DEPARTMENT OF ENVIRONMENTAL SCIENCE & ENGINEERING
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DEPARTMENT OF ENVIRONMENTAL SCIENCE & ENGINEERING
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Newsletter

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2009 IWA Specialized Membrane Technology Conference

Jointly organized by International Water Association (IWA) and Tsinghua University, the 5th IWA Specialized Membrane Technology Conference for Water and Wastewater Treatment was held at Beijing International Convention Center from September 1 to 3, 2009.

The goal of the conference was to develop further knowledge and experience of membrane technology for water and wastewater treatment. The conference provided the perfect platform for scientists and professionals working in the membrane sector of the water industry to present their work and introduce the various usages of membrane technology amongst each other.

The conference had attracted more than 500 experts, engineers, and researchers from around 40 countries and regions to exchange views on the latest development on membrane science and technology. Over the course of three days, the conference contained 3 plenary lectures delivered by Prof. Menachem Elimelech (Yale University, USA), Prof. Yoshimasa Watanabe (Hokkaido University, Japan), and Prof. Gary Amy (KAUST, Saudi Arabia), 18 keynote speeches, and 164 special reports, which focused on novel membrane materials, microfiltration membrane, ultrafiltration membrane, reverse osmosis and hybrid membrane process, fouling mechanisms and control, desalination, drinking water and wastewater treatment, and applications of membrane technology in major industries.

The IWA Membrane Technology Conference & Exhibition is held bi-annually and is considered to be the most respected and influential international event in the field of membrane technology.

CHEN Jining,
Executive Vice President of Tsinghua Universtiy

David Garman,
President of the International Water Association

HUANG Xia,
Director of Academic Affairs Committee of DESE

Tsinghua-SUEZ ENVIRONNEMENT Environmental Science and Engineering Experiment & Practice Educational Laboratory Inaugurated

On the morning of September 18, 2009, an inaugural ceremony was held to mark the opening of the TSINGHUA-SUEZ ENVIRONNEMENT Environmental Science and Engineering Experiment & Practice Educational Laboratory. Hervé Ladsous, the French Ambassador to China, and WU Xiaoqing, Vice Minister of Environmental Protection, attended the ceremony and delivered speeches. Jean-Louis Chaussade, CEO of SUEZ Environnement, and CHEN Jining, Executive Vice President of Tsinghua University, unveiled the Laboratory and introduced the event.

Under the support of SUEZ Environnement, Tsinghua and SUEZ have been working together to build the Environmental Science and Engineering Experiment & Practice Educational Laboratory, providing advanced equipment, standard management, effective operations, and excellent service. Both parties will boost comprehensive cooperation on equipment renewal, personnel training, and academic exchanges. In 2009, the Laboratory was successfully rated as “Beijing Experimental Teaching Demonstration Centre” and “National Experimental Teaching Demonstration Center”.

The Laboratory predecessor was the Sanitary Engineering Laboratory founded by Prof. TAO Baokai, founder of Environmental Engineering in China. The current educational experiments conducted in the Laboratory cover all areas of environmental research.

The 4th International Conference on Waste Management and Technology Held at DESE

The 4th International Conference on Waste Management and Technology was held at DESE from November 18 to 20, 2009. The Meeting, organized by Basel Convention Coordinating Center for Asia and the Pacific, was hosted by DESE, Tsinghua University. More than 150 representatives from academic institutes, government departments, and industrial sectors attended the meeting.

LI Xinmin, Deputy Director of Department of Pollution Control, Ministry of Environmental Protection, YU Gang, Dean of DESE, and QUAN Hao, the Director of the Solid Waste Branch of Chinese Society for Environmental Sciences, addressed the opening ceremony. 21 renowned experts and professionals around the world delivered keynote speeches on solid waste management and treatment technologies, e-waste and biomass waste management and treatment technologies. Targeting the major problems in e-waste and hazardous waste management, treatment and disposal, three forums were arranged for the conference including WEEE Management Policy Forum, Hazardous Waste Treatment Development Forum, and E-waste Treatment Development Forum.

