint Lab of the Application & Design of Embedded System	NorthEastern University、Freescale	Application & Design of Embedded System	2007	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
73	NorthEastern University—WellinTech Joint Lab of Configuration Control Technology	WellinTech Co., Ltd、NorthEastern University	The Development of Applied Techniques of Embedded Techniques, Research of Arithmetics relating to controlled body, etc.	2006	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
74	NorthEastern University—WINBOND Joint Lab of Embedded System	WINBOND、NorthEastern University	Embedded System	2007	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
75	NorthEastern University—Schneider Electric Joint Lab	Schneider Electric、NorthEastern University	Electric and Automation	2008	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
76	Liaoning Joint Laboratory of Integrated Circuits and Electronic System Design	NorthEastern University、Liaoning University、Shenyang University of Technology、Shenyang Ligong University,Mentor Corporation	Integrated Circuit & Electronic System Design	2008	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
77	NorthEastern University—B & R Joint Lab of Integrated Automation	B&R (Shanghai)、NorthEastern University	Machine Control Design (MA)、 Process industry (PA) and Auto-Factory (FA).	2010	<a href="http://www.ise.neu.edu.cn/page/0241/">http://www.ise.neu.edu.cn/page/0241/</a>	
78	Joint Lab of Plan Functional Genomics	Huazhong Agricultural University、 The University of Arizona	Plant Functional Genomics		<a href="http://cpst.hzau.edu.cn/hzjl/ShowArticle.asp?ArticleID=747">http://cpst.hzau.edu.cn/hzjl/ShowArticle.asp?ArticleID=747</a>	
79	RockWell Joint Laboratory of Automation	Rockwell Corporation、Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog">http://ee.zju.edu.cn/chinese/re_dir.php?catalog</a>	



SN	Name	Partners	Fields	Time	Website	Others
					<a href="#">_id=57487</a>	
80	Joint Lab of DSP Electronic Control	Wolong Holding Group, Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
81	Joint Lab of Digital Signal Processing Solution	Texas Instruments, Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
82	Motoral Joint Lab of Single-Chip Computer	Motorola Corporation, Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
83	Joint Lab of Motor Control	Qiusi Corporation, Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
84	Joint Lab of Motor	Zheda Fangyuan Co., Ltd., Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
85	Joint Lab of Electronic Drive and Control	Zheda Fangyuan Co., Ltd., Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
86	Infineon Technologies Joint Laboratory of MCU	Infineon Technologies, Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
87	Zhejiang University—U.S. National Semiconductor Joint Lab of Simulation & Integrated Circuit of Mixed Analog-digital	U.S. National Semiconductor, Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
88	Joint Lab of Power Electronic	Zheda Fangyuan Co., Ltd., Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	





SN	Name	Partners	Fields	Time	Website	Others
					<a href="#">_id=57487</a>	
89	Zhejiang University—Samsung Joint Laboratory of Electronic-System Chip	Samsung、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
90	Zhejiang University—Hifn Joint Laboratory of Network Security & SOC	Hifn Corporation、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
91	Joint Lab of ARM-Embedded Motion Control	Embest Technology、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
92	Joint Lab of Electronic Control	Freescale Corporation、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
93	Zhejiang University—U.S. National Semiconductor Joint Laboratory of Micro-power System Design	U.S. National Semiconductor、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
94	Zhejiang University—U.S. National Semiconductor Joint Lab for Design of Simulation System	U.S. National Semiconductor、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
95	Zhejiang University—Fuji Motor Research Joint Laboratory	FUJI ELECTRIC HOLDINGS CO., LTD、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	
96	Zhejiang University—Mitsubishi Motors Joint	Mitsubishi Motors、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/re_dir.php?catalog_id=57487</a>	

SN	Name	Partners	Fields	Time	Website	Others
	Lab of Power Device				<a href="#">_id=57487</a>	
97	Intersil Joint Laboratory	Intersil、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
98	Zhejiang University—ADI Joint Laboratory of Integrated Circuit	ADI Corporation、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
99	Zhejiang University—ASUS Joint Lab of Intelligent System	ASUS、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
100	Zhejiang University-Eaton Electronic Joint Lab of High-Efficient Variable Flow Research	Eaton Electronic、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
101	Joint Lab of FPGA	Altera、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
102	Zhejiang University—Schneider Electric Joint Lab	Schneider Electric(China)、 Zhejiang University			<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
103	CAS ICT-Intel Joint Laboratory	Institute of Computing Technology (Chinese Academy of Sciences)、 Intel Inc	DNA Sequencing Focused Reconfigurable-Computing System based on Intel Xeon Platform DNA Sequencing	2012	<a href="http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487">http://ee.zju.edu.cn/chinese/research.dir.php?catalog_id=57487</a>	
104	Beijing Joint Lab of Developing Technology Platform	Beijing Administration, Chinese Academy of Sciences、 Tsinghua University、 Peking University、 Academy of Military Medical Sciences、 Chinese Academy of	New Material、 Biomedicine、 Electronic Information、 Energy Resource & Environmental Protection、 Equipment Producer, Etc.	2010	<a href="http://www.eda.ac.cn/2010/1123/155.html">http://www.eda.ac.cn/2010/1123/155.html</a>	



