



International Knowledge Centre  
for Engineering Sciences and Technology  
under the Auspices of UNESCO  
联合国教科文组织国际工程科技知识中心

# Newsletter 2014



International Knowledge Centre for Engineering Sciences  
and Technology under the Auspices of UNESCO



**International Knowledge Centre  
for Engineering Sciences and Technology  
under the Auspices of UNESCO  
联合国教科文组织国际工程科技知识中心**

The International Knowledge Centre for Engineering Sciences and Technology (shortened as “IKCEST”) is a category 2 centre under the auspices of the United Nations Educational, Scientific and Cultural Organization (shortened as “UNESCO”). IKCEST was established on June 2, 2014. The Chinese Academy of Engineering is responsible for the operation and management of the IKCEST.

Under the auspices of UNESCO, IKCEST is a comprehensive and international knowledge centre devoted to the engineering sciences, technology and applied technology. IKCEST aims at connecting engineering sciences and technology institutions globally, assembling various digital resources relating to engineering sciences and technology, building up a public data service platform and corresponding service environment, and coordinating the building of various professional knowledge systems, thus providing knowledge-based services at a global scale in the form of consultancies, scientific research and education for policy-makers and engineering science and technology professionals in the world, with particular reference to the developing countries.

The specific tasks and functions of IKCEST are as follows: to establish an international engineering and technology resources hub; to establish a public data service platform, and to develop the technology for mining and analyzing knowledge from big data; to cooperatively build professional knowledge service systems, and to build capacity in developing countries; to foster interdisciplinary engineering talents with big data processing ability; and to assist UNESCO to fulfill its aims and support its action plans.

# CONTENTS

## Sponsored by:

International Knowledge  
Centre for Engineering  
Sciences and Technology  
under the Auspices of  
UNESCO ( IKCEST )

## Editor-in-chief:

Yi Jian

## Managing Editor:

Liu Chang

## Editors:

Wang Guan    Chen Yan  
Jin Yan        Cao Jianfei  
Fu Zhijie

## Address:

No.2 Bingjiaokou Hutong,  
Xicheng District, Beijing  
100088, P. R. China

## Tel:

+86-10-59300230

## Fax:

+86-10-59300230

## January

- 4     IKCEST preparatory team visited several domestic category-2 centres under the auspices of UNESCO

## February

- 7     Preparations for the agreement signing and unveiling ceremony of IKCEST progressed steadily

## March

- 9     Technology Research Centre set up  
10    Preparation and coordination meeting for agreement signing and unveiling ceremony of IKCEST held in CAE

## May

- 11    Discussion meeting on IKCEST development held in CAE

## June

- 12    Signing and unveiling ceremony for International Knowledge Centre for Engineering Sciences and Technology held in Beijing  
14    Address by Irina Bokova, Director-General of UNESCO on the occasion of Inauguration of the International Knowledge Centre for Engineering Sciences and Technology  
15    Representatives of various national academies of engineering visited IKCEST headquarter  
17    Application system platform and portal site development of CKCEST achieved initial progress and went in trial operation  
18    UN Expert Group on Resource Classification (EGRC) sought cooperation with IKCEST

## October

- 19    Discussion meeting on Charter and Rules of Procedures of the Governing Board of IKCEST held in Beijing  
20    Discussion meeting on IKCEST development plan held in Beijing

## November

- 21    NAEK Delegation visited IKCEST  
22    Chinese Ambassador Zhang Xiuqin, Permanent Delegate to UNESCO, visited IKCEST  
23    New representative of Chinese Permanent Delegation to UNESCO visited IKCEST  
24    IKCEST discussed data cooperation with IRTCES  
25    IKCEST visited MOFCOM to discuss potential cooperation in training  
26    IKCEST went on an in-depth survey and study tour to WHITR-AP

## December

- 27    IKCEST discussion meeting on a number of major issues held in Hangzhou  
28    IKCEST representative attended the 29th session of Chinese National Commission for UNESCO  
29    IKCEST platform development discussion meeting held in Beijing  
30    Main Data Centre and Demo Centre established  
30    Sub-Centres and resource building progressed steadily  
31    Management system and structure of CKCEST took shape  
31    IKCEST provided young people with science knowledge



## »» January

### IKCEST preparatory team visited several domestic category-2 centres under the auspices of UNESCO

In November 2013, the 37th session of the General Conference of UNESCO approved the establishment of two category-2 centres under the auspices of UNESCO in China. The International Knowledge Centre for Engineering Sciences and Technology (“IKCEST”), applied by the Chinese Academy of Engineering, is one of them. To ensure the successful construction of the centre, the leaders and members of the preparatory team visited the seven already established category-2 centres in China from January 9 to January 20, 2014.

Through the visit, the preparatory team gained in-depth understanding of the process and problems of such centres and obtained hands-on experience and advices. After the visit, the preparatory team wrote a recap report and came out with a development plan for the IKCEST, which laid a solid foundation for the launch of the IKCEST in June 2014.