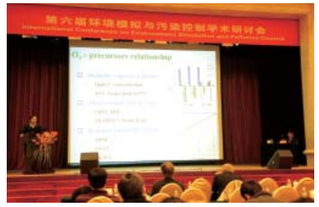
High-level Forum on “Energy-saving, Emission Reduction and Global Climate Change”

From November 11 to 13, 2009, a High-level Forum on “Energy-saving, Emission Reduction and Global Climate Change” was jointly initiated and hosted by the Administrative Centre for China's Agenda 21 and Tsinghua University Research Center for Industry of China’s Circular Economy. The forum gathered more than 600 participants including leaders from major Ministries and Commissions, representatives from municipal governments, and large state-owned enterprises to discuss issues on climate change, innovative energy-saving and emission reduction technology, and the development of circular economy and green industry.

During the forum, relevant principals of National Development and Reform Commission, Ministry of Information Industry, and Ministry of Environmental Protection stated their efforts and achievements in energy-saving and emission reduction in dealing with climate change and promoting the development of circular economy and green industry. Tsinghua Executive Vice President CHEN Jining was invited to the ceremony. Both QIAN Yi, Professor of DESE, Member of Chinese Academy of Engineering, and WANG Can, Associate Professor of DESE, delivered keynote speeches in the forum on “Several Key Issues in Developing Circular Economy in China” and “Research on Technology Transfer Mechanism under the Framework of Climate Change”.

The 6th Symposium on Environmental Simulation and Pollution Control

The 6th Symposium on Environmental Simulation and Pollution Control, jointly hosted by the State Key Joint Laboratory of Environmental Simulation and Pollution Control and China Society of Environmental Science, was held on November 13, 2009, in Beijing. The Symposium was composed of 4 branch meetings with the themes “Water Pollution Control & Microbial Ecology”, “Research of Microbial



Fuel Cell", "Air Combined Pollution in Urban and Regional Area", and "Sensor Technology & Environmental Monitoring".

Held every two years since 1999, the Symposium on Environmental Simulation and Pollution Control has developed from a domestic academic meeting level to the international level in 2009. The 2009 symposium, which was presided over by SHI Hanchang, Vice Chairman of DESE Council, Director of State Key Joint Laboratory of Environmental Simulation and Pollution Control, brought together more than 260 experts and graduate students worldwide to share their research. Executive Vice President CHEN Jining of Tsinghua University addressed the event and delivered a keynote speech on the topic of "China Water Resources Strategy", comprehensively expounding China's water challenges and solutions.

Asia-Pacific Regional Meeting on SAICM Held at DESE

From November 23 to 24, 2009, the Second Asia-Pacific Regional Meeting on the Strategic Approach to International Chemicals Management (SAICM) was held at DESE. The meeting was sponsored by United Nations Environment Programme (UNEP) and jointly organized by SAICM Secretariat and Basel Convention Coordinating Center for Asia and the Pacific hosted by DESE. The addressers of the meeting were ZHANG Lei, Deputy Director of the Department of International Cooperation, Ministry of Environmental Protection, Matthew Gubb, Coordinator of SAICM Secretariat, and YU Gang, Dean of DESE.

Nearly 80 representatives, governmental and non-governmental organizations, from 23 countries in Asia and the Pacific region and the SAICM Secretariat attended the meeting. Issues on health problems arising from chemicals management were discussed, such as the arrangement of fundamental investigation and evaluation of chemicals, hazardous substances in electrical and electronic products, nanotechnology, and manufacturing materials. Progress in international chemicals management and quick start projects were also reviewed.

The 2009 Annual Conference of Research Society for Advanced Treatment Technologies of Drinking Water

The 2009 Annual Conference of Research Society for Advanced Treatment Technologies of Drinking Water was held at DESE from October 11 to 12. Professor LIU Wenjun, the Secretary-General of the Research Society and the Director of Division of Drinking Water Safety of DESE, presided over the opening ceremony. Professor WANG Zhansheng of DESE, Chair of the Research Society, delivered a keynote speech on the current challenges, research, and new technological applications in the national drinking water industry. More than 220 participants from across the country attended the conference to exchange the latest research achievements and technological progresses of water supply.

In addition to the academic presentations, the participants were also organized to technical tours of the third Water Treatment Plant of Beijing Water Group, which uses O3-GAC to remove taste and odor, trace organic contaminants, and etc. The WPT experience provided a guide to future WTP plans for using O3/GAC to improve drinking water quality to meet the new national drinking water standards.