SN	Name	Partners	Fields	Time	Website	Others
		Medical Sciences, and other 12 Institutions				
105	Joint Open-Laboratory of Integrated Circuit & IP Services	EDA Centre of Chinese Academy of Sciences	IP Packaging of Integrated Circuit, IP Testing & Assessment	2007	<a href="http://www.eda.ac.cn/2010/0916/2.html">http://www.eda .ac.cn/2010/091 6/2.html</a>	
106	Advanced SoC design joint Lab	Synopsys、EDA Centre of Chinese Academy of Sciences	Advanced IC Technology (Larger or equal to 90 nanometer), Improved Design Process		<a href="http://www.eda.ac.cn/2010/0916/6.html">http://www.eda .ac.cn/2010/091 6/6.html</a>	
107	Advanced SoC verification joint Lab	Mentor Graphics、EDA Centre of Chinese Academy of Sciences	Design & Verification Techniques and Process ( 90 nanometers )		<a href="http://www.eda.ac.cn/2010/0916/5.html">http://www.eda .ac.cn/2010/091 6/5.html</a>	
108	RF & Mixed signal IC design joint Lab	Cadence Corporation、EDA Centre of Chinese Academy of Sciences	IC Research & Development		<a href="http://www.eda.ac.cn/2010/0916/4.html">http://www.eda .ac.cn/2010/091 6/4.html</a>	
109	Joint Laboratory of Cloud Computing, CIIM Center of Peiking University			2013	<a href="http://www.ran.geidc.com/Html/Article/xwdt/20_63.html">http://www.ran geidc.com/Htm l/Article/xwdt/2 0_63.html</a>	
110	Huawei- SunJoint Lab	Huawei, Sun	Business Support Platform, Clustering technology with Load-Balancing & High Utilization, Distributed Data Base, Java Application in Telecommunication Field	2000	<a href="http://www.huawei.com/cn/about-huawei/newsroom/press-release/hw-087127-news.htm">http://www.hua wei.com/cn/abo ut-huawei/news room/press-rele ase/hw-087127 -news.htm</a>	
111	Zhejiang University—Belgi um Joint Lab of Plant & Water Quality Analysis					
112	Zhejiang University—Rock well Joint Lab					
113	Sino-Netherlands Joint Laboratory of Foundation Engineering of					



SN	Name	Partners	Fields	Time	Website	Others
	Soft Ground (Zhejiang University					
114	Zhejiang University—U.S. National Semiconductor Joint Lab of Simulation & Mixed-Signal Integrated Circuit					
115	Zhejiang University—Moto roal Research Center of Single-Chip Computer					
116	Zhejiang University—Sums ung Joint Laboratory of SoC					
117	Zhejiang University—IBM Joint Lab of Biocomputing					
118	Zhejiang University--Siyuan Joint Laboratory of Natural Medicine & Biotoxin					
119	Zhejiang University- TXY Joint Lab for Testing of Biological Contamination					
120	Zhejiang University- Lin Bai Xin Joint Lab of Midbrain Neurocyte					

SN	Name	Partners	Fields	Time	Website	Others
	Function					
121	Zhejiang University--Lin Jian Gao Joint Lab of Marine Sources & Environment					
122	Zhejiang University—Hifn SoC Lab of Network Security					
123	Zhejiang University—Ecole Normale Superieure Joint Laboratory of Pharmaceutical Chemistry					
124	Zhejiang University Molecular Imaging Center					
125	Zhejiang University PET Center					
126	IAEA—Zhejiang University Collaborative Research &Innovation Center for Plant Mutation Germplasm					
127	Zhejiang University—Intel Joint Research Center of Embedded Technology					
128	Zhejiang University—Hitac					