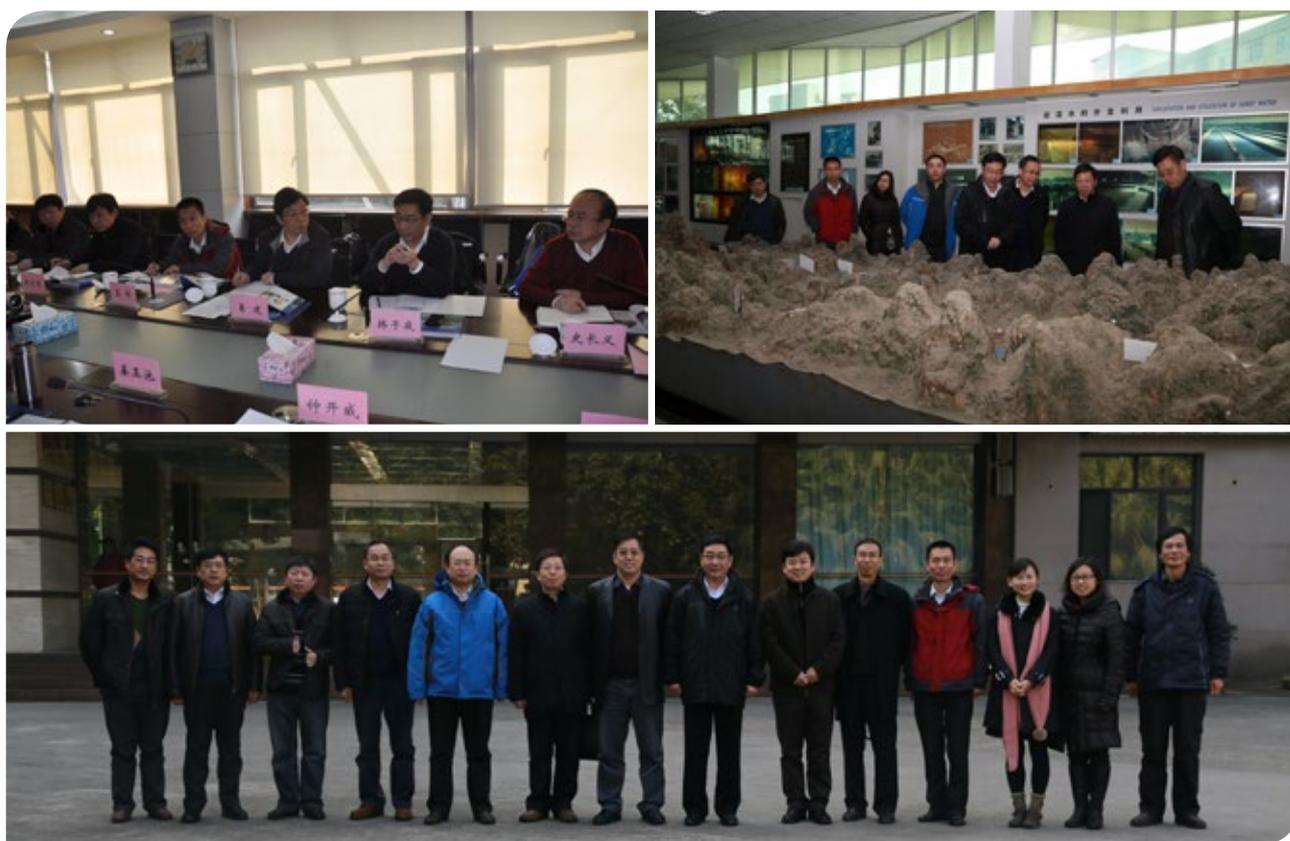


IKCEST preparatory team visited INRULED



IKCEST preparatory team visited HIST

The centres visited include the International Research and Training Centre on Erosion and Sedimentation (“IRTCES”), International Research and Training Centre for Rural Education (“INRULED”), International Centre on Space Technologies for Natural and Cultural Heritage (“HIST”), International Training Centre for Intangible Cultural Heritage in the Asia-Pacific Region (“CRIHAP”), and International Research and Training Centre for Science and Technology Strategy (“CISTRAT”) in Beijing, as well as the World Heritage Institute of Training and Research-Asia and Pacific Region (“WHITP-AP”) in Shanghai and Suzhou and the International Research Centre on Karst (“IRCK”) in Guilin, Guangxi.



IKCEST preparatory team visited IRCK



IKCEST preparatory team visited WHITP-AP (Shanghai )



IKCEST preparatory team visited WHITP-AP (Suzhou)



IKCEST preparatory team visited CRIHAP



IKCEST preparatory team visited IRTCES

# February

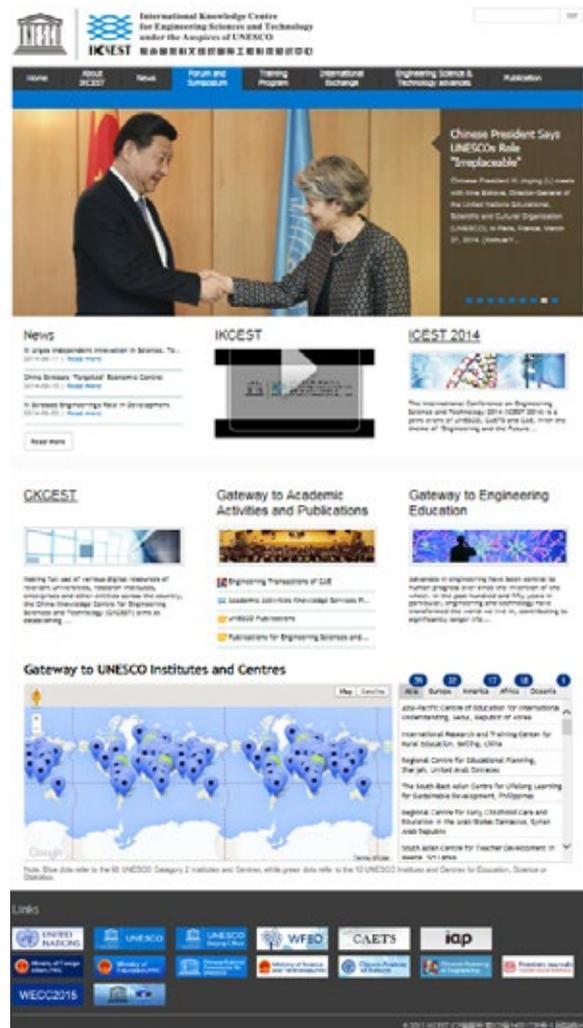
## Preparations for the agreement signing and unveiling ceremony of IKCEST progressed steadily

The preparations for the agreement signing and unveiling ceremony of the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) were completed by the preparatory team from February to May of 2014.

Work completed during this period of time included the logo design, implementation and launch of portal website online, an introductory video on the overview of IKCEST, working space and headquarter preparation, design of brochures and other promotional materials for the Centre.



IKCEST logo



IKCEST portal website



International Knowledge Centre  
for Engineering Sciences and Technology  
under the Auspices of UNESCO  
Newsletter 2014



video on overview of IKCEST



IKCEST Headquarter



IKCEST brochure



IKCEST logo bag

## » March

### Technology Research Centre set up

On March 8 2014, Chinese Academy of Engineering and Zhejiang University signed the Agreement on Co-build the China Technology Research Centre for Engineering Sciences and Technology Data and Knowledge. This centre is responsible for the integrated innovation and independent research and development for the professional knowledge service system and the key generic technology of application development platform; working on the key technical problems during set up of the Knowledge Centre; at the same time, observing the related new technology trend both at home and abroad, establishing the technology exchanges and cooperation channels with the research institutions both at home and aboard.

Preliminary research achievements have already been made in the following areas: data aggregation and labeling, in-depth analysis and knowledge reorganization, deep search and multi-dimensional navigation, collaboration crowdsourcing, visual analysis of big data, knowledge network establishment, cross-media knowledge computing, crowdsourcing technology, display and interactive technology, etc.

In 2014, in the progress of the professional knowledge service system development, the Technology Research Centre focused on the research and development in the core technologies such as knowledge network technology and knowledge service technology, etc. It also worked on maturity evaluation, testing and integration, the establishment of the reference expertise service system for the technical achievements in the earlier stage; focused on the research for the knowledge network technology, knowledge service technology and the integration of the crucial technologies; established the reference knowledge system; promoted the sustainable research and development; and tackled key problems in the key technologies including knowledge network establishment, knowledge network retrieval and presentation, intelligent recommendation, thematic generation and so on. It established a feasible hardware test platform for the integration of the key technology and reference knowledge service system solutions, validated key technological achievements, and provided reference services for the establishments of the knowledge service systems.





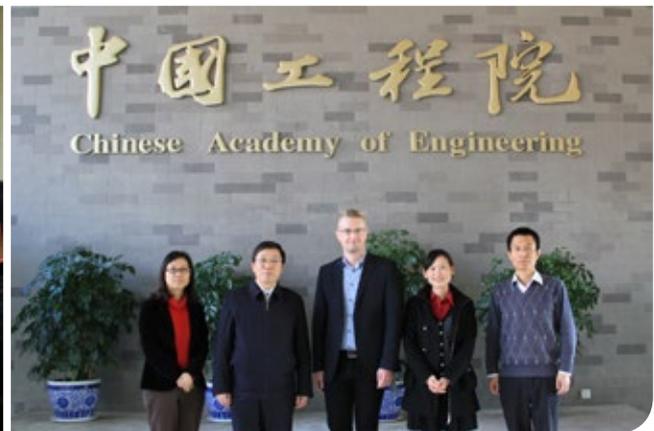
## Preparation and coordination meeting for agreement signing and unveiling ceremony of IKCEST held in CAE

On March 20, 2014, a preparation and coordination meeting for agreement signing and unveiling ceremony of IKCEST was held in Meeting Room 334 of the CAE.

The attendees included Hans Dencker Thulstrup, program specialist of UNESCO Beijing Office, Kang Jincheng and Xu Jin, both Deputy Director-generals of the Department of International Cooperation of the CAE, Tian Qi and Ren Hongtao, Director of Division One and Two respectively, of the Department of International Cooperation, as well as the preparatory team members. They discussed matters related to the agreement signing and unveiling ceremony of the IKCEST.

The preparatory team briefly introduced the initial development plan for the centre. The two sides held detailed discussions on the agreement texts and ceremony implementation plan for June 2014. They also reached agreements as to specific issues related to Ms. Irina Bokova, Director-General of UNESCO's, attending the signing and unveiling ceremony.

In the end, the two sides made detailed arrangements on their respective tasks and timeline for the important ceremony to be held in June.





## Discussion meeting on IKCEST development held in CAE

On May 13, 2014, a discussion meeting on IKCEST development was held in VIP Room 122 of the CAE.

CAE President Zhou Ji, Executive Vice President Pan Yunhe and Deputy Secretary General Wu Guokai met Ambassador Zhang Xiuqin who will soon take office as representative of the P.R.C. to UNESCO. Attendees of the meeting included Qin Changwei, Deputy Secretary General of Chinese National Commission for UNESCO, Shen Yubiao, Division Chief of the International Department of the Ministry of Education, Xue Lian, Deputy Division Chief of the Science & Culture Division of the Secretariat of the Chinese National Commission for UNESCO, Kang Jincheng, Deputy Director-general of the Department of International Cooperation of the CAE, Yi Jian, Deputy Director-general of the General Administration Department of the CAE, also the Director of the Project Management Office for the China Knowledge Centre for Engineering Sciences and Technology, together with members of the project management office. The attendees exchanged views on the construction of the IKCEST

During the meeting, the preparatory team briefed on preparatory work accomplished already and to be accomplished prior to the signing and unveiling ceremony, displayed a system function demonstration video, and made a presentation on website portal of the IKCEST.

Executive Vice President Pan Yunhe briefed on overall information of the IKCEST as well as initial achievements made by the China Knowledge Centre for Engineering Sciences and Technology (CKCEST). He stressed that the IKCEST is a bridge to connect the world engineering science and technology knowledge, and the CAE has the ability and confidence to motivate the talented people in domestic engineering science and technology community and leverage the domestic information resource advantage to bring together international engineering science and technology information resource in order to finally build up the platform of the IKCEST.

President Zhou Ji pointed out that the objectives of IKCEST are highly consistent with those of UNESCO, and it is a strategic construction project, which will provide strong support for the engineering science and technology development of UNESCO. The first step should be to form up alliances with the other UNESCO institutes and centres, other category 2 centres under the auspices of UNESCO, and bring together UNESCO engineering science and technology resources to realize gradual development.

Ambassador Zhang Xiuqin listened to the briefings made by President Zhou Ji and Executive Vice President Pan Yunhe and promised that she would provide full support for the great undertaking of the IKCEST.

## » June

# Signing and unveiling ceremony for International Knowledge Centre for Engineering Sciences and Technology held in Beijing

The Signing and Unveiling Ceremony of International Knowledge Centre for Engineering Sciences and Technology (IKCEST) under the Auspices of UNESCO was held in Beijing on June 2, 2014.

The Signing and Unveiling Ceremony was presided over by Mr. Pan Yunhe, Executive Vice President of the Chinese Academy of Engineering (CAE). Mr. Zhou Ji, President of the CAE, and Ms. Irina Bokova, Director-



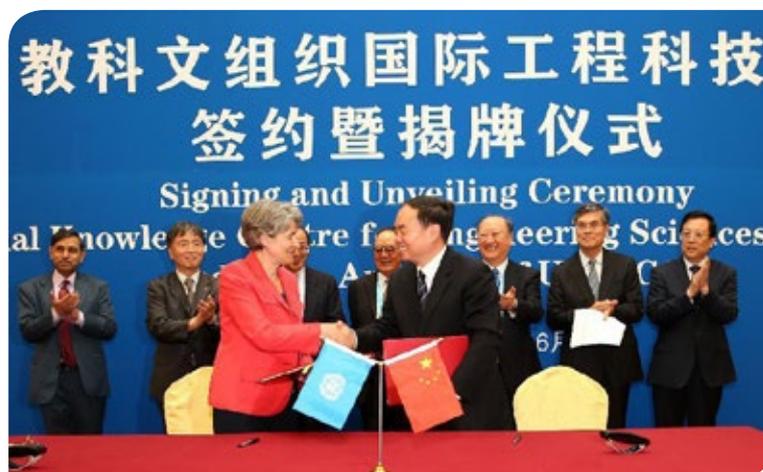
General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), signed the Agreement regarding the Establishment of the International Knowledge Centre for Engineering Sciences and Technology as a Category 2 Centre under the Auspices of UNESCO in Beijing, on behalf of the Chinese Government and the UNESCO respectively.