SN	Name	Partners	Fields	Time	Website	Others
	hi Construction Machinery Joint Lab of Fluid Dynamic					
129	Zhejiang University-National Technical University of Ukraine (Kiev Polytechnic Institute) Hi-Tech Center					
130	Zhejiang-CA International Research Center for Nanotechnology					
131	Sino-Europe SoC Research Center of Education					
132	Zhejiang University—University of Western Australia Joint Lab of Plant Functional Genomics & Nutriomics					
133	Zhejiang University—Fuji Motor Research Joint Laboratory					
134	Zhejiang University—Mitsubishi Joint Lab of Motor Power Devices					
135	Zhejiang University—Tech Joint Laboratory of High-Speed System Testing					

SN	Name	Partners	Fields	Time	Website	Others
136	Zhejiang	University—U.S.	National Semiconductor Joint Lab of Micro-Power System Design			
137	Zhejiang	University—Intel	Technology Center			
138	Zhejiang	University	International Research Center of New Structure Materials			
139	Zhejiang	University—Hong Kong Polytechnic University	International Design Center			
140	Zhejiang	University—Sony	Research (China) Joint Laboratory			
141	Zhejiang	University—ASU	S Joint Lab of Intelligent System			
142	Zhejiang	University—Eaton	Joint Lab of Power Electronics			
143	Zhejiang	University— French Air Liquide Group	Joint Lab of Rich Oxyfuel Firing			

SN	Name	Partners	Fields	Time	Website	Others
144	Zhejiang University—Unive rsity of Western Australia Joint Research Center of General Management & Protetion of Watery Environments					
145	Zhejiang University Intertional-Collabo rative Center of Quantum Material					
146	Zhejiang University—Lund University Research Center of Energy Utilization & Laser Diagnostics					
147	Zhejiang University—Leeds University International Research Center for Sustainable Energy					
148	Zhejiang University—Unive rsity of Illinois at Urbana-Champa Biomass Energy Utilization Center					
149	Zhejiang University—Fuji Motor Innovation Center					
150	Zhejiang University Sino-US Joint Lab					



SN	Name	Partners	Fields	Time	Website	Others
	of Crop-Molecular Breeding					
151	Sino-Cambodia Joint Laboratory of Food Industry	China National Research Institute of Food and Fermentation Industries, Cambodia Industry Lab-Center		2012	<a href="http://www.cnif.cn/templates/T_second/index.aspx?nodeid=64&amp;page=ContentPage&amp;contentid=2965">http://www.cnif.cn/templates/T_second/index.aspx?nodeid=64&amp;page=ContentPage&amp;contentid=2965</a>	
152	HZUST—WISCO Joint Lab	Wuhan Iron and Steel (Group) Company, Huazhong University of Science and Technology	Auto Steel, Silicon Steel、 High Strength Construction Steel 、 Military steel, New Material, Up & Down Stream, and other Edge Technologies	2009	<a href="http://xqhz.hust.edu.cn/News/XXYW/2012-10-30/141047192.html">http://xqhz.hust.edu.cn/News/XXYW/2012-10-30/141047192.html</a>	
153	Joint Laboratory of Stem Cells & Regenerative Medicine	CAS-GUANGZHOU INSTITUTES OF BIOMEDICINE AND HEALTH 、 Chinese University of Hong Kong	Clinical Application of Stem Cells	2012	<a href="http://news.scienet.cn/html/news/2012/9/268994.shtm">http://news.scienet.cn/html/news/2012/9/268994.shtm</a>	
154	CNPEC-Tsinghua Joint Lab of Nuclear Material and its Safety	China Nuclear Power Engineering Co.,Ltd、 Tsinghua University	Technology Research, Development and Application of the Nuclear Material & its Safety	2012	<a href="http://www.cgnpc.com.cn/n2881959/n3065965/n3070609/6276222.html">http://www.cgnpc.com.cn/n2881959/n3065965/n3070609/6276222.html</a>	
155	Sociology	French National Scientific Research Centre (CNRS) and the Chinese Academy of Social Sciences (CASS)	Post-western sociologies and field sciences in China and in France	2013		
156	SALADYN	CNRS and the Cold and Arid Regions Environmental and Engineering Research Institute of the Chinese Academy of Sciences (CAS) (involves a total of twelve French and four Chinese institutes and laboratories)	The movements of sediments and the dynamics of landscapes in Central Asia	2013		