Mr. Song Jian, Vice Chairman of the 9th CPPCC National Committee, Honorary Chairman of CAE Governing Board, Mr. Xu Kuangdi, Vice Chairman of the 10th CPPCC National Committee, Honorary Chairman of CAE Governing Board, Mr. Hao Ping, Vice Minister of Education, Chairman of the 37th UNESCO General Conference, also Chairman of the Chinese National Commission for UNESCO, together with Mr. Tang Qian, Assistant Director-General for Education, UNESCO, Mr. Han Qunli, Director of Division of Ecology and Earth Sciences, UNESCO, and Mr. Abhimanyu Singh, Director and Representative of UNESCO Beijing Office, witnessed the signing process.

Under the auspices of UNESCO, IKCEST will be a comprehensive and international knowledge centre devoted to the engineering sciences, technology and applied technology. IKCEST is established as a globally connected engineering institution, serving to assemble various digital resources relating to engineering sciences and technology, build a public data service platform and corresponding service environment, and coordinate the building of specialized knowledge systems. IKCEST aims at providing

knowledge services at a global scale in the form of consultancies, scientific research and education for policy-makers, engineers, researchers and technicians in the field of engineering sciences and technology, with particular reference to the developing countries.

IKCEST will cooperate with research institutes, enterprises and institutions of higher learning worldwide to build a widely connected international hub for engineering and technology resources, thus laying a global data foundation from which to operate. IKCEST will establish a public data service platform, and to develop the technology for mining and analyzing knowledge from big data. IKCEST will



cooperatively build specialized knowledge service systems, build capacity in developing countries, foster interdisciplinary engineering talents with big data processing ability, and assist UNESCO to fulfill its aims and support its action plans.

After the signing of the Agreement, Ms. Bokova, Mr. Song Jian, Mr. Xu Kuangdi and Mr. Zhou Ji, unveiled the plate and logo for IKCEST together.

A total of over 300 people attended the event, including all foreign participants of the International

Conference on Engineering Science and Technology 2014 (ICEST2014), representatives from the Chinese National Commission for UNESCO and the UNESCO Beijing Office, chairpersons and speakers for all plenary and parallel sessions of ICEST2014, some Chinese participants of the Conference, as well as relevant leaders of the CAE.





## Address by Irina Bokova, Director-General of UNESCO on the occasion of Inauguration of the International Knowledge Centre for Engineering Sciences and Technology

Beijing, China, 2 June 2014

Mr. Song Jian, Vice Chair of the 9th Chinese People's Political Consultative Conference,

Mr. Xu Kuangdi, Vice Chair of the 10th Chinese People's Political Consultative Conference,

Zhou Ji, President of the Chinese Academy of Engineering,

Excellencies, Ladies and Gentlemen,

I am deeply honoured to be with you today, to launch the International Knowledge Centre for Engineering Sciences and Technology, a category 2 centre under the auspices of UNESCO.

I wish to thank you all for attending this event, and I thank Mr Zhou Ji and the Chinese Academy of Engineering for bringing this initiative to fruition.

Let me express my gratitude also to the Government of the People's Republic of China and National Commission of China for UNESCO for its leadership.

The International Knowledge Centre for Engineering Sciences and Technology embodies a commitment that both China and UNESCO share.

This is the commitment to support all countries in their aspirations to build knowledge societies -- the commitment to strengthen the ability of all societies to create and share knowledge, for the benefit of all.

On 27 March, I had the honour of welcoming His Excellency President Xi Jinping to UNESCO Headquarters in Paris.

On this occasion, the President spoke of the importance of scientific cooperation-in his words -- "to spread the seeds of peace of the idea of peace far and wide."

Advancing cooperation in engineering, the sciences and technology has always been at the core of UNESCO's work.

In fact, it may be considered part of our DNA, as UNESCO was born in 1945 at the Institute of Civil Engineers in London.

The world has changed dramatically since then, but the need for engineering, science and technology has only deepened.

This is why this new Centre is so important.

Engineering and innovation, translating research into practical goods and services for the good of all-these are essential for all countries today, and especially for developing countries.

This new Centre will develop a digital library

on engineering and technology, focusing on issues of importance to developing countries.

It will provide training on data processing and analysis, and it will encourage international exchanges, with a focus on South-South cooperation and on climate change.

This UNESCO category 2 Centre joins nine other such centres in China -- six of which focus on the natural sciences.

It will strengthen ever more the partnership that UNESCO has forged with China, to promote inclusive and sustainable human development, and this includes 32 UNESCO Biospheres Reserves, which I consider 'living laboratories' of sustainability, along with 25 UNESCO university chairs.

This includes also the Scientific Advisory Board, launched this January, whose secretariat is hosted by UNESCO and which includes Professor Ke Gong, President of Nankai University.

The Scientific Advisory Board will provide advice on science, technology and innovation for sustainable development to the Secretary-General and Executive Heads of UN organizations.

More than ever, I believe we need today to craft new approaches to engineering and the sciences -- through education, through recruitment and training, through capacity-building, in order to address the needs of societies in resolving complex new and challenges, today and in the future.

These are the goals of the UNESCO Engineering Initiative and the objectives of this new Centre.

In all this, China plays a leading role, and I wish to thank most especially His Excellency Mr President Xi Jinping for his commitment and vision.

We see China's leadership in the sciences-as well as in education, and across the mandate and competences of UNESCO.

In this spirit, I wish once again to congratulate the People's Republic of China on launching this International Knowledge Centre for Engineering Sciences and Technology, under the auspices of UNESCO.

I wish the Centre and the Chinese Academy of Engineering every success, and I look forward to moving forward together to mobilize the power of engineering for a sustainable future for all.

Thank you.

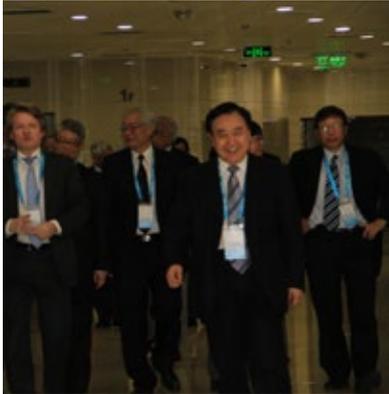
## Representatives of various national academies of engineering visited IKCEST headquarter

On the evening of June 3, 2014, more than 40 representatives of various national academies of engineering as participants of the International Conference on Engineering Science and Technology (ICEST2014) and the 2014 CAETS Convocation, visited the headquarter of the IKCEST.

The IKCEST team welcomed the visiting guests, introduced them to the newly-equipped headquarter, played a video program on the system functions demonstration in order to present on the construction concept and initial progress in China. The representatives showed high interest in the IKCEST and exchanged view with relevant experts.

The guests also visited the CAE Engineering Science and Technology Achievements Exhibition, CAE Members' Calligraphy and Painting Exhibition, as well as the Energy Saving Achievements exhibition.





## Application system platform and portal site development of CKCEST achieved initial progress and went in trial operation

As an important part of and vital support for the International Knowledge Centre for Engineering Sciences and Technology (IKCEST), the China Knowledge Centre for Engineering Sciences and Technology (CKCEST) launched its portal site ([www.ckcest.cn](http://www.ckcest.cn)) in June, 2014. The whole system was built on an unified basic specification and standards; integrated the information from the portals of 12 specialized sub-centres on the following areas, consultation research, Chinese herbal medicine, engineering science and education books, metal materials, strategic emerging industries, manufacturing, chemical industry, medicine and health, agriculture, academic activities, energy, marine science and so on, as well as the knowledge service applications of the expertise developed by all the sub-centres. By submitting the overall data, data query service, and search service, a multi-dimensional data aggregation is achieved, which initially opened up the connection between Internet data, books and documents, and the professional databases. The total number of the professional data records collected by the main centre has exceeded ten million. Through one-stop log-in, users can access data both in the main centre and all the sub-centres including papers and statistical data from CNKI, China Economic Information Network, DRCNET and so on. The unified search covers metadata and source data including the Internet, professional data, books and documents and etc.; established data classification and technology thesaurus of engineering sciences and technology and provided the semantic services preliminarily; established the flexible and scalable cloud computing environments and the Integration Distributed Network Management System, and achieved the centralized data management, system monitoring and other core services; realized "One stop" solution to the visit of the users and resources access, showing the overall services of the CKCEST.

The application system platform of CKCEST is the core system and support facilities of the Knowledge Centre. Its goal is to provide the core technologies and system features / facilities to support the research and development of professional knowledge application service; support the construction and operation of the main portal, the sharing platform, the management of the sub-centre, integration of the professional knowledge service in order to achieve user unified and hierarchical management, billing management, monitoring management, log management, traffic policing, security management, operation management and other core functions to support the daily operation of the Knowledge Centre; provide Knowledge Centre a variety of application services, both basic and comprehensive, including knowledge service application development tools, software packages that support data standardization accessing, portal templates plugin and etc. The initial set up has now completed.



## UN Expert Group on Resource Classification (EGRC) sought cooperation with IKCEST

On June 25, 2014, Madam Yang Hua (member of the Contact Committee of UN EGRC, member of SPE Reserve Committee, Deputy Director of Overseas General Office of PetroChina Exploration & Development Research Institute) visited the IKCEST and explored the possibility of cooperation between the EGRC and the IKCEST

Yang Hua made an introduction of EGRC. The EGRC is governed by the UN Economic Commission for

Europe (UNECE). Its members include energy resource management institutions at UN, regional, national and corporate level, international authoritative academic organizations (e.g. SPE, AAPG, IGA, and IAEA) and global energy companies, consulting firms, financial consortiums, asset evaluation and management institutions and energy experts. The objectives of EGRC is to promote energy standards and rules globally through academic activities, communicate and discuss the existing state, latest developments and future trends of global energy and mine resource classification system, push for standardization and international consistence of various standard systems, promote the UNFC as a global consistent framework for energy/mine classification and evaluation system, and provide technological solution and support for reasonable utilization of global energy utilization and to enhance management efficiency, energy supply security and financial resource security.

Director Yi Jian introduced the development concept and mission of IKCEST and stressed the objectives of integrating global engineering science and technology resources, establishing a public data service platform and service environment with synergy, and providing consulting, scientific research and education service for policies makers and practitioners in engineering science and technology communities in the world, especially for those in developing countries. To this end, the IKCEST would love to join hands with the expert team, in order to provide an effective means for China to understand and influence the world.

The two sides stated intention for cooperation in the oral form and had an initial discussion on the content of cooperation, including promotion of relevant knowledge, information and technology, promotion of academic exchanges in the field of energy both inside and outside China, gradual establishment of relevant databases, offering of scientific and consulting services, as well as joint organization of international conferences and training workshops. The specific cooperation model would be discussed later.



## »» October

### Discussion meeting on Charter and Rules of Procedures of the Governing Board of IKCEST held in Beijing

On October 24, 2014, the discussion meeting on the Charter and Rules of Procedures of the Governing Board of IKCEST was held in Beijing. Attendees of the meeting included experts of some domestic category-2 centres under the auspices of UNESCO, such as the International Centre on Space Technologies for Natural and Cultural Heritage (“HIST”), International Research and Training Centre for Rural Education (“INRULED”), International



Research and Training Centre on Erosion and Sedimentation (“IRTCES”) and International Training Centre for Intangible Cultural Heritage in the Asia-Pacific Region (“CRIHAP”) under the auspices of UNESCO, experts of CKCEST Technology Research Centre, experts of system public platforms and members of the project management office. The meeting was chaired by Yi Jian, Deputy Director-general of CAE General Administration Department and Director of the Project Management Office

The attendees discussed the Charter and Rules of Procedures of the IKCEST Governing Board (draft for discussion) in details and put forward a number of constructive comments and suggestions.

In the end, Director Yi thanked the participants for their valuable comments and said the centre would carefully consider and adopt the suggestions and revise the Charter and Governing Board Rules of Procedures accordingly. He also hoped the experts would continue to provide guidance on the drafting and revision of relevant documents of the centre.

## Discussion meeting on IKCEST development plan held in Beijing

On October 25, 2014, the discussion meeting on the IKCEST development plan was held in Beijing. Attendees of the meeting included experts of certain category-2 centres, such as the International Centre on Space Technologies for Natural and Cultural Heritage (“HIST”), International Research and Training Centre for Rural Education (“INRULED”), International Research and Training Centre on Erosion and Sedimentation (“IRTCES”) and International Training Centre for Intangible Cultural Heritage in the Asia-Pacific Region (“CRIHAP”) under UNESCO, experts of CKCEST Project Technology Research Centre, experts of system public platforms and members of the management office. The meeting was chaired by Yi Jian, Deputy Director-general of the CAE General Administration Department and Director of the Project Management Office

Based on the IKCEST 2014~2018 Development Guideline, the attendees discussed the content and working plan of the Medium/Long Term Development Strategy and Biennial Plan of IKCEST and came up with valuable comments.

For example, the experts stressed the importance of referring to relevant UNESCO strategies to find important matching areas, carrying out survey together with UNESCO institutions to understand the service required by users (e.g. other institutions and category-2 centres under UNESCO), carrying out cooperation with related provinces and cities in the form of joint workshops and seminars (e.g. HIST set up Zhengzhou Base and Harbin Base, which motivated local staff and achieved good result), expanding the expertise of IKCEST from water resource to ocean, ecology and geology areas, in a bid to fit the top priorities of UNESCO and leverage the consulting advantage of CAE, and giving full play to the brand of UNESCO in the planning process.