SN	Name	Partners	Fields	Time	Website	Others
157	Joint Center for Innovation Research	Fraunhofer ISI and the Institute of Policy and Management (CAS)	The "Joint Center for Innovation Research" will deal with consultancy projects from all areas of knowledge which are covered by both research institutes. These include energy efficiency and renewable energies, water infrastructures, urban transport systems, technology transfer, rights of intellectual property, the cooperation of science and research and the technical and economic development of the Chinese market.	2013		
158	Peking-Manchester Centre for Genomic Medicine	University of Manchester and Central Manchester University Hospitals NHS Foundation Trust have signed a formal 'memoranda of collaboration' with Peking University Health Science Centre (PUHSC).	The agreement will pave the way for large-scale studies and stimulate research in genomic medicine looking at conditions such as cancer, blindness, inherited heart disorders and cleft lip and palate. The Manchester-Peking Alliance will result in training schemes for genetic counsellors, doctors and diagnostic scientists in Manchester and Beijing and regular knowledge-sharing exchanges. It comes as The University and The Trust launch their new Manchester Centre for Genomic Medicine which brings together internationally-renowned researchers.	2013	<a href="http://english.pku.edu.cn/News/Events/News/Outlook/10373.htm#!">http://english.pku.edu.cn/News/Events/News/Outlook/10373.htm#!</a>	
159	International Academy for the Marine Economy and Technology (IAMET)	University of Nottingham, Ningbo Municipal Government and Wanli Education Group	Sustainable marine management, Port logistics & the Digital Economy, Marine materials & manufacturing and marine products	2013	<a href="http://www.nottingham.edu.cn/en/news/2013/new-academy-boston-china-marine-economy-am">http://www.nottingham.edu.cn/en/news/2013/new-academy-boston-china-marine-economy-am</a>	Worth £25 million



SN	Name	Partners	Fields	Time	Website	Others
					<a href="#">bitions.aspx</a>	
160	International Space Science Institute: Beijing branch (ISSI-BJ)	ISSI (Switzerland) and the National Space Science Center of the Chinese Academy of Sciences	The program of ISSI-BJ covers many disciplines of space science, including solar and space physics, astronomy and astrophysics, planetary science, astrobiology and microwave gravity science, and earth sciences from space, the statement said	2013	<a href="http://english.cas.ac.cn/Ne/CA/SE/201307/t20130717_106366.shtml#!">http://english.cas.ac.cn/Ne/CA/SE/201307/t20130717_106366.shtml#!</a>	
161	Zibo Hanhai Munich Science and Technology Park		It will provide good-quality physical space, favorable policy, funding support and world-class advanced manufacturing technology service platform including labs and instruments.	2013	<a href="http://www.globaltimes.cn/content/795720.shtml#%2EUd_BOpXyIFl">http://www.globaltimes.cn/content/795720.shtml#%2EUd_BOpXyIFl</a>	
162	China-UK Sustainable Agriculture Innovation Network (SAIN)	China: MOA, MOST DFID, DEFRA & UEA	UK: environmentally sustainable agriculture	2008	<a href="http://www.sainonline.org/English.html?goback=%2Egde_4724980_member_253389499#%21">http://www.sainonline.org/English.html?goback=%2Egde_4724980_member_253389499#%21</a>	
163	China-Portugal Joint Innovation Center on Advanced Materials	Zhejiang University and Portugal Foundation for Science and Technology	The Center is planning to establish four innovative research bases and incubator base concerning biomedical materials and devices, nanotechnology and materials, energy materials and environmental materials.	2013	<a href="http://www.zju.edu.cn/english/redirect.php?catalog_id=279955&amp;object_id=2201401#!">http://www.zju.edu.cn/english/redirect.php?catalog_id=279955&amp;object_id=2201401#!</a>	