In the end, Director Yi thanked the participants for their time and valuable comments and said the centre would carefully consider and adopt the suggestions. He also expressed the wish to further strengthen connection with brother institutions for mutual support and development.



## » November

### NAEK Delegation visited IKCEST

On November 5, 2014, former vice president of Samsung Electronics Corporation, former Minister of the Korean Information and Communication, Academician CHIN, Dae Je, President of Skylake Investment Co., Ltd., headed a delegation to visit Chinese Academy of Engineering.

Academician CHIN, Dae Je presented an academic report entitled "IT development in Korea and the introduction of Samsung Electronics". Bilateral talks were also held between representatives of both Academies. Hereafter, the Korean delegation visited the energy-saving building facilities of the Chinese Academy of Engineering, the Engineering Science and Technology Achievements Exhibition as well as the headquarter of IKCEST.

The International Knowledge Centre for Engineering Sciences and Technology briefed the delegation on some basic information of the centre and played related videos, then the two parties held a brief exchange. President CHUNG, Joon Yang, and Executive Vice President KUM, Dong Wha from the National Academy of Engineering of Korea (NAEK), and representatives from Korea Volkswagen Electric, Hyundai Motors, POSCO, and Korea Telecom also participated in the activities.



## Chinese Ambassador Zhang Xiuqin, Permanent Delegate to UNESCO, visited IKCEST

On November 7, 2014, Chinese Ambassador Zhang Xiuqin, Permanent Delegate to UNESCO, visited International Engineering Technology Knowledge Centre (IKCEST). Zhou Ji, President of the Chinese Academy of Engineering (CAE), Wu Guokai, Deputy Secretary-General of the CAE, Xie Bingyu, Director-general of Department One of the CAE, Prof. Wang Sunyu with the Education Research Institute of Qinghua University, Tian Qi, Director of Division One of the Department of International Cooperation together with relevant personnel from the Centre were present at the meeting.



The meeting was held in the headquarter of the IKCEST. President Zhou Ji briefed Ambassador Zhang on the development status of the IKCEST, expressing his gratitude to her for the support, and hoping that UNESCO will continue its support to the development of the IKCEST. Ambassador Zhang expressed the recognition and confidence on the development concept of the Centre, indicating that she and the other delegates to UNESCO will continue to follow and support the development of the IKCEST.

During the meeting, discussions were also held on the preparatory work for the International Centre for Engineering Education, a category 2 centre under the auspices of UNESCO still in its application process, a joint-bid program by the Chinese Academy of Engineering and Tsinghua University.



## New representative of Chinese Permanent Delegation to UNESCO visited IKCEST

On November 13, 2014, the new representative Yi Zhijun of the Chinese Permanent Delegation to UNESCO visited the CAE and learnt about the progress of IKCEST. Yi Jian, Deputy Director-general of the CAE General Administration Department and Director of the Project Management Office, chaired the meeting. Members of the Project Management Office attended the meeting.

Yi Jian first introduced the background and building philosophy of the IKCEST. Yi Zhijun then introduced major work he would do after taking office, that is, science & technology, information, media, as well as international training and academic exchange. A video on IKCEST's overview as well as a video on IKCEST's system function demonstration through case studies were played. And the two sides carried out discussions.

Yi Zhijun said the two video programs gave him a deeper understanding of the IKCEST and could help him to better introduce the IKCEST externally. He thought highly of the concept and role of the IKCEST and made commitments that strong support should be provided in various forms to the centre, including information support (e.g. international meeting information in related areas) and feedback, as well as boost of cooperation between various category-2 centres. Yi Jian promised that IKCEST should try its very best to provide needed services to the Chinese Permanent Delegation to UNESCO.



## IKCEST discussed data cooperation with IRTCES

On the afternoon of November 18, 2014, the data cooperation meeting between the IKCEST and International Research and Training Centre on Erosion and Sedimentation (“IRTCES”) was held in Meeting Room 401 of the IRTCES.

The IKCEST participants included Director Yi Jian, four Project Management Office members (i.e. Pan Gang, Liu Chang, Fu



Zhijie, Wang Guan), and three experts, namely, Mao Yiming, Director of the Information Centre of China Iron & Steel Research Institute, Li Chunmeng, Deputy Head of the Metallurgical Information Department of China Metallurgical Information and Standardization Institute, and Ling Ligang, Technological Supervisor of the IKCEST Project System Public Platform Joint Development Centre. The participants from the IRTCES included Deputy Director Liu Guangquan (responsible for overall work of the centre), Division Chief Wang Yangui (responsible for the writing of China River and Sediment Communique), Deputy Chief Liu Cheng (responsible for construction and maintenance of “global river and sediment management database”) and Section Chief Qi Chunyu.

Director Yi Jian first introduced the background of the IKCEST and the purpose of the survey and study tour. Deputy Director Liu Guangquan made a brief introduction and recap of the work done by the IRTCES over the past thirty years. Deputy Division Chief Liu Cheng introduced the “global river and sediment management database”. Deputy Division Chief Wang Yangui introduced the China River and Sediment Communique. The attendees made in-depth discussions about the next step of cooperation between the IKCEST and the IRTCES, especially at data level.

The two sides both believed the concept of the IKCEST is in line with the big data background and the demand of China’s engineering science & technology development, and it is important to connect the IRTCES to the platform of the IKCEST based on its comprehensive and authoritative data resource in specialized areas. They also communicated on the size of the IRTCES database, number of service targets, data value and even the ownership of specific data resource. The two sides expressed initial intention for cooperation on the integration and utilization of the IRTCES data resource, while the specific cooperation model would be discussed in further details in the future.

## IKCEST visited MOFCOM to discuss potential cooperation in training

On the afternoon of November 27, 2014, the IKCEST visited the MOFCOM, and the two sides held a meeting on potential cooperation in the future, with foreign aid training as the focus. The IKCEST team was led by Yi Jian (Deputy Director-general of the CAE General Administration Department and Director of the Project Management Office) and composed of members of



the Project Management Office. Deputy Director-general Liu Junfeng of the Department of Foreign Aid of the MOFCOM and Peng Shujian (first secretary in commerce) and Liu Shuguang of the HR Division of the department attended the meeting.

Director Yi Jian introduced the background of the IKCEST and the purpose of the visit and played the video on the overview of the IKCEST. Deputy Director-general Liu Junfeng showed high interest in the concept of the IKCEST and communicated with Yi Jian on issues like intellectual property rights and the degree of opening-up to the public, etc. The two sides also exchanged views on the target, purpose and content of training provided by the IKCEST. Liu Junfeng briefly introduced the general information of the Department of Foreign Aid as well as the different models and processes of its international training.

The two sides reached the following consensus on cooperation in international training: The two sides could establish cooperative relations and mechanism. The MOFCOM might provide support to the IKCEST's international training. Specific models would be discussed later. As the Department of Foreign Aid had finished the whole process of training program application for 2015, the IKCEST would possibly join hands with trainers for certain selected projects in similar fields in this year. Also, IKCEST would try to join the department's 2016 training program application process to become part of the project pool and officially receive support in the form of projects.

Meanwhile, Liu Junfeng expressed the willingness of carrying out further cooperation, for instance, by inviting CAE Members to be the consultants for assisted countries.

In the end, Director Yi thanked the support provided by the Department of Foreign Aid to IKCEST in international training and expressed the willingness of making joint efforts to increase China's soft strength in engineering science and technology and serve the country's overall strategy.

## IKCEST went on an in-depth survey and study tour to WHITR-AP

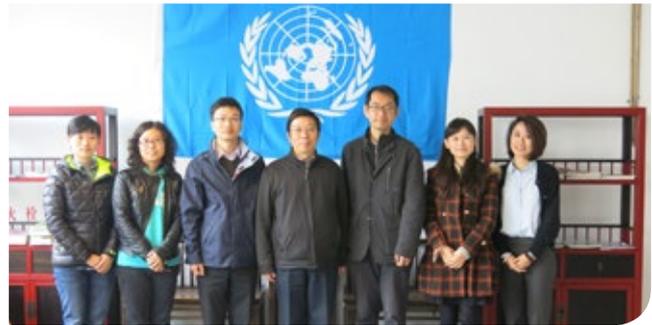
On the morning of November 28, 2014, the IKCEST visited the World Heritage Institute of Training and Research for the Asia and the Pacific Region under the auspices of UNESCO ("WHITR-AP"). The two sides held a meeting in meeting room 301 of Wenyuan Building of Tongji University, Shanghai Municipality.

The IKCEST team was led by Yi Jian (Deputy Director-general of the CAE General Administration Department and Director of the Project Management Office) and made up of members of the Project Management Office. Li Xin, Secretary General of the WHITR-AP and Director of the Shanghai Centre, together with Xue Zhijian, Director of the Suzhou Centre, and Sun Yizhou, Project Commissioner of Shanghai Centre, attended the meeting.

The two sides discussed the Charter and Rules of Procedures of the Governing Board (revised version) of the IKCEST, as well as its future development direction and plan. They also made in-depth discussions on the compiling of Newsletters, evaluation made by the UNESCO as well as the international training programs provided by the WHITR-AP.

The attendees made comments on the Charter and provided the following suggestions on the future development direction and plan of the IKCEST: The key task at the moment should be to appoint proper candidates to key positions (i.e. Chairman of Governing Board, Director of the Centre), establish appropriate organizational structure (e.g. registration, execution, legitimate position, staffing, systems and mechanisms) and carry out public communication (e.g. by relying on strength of CAE Members) to increase influence of the new organization. The two Centres could carry out cooperation in cultural relic protection and communication (e.g. garden monitoring technology and classical garden repair technology for Suzhou Centre). The IKCEST could establish contact with the intellectual property rights bureau and invite representatives from the bureau to become members of the IKCEST Governing Board or Advisory Committee, in a bid to solve resource bottleneck. The IKCEST should play its role in the establishment of technological standards and provide assistance to the development of public rules and international rules. It should drive the establishment of a category-2 centre committee based on a rotation system to coordinate resource among different category-2 centres and increase efficiency. The IKCEST should also consider how to leverage the influence of UNESCO as well as other international organizations and resources to serve the objectives of the IKCEST.

In the end, Director Yi thanked the continuous support provided by the WHITRAP and said the IKCEST would refine relevant documents and draft the development plan according to the suggestions raised in the meeting. He also said the IKCEST looked forward to further cooperation and mutual development with the WHITRAP.



## »» December

### IKCEST discussion meeting on a number of major issues held in Hangzhou

On the morning of December 3, 2014, the IKCEST discussion meeting on a number of major issues was held in CKCEST Joint Development Centre in Huanglong International Plaza in Hangzhou City, Zhejiang Province.

Attendees of the meeting included the Project Management Office Director Yi Jian, Deputy Director Gao Xiang, IKCEST contact person Liu Chang, head of project platform Cao Xuejun, Technological Supervisors Ling Ligang and Ye Jianxin, product commissioner Ding Yingying and QA test commissioner Yang Zhenzhen.



The meeting discussed four major things, i.e. international training, international conference, website construction/function development and organizational structure. The participants made comments through brainstorm and came up with a lot of constructive suggestions on the next step development of the IKCEST. For example: The IKCEST could hold international training jointly with other category-2 centres, in order to learn from their extensive training experiences and ensure the success of the first training.

In the end, Yi summarized the discussion and believed the meeting was fruitful, and relevant work should be carried out based on the suggestions. He stressed the importance of platform to both the IKCEST and CKCEST, and asked the platform head Cao Xuejun to provide a platform development plan for the IKCEST for further discussion. Director Yi required the Project Management Office and the platform team to work together in their exploration of a proper path for the development of the IKCEST.

## IKCEST representative attended the 29th session of Chinese National Commission for UNESCO

On the morning of December 5, 2014, the 29th session of the Chinese National Commission for UNESCO (shortened as “Commission”) was held in Beijing.

Secretary General Du Yue of the Commission chaired the meeting. He summarized the work in 2014 and set the outlook for 2015. Hao Ping, Director of the Commission, Vice Minister of Education and Chairman of the 37th UNESCO General Conference, attended the meeting and made a speech about three challenges, together with six suggestions for future.

He said President Xi Jinping and Vice Premier Liu Yandong’s successful visit to UNESCO provided a good opportunity for the creation of a better future. In 2015, the Commission would increase coordination to create synergy and follow UN’s call for “Education Goes First” by involving

in the establishment of international rules and cooperating with UNESCO to hold international meetings in China. Meanwhile, it would play a leading role in the implementation of “Belt and Road” initiatives by exploring the spirit of Silk Road and carrying out cultural exchange with countries along the route. Meanwhile, the Commission would strengthen talent cultivation for international organizations and increase China’s say in such organizations.

The meeting held a farewell ceremony for Mr. Singh, UNESCO representative to China. In the speech of “Salute to Mr. Singh”, the Commission spoke highly of Mr. Singh for the efforts he made to promote the relation between China and UNESCO, especially in international cooperation in education. The Commission thanked Mr. Singh for his outstanding contribution in promoting cooperation between UNESCO and China and strengthening the relation between India and China. Mr. Singh made a farewell speech and thanked various parties for their support during his term. Mr. Singh witnessed the agreement signing and official launch of the IKCEST on June 2, 2014 and provided strong support for the application and preparation of the IKCEST.