SN	Name	Partners	Fields	Time	Website	Others
164	Sino-UK Geospatial Engineering Centre	The University of Nottingham and the Chinese Academy of Surveying and Mapping	The Centre integrates the resources of the University with those of the Chinese Academy of Surveying and Mapping. It will also act as a world-leading incubation centre to realise the results of research and development, production and commercialisation, and will enable technology transfer to take place in businesses	China: 2011 UK: 2012	<a href="http://exchange.nottingham.ac.uk/research/geospatial-centre-awarded-joint-research-status-by-china/?goback=%2Egde_4724980_member_248844820#%21">http://exchange.nottingham.ac.uk/research/geospatial-centre-awarded-joint-research-status-by-china/?goback=%2Egde_4724980_member_248844820#%21</a>	The University of Nottingham's Sino-UK Geospatial Engineering Centre is one of only 20 research collaborations in the world to have been awarded International Joint Research Centre status by the Chinese Ministry of Science and Technology
165	Ningbo International Smart City Research Centre	The University of Nottingham Ningbo China (UNNC) and Ningbo Academy of Smart City Development	will investigate how the city can use information and communication technology (ICT) more effectively.	2013	<a href="http://www.nottingham.edu.cn/en/news/2013/ningbo-smart-city-development-research-centre.aspx">http://www.nottingham.edu.cn/en/news/2013/ningbo-smart-city-development-research-centre.aspx</a>	
166	Chinese-German Center for Bio-Inspired Materials	University Medical Center of Johannes Gutenberg University Mainz (JGU) and the Chinese Academy of Sciences and the Chinese Academy of Geological	this new Joint Center will collaborate on the investigation of bio-inspired materials, in other words, on substances that mimic those structures and functions fabricated by nature	2013	<a href="http://www.uni-mainz.de/press/e/16238_ENG_HTML.php?goback=%2Egde_4724980_mem">http://www.uni-mainz.de/press/e/16238_ENG_HTML.php?goback=%2Egde_4724980_mem</a>	



SN	Name	Partners	Fields	Time	Website	Others
		Sciences			<a href="#">ber_235519917</a> <a href="#">#%21</a>	
167	TU Delft Beijing Research Center (BRC)	Delft University of Technology in the Netherlands. BRC is located in one of the new buildings of the Institute of Semiconductors of the Chinese Academy of Science (CAS). It is closely cooperating with this institute.	Solid State Lighting	2011	<a href="http://news.nost.org.cn/2011/12/opening-ceremony-tu-delft-beijing-research-center/">http://news.nost.org.cn/2011/12/opening-ceremony-tu-delft-beijing-research-center/</a>	
168	TU Delft Wuhan	Delft University of Technology in the Netherlands & Wuhan University	Geo-information, Geodesy and Remote Sensing	2012	<a href="http://news.nost.org.cn/2012/11/2072/">http://news.nost.org.cn/2012/11/2072/</a>	
169	TU Delft Nanjing	Delft University of Technology in the Netherlands	Water research	2012	<a href="http://news.nost.org.cn/2012/11/2072/">http://news.nost.org.cn/2012/11/2072/</a>	
170	TU Delft Guangzhou	Delft University of Technology in the Netherlands & South China University of Technology	Sustainable and smart urban systems and infrastructures for energy, transport, telecom, water and waste, on green and 'smart' buildings and on improving the live-ability of the city.	2012	<a href="http://news.nost.org.cn/2012/11/2072/">http://news.nost.org.cn/2012/11/2072/</a>	
171	Shanghai Nottingham Advanced Academy (SNAA)	The University of Nottingham and the East China University of Science and Technology	Life sciences, green technology, aerospace, and global food security	2012	<a href="http://www.nottingham.ac.uk/news/pressreleases/2012/november/snaalauncheshanghai.aspx">http://www.nottingham.ac.uk/news/pressreleases/2012/november/snaalauncheshanghai.aspx</a>	
172	UK-China Joint Laboratory on Biomimetics of Functional Surfaces & Fluids Interactions	The University of Nottingham and Jilin University	Biomimetics — which looks to plants and animals in the natural world for examples of 'good design' that can be used to tackle the challenges of 21st century engineering.	2009	<a href="http://www.nottingham.ac.uk/news/pressreleases/2009/january/launch-for-joint-uk-china-research-lab-on-biomimetics.aspx">http://www.nottingham.ac.uk/news/pressreleases/2009/january/launch-for-joint-uk-china-research-lab-on-biomimetics.aspx</a>	



SN	Name	Partners	Fields	Time	Website	Others
173	Chang'An - Nottingham	University of Nottingham and Chang'An Automobile Co	powertrain and transmission technologies as well as investigation into electric and hybrid vehicles.	2010		
174	UK-China Joint Laboratory of Thermal Management & Heat Transfer for Low Carbon Vehicles	FAW & The University of Nottingham	Low Carbon Vehicles			
175	Wahaha - The University of Nottingham	Wahaha & The University of Nottingham	Under the five-year agreement, The University of Nottingham and Wahaha will establish joint research centres to work in a number of areas, ranging from bioenergy technology to animal feed, food technologies, electrical motors, and robotics.	2012	<a href="http://www.nottingham.ac.uk/news/pressreleases/2012/august/university-agrees-collaboration-with-biggest-chinese-drinks-company.aspx">http://www.nottingham.ac.uk/news/pressreleases/2012/august/university-agrees-collaboration-with-biggest-chinese-drinks-company.aspx</a>	