After that, the participants of the meeting made free comments and exchanged thoughts extensively. Secretary General Du Yue made concluding remarks.

The representatives of all the category-2 centres under the auspices of UNESCO in China attended the meeting and agreed to set up a joint meeting mechanism and establish a category-2 centre alliance to create synergy in 2015. The first meeting of the alliance was initially scheduled in March of 2015.



## IKCEST platform development discussion meeting held in Beijing

On the afternoon of December 12, 2014, the IKCEST platform development discussion meeting was held in the CAE.

The meeting was chaired by Yi Jian, Deputy Director-general of the CAE General Administration Department and Director of the Project Management Office, and the attendees included leadership and experts from the Public Platform Joint Development Centre of the IKCEST (“platform team”), Higher Education Press (“HEP”), the International Research and Training Centre on Erosion and Sedimentation (“IRTCES”) and the International Research Centre on Karst (“IRCK”) under the auspices of UNESCO.

Yi Jian introduced the construction of IKCEST platform, especially the background and requirement for data resource development and cooperation. Pan Gang introduced the specific ways of cooperation in data resource development and the content of cooperation through different ways. HEP, IRTCES and IRCK each introduced their own data resources. Cao Xuejun introduced the platform construction progress and data connection requirement on behalf of the IKCEST platform development team. The resource and platform experts carried out technical discussion on data connection, which laid a basis for data integration and knowledge service through the platform.

In the second part of the meeting, Cao Xuejun introduced the IKCEST Portal, System and Service Construction Proposal. The platform team and the project office members discussed the proposal. The meeting made the following comments and suggestions: The platform construction should define one or two areas with distinctive applications, realize data integration and provide knowledge service as soon as possible. The platform development should join hands with sub-centres of the IKCEST or even the nine divisions of the CAE, and the content update for some columns could be assigned to relevant experts or CAE Members. Meanwhile, the platform development should pay attention to the international high-end forums of the CAE and other international conferences and proactively obtain and display relevant reports and PPT. Priority should be given to the consolidation of open data in engineering science and technology areas. Basic data resource and ad-hoc service should be provided through data capture, extraction, categorization and citation, while data purchase should not be the main way. In addition, the platform development should provide more support to the core business of UNESCO (e.g. training, text books, teaching materials, academic reports), and further exploration should be made in search of more exercisable platform operation model.

In the end, Director Yi Jian made closing remarks. He stressed the importance of data resource and required close cooperation between the platform team and data resource cooperation parties to ensure the success of data connection and display. He also emphasized the importance of the IKCEST platform and asked the Project Management Office and platform team to make further consideration on the platform construction plan based on the comments and suggestions raised in the meeting, thus making contributions to push forward the development of IKCEST.



## Main Data Centre and Demo Centre established

The Main Data Centre is the contact Centre and hub for the internal and external flow and exchange, and stored the own resources of Knowledge Centre. In 2014, the Main Data Centre chose to build the IDC hosting room, adding 16 servers, 4 RAIDs, 2 core switches, 2 firewalls, 4 access switches and new storage of 114TB at the same time, which basically meets the development needs of the Knowledge Centre in 2014, and paves the way for the development in 2015.

The Demo Centre is the window for both CKCEST and IKCEST to demonstrate achievements to the outside world. In 2014, the infrastructure improvement for the original Reference Room was completed. The Demo Centre was built into a multimedia environment with the integrated functions of working, holding conference and demonstrations reporting as a whole. Now it has a large-screen presentation monitor with DLP mosaic screen (3 \* 5), splicing touch screen (2 \* 2), completed conference system, including PA systems, recording and broadcasting systems, video tracking system. The Demo Centre has become the venue for demonstrating achievements to inside-Academy and outside-Academy personnel and visitors.



## Sub-Centres and resource building progressed steadily

CKCEST is an important component as well as vital support for the development of IKCEST. CKCEST continues to extend its coverage on engineering science and technology. By the end of 2013, there were 12 professional knowledge service systems built in consulting research, engineering science and education books, metal materials, Chinese herbal medicine, strategic emerging industries, manufacturing industry, energy, marine industry, medical and health, agriculture, chemical industry, academic activities. In 2014, 5 sub-centres were built on information technology, environment, innovative design, geology and academic journals, making the total number of sub-centres amounting to 17.

Regarding the resources, the Data Centre has in storage data from 17 areas of engineering sciences and technology, over 700 engineering science and technology databases (sets), journals, patents, standards, academic papers, conference papers, scientific and technological achievements, news, reports and other abstract data of 25TB; has collected the relevant information and research output data from more than 3,000 academicians and experts, more than 7 million entries of encyclopedia data, and about one million professional books; has collected more than 500,000 entries of vocabularies of engineering science and technology and numerous thesaurus, vocabularies and classified data in engineering science and technology fields.

## Management system and structure of CKCEST took shape

The Knowledge Centre is a very complex system development project, in that it is not only a construction project but also a research project. Since research, construction and delivery of service take place at the same time, project management is complex in nature, and requires innovation and creativity. In order to strengthen the project management, in 2014, PMO, on the basis of a sound management system, worked actively to make and improve the *Administrative Measures of China Knowledge Centre for Engineering Sciences and Technology Project*, *Fund Management Measures of China Knowledge Centre for Engineering Sciences and Technology Project* and *Selection Measures of China Knowledge Centre for Engineering Science and Technology Sub-Centres* and other management systems.

In terms of standard formulation, the *Standard for Data Service Interface*, *Reference Specification of Meta-Search Service*, *Standard for Unified Argumentation Access*, and *Standard for Meta-Data Access* are formulated and thoroughly implemented and applied in the Main Centre and its sub-centres, in order to aggregate all data resources and realize the exchangeability between resources and services.

## IKCEST provided young people with science knowledge

In line with the campaign organized by the Chinese Academy of Engineering (CAE), themed “Teenagers Go into the Chinese Academy of Engineering”, the International Knowledge Centre for Engineering Sciences and Technology received young visitors on October 25, November 14 and 21, December 11, 13, and 26, 2014, briefing them on the development concept of the IKCEST and educating them with related science knowledge.





**International Knowledge Centre for Engineering Sciences  
and Technology under the Auspices of UNESCO**

Address: No.2 Bingjiaokou Hutong, Xicheng District, Beijing 100088, P. R. China

Tel: +86-10-59300230

Fax: +86-10-59300230

E-mail: [information@ikcest.org](mailto:information@ikcest.org)

Website: [www.ikcest.org](http://www.ikcest.org)