The annual conference began in 1988. The 2009 annual conference was jointly sponsored by the Research Society for Advanced Treatment Technologies of Drinking Water of China Civil Engineering Society subordinated to DESE, Ozone Professional Committee of Chinese Industry Economy Union and Beijing Urban Water Association, and was organized by DESE, Beijing Water Group, and Beijing General Municipal Engineering Design & Research Institute.

Potential for Wind Generated Electricity in China Published as Cover Story of Science

On September 11, 2009, the cooperative research team of environmental scientists from Harvard and Tsinghua University published a paper named *Potential for Wind Generated Electricity in China* in US *Science*, specially recommended as the Cover Story. Various Medias from both at home and abroad such as BBC, Scientific America, and China Daily had reported the news.

China, as the second only to the United States in its national power-generating capacity and now the world's largest carbon dioxide emitter, could generate all its electricity by wind power to meet the demands projected for 2030, about twice its current consumption, according to the report. The researchers analyzed the wind data from a state-of-the-art NASA global weather and climate model that incorporated measurements worldwide from surface observations, aircraft, balloons, ships, buoys, and satellites. They assumed the wind energy would be produced from a set of land-based 1.5-megawatt turbines operating over non-forested, ice-free, rural areas with a slope no greater than 20 percent.

"The world is struggling with the question of how do you make the switch from carbon-rich fuels to something carbon-free," said lead author Michael B. McElroy, Gilbert Butler Professor of Environmental Studies. "The real question for the globe is: What alternatives does China have?"

To see how much energy wind farm could generate for China, the Harvard-Tsinghua team quantified China's wind energy potential by modeling the availability of wind. They first chopped the Chinese map into parcels 3,335 square kilometers each and used five years of recent meteorological data to generate a wind profile for each parcel. For the next step, they added industry-standard 1.5-megawatt wind turbines across each parcel and estimate each parcel's energy output, then they calculated the cost of the energy that could be produced as a function of the cost of installing the turbines. The modeling reveals extensive regions, concentrated in northern and western China, where much energy can be generated at costs similar to the government-set energy rates earned by established wind farms.

"Compared with other renewable energies such as nuclear and solar, wind power has the advantages of lower cost, mature technology and good safety," said WANG Yuxuan, an environmental scientist at DESE, Tsinghua University and co-author of the paper. Wind power is growing by leaps and bounds in China in recent years, however, Chinese wind farms have experienced a host of challenges, and new wind projects only accounted for 7 percent of the entire new power-producing capacity added in China last year, compared to 42 percent in the U.S. and 43 percent in Europe.

But according to the report in *Science and Development Network*, SHI Pengfei, Vice Chairman of the Chinese Wind Energy Association, says: "Wind resources in China are rich, I agree. But using them is not as easy as the scientists imagine." He pointed that wind resources and power-hungry industrial areas are not in the same place, so new transmission infrastructure would be needed and the existing grid is not designed to cope with electricity from fluctuating sources such as wind.

This publication is another landmark achievement of extensive collaboration in environmental field between Harvard and Tsinghua University.

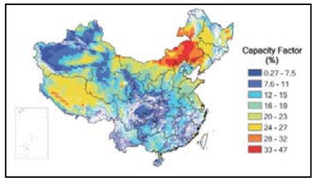


Fig. 1 Spatial distribution of capacity factors evaluated for deployment of the 1.5-MW turbines.

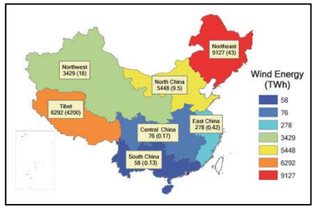


Fig. 2 Potential electricity irrespective of price that could be generated over seven electric grid areas of China mainland. The values in parentheses are the ratios of potential wind-generated electricity to current electricity production in each grid area.

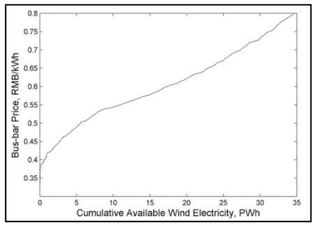


Fig. 3 Potential electricity that could be generated nationally as a function of bus-bar concession price.

Frontiers of Environmental Science & Engineering in China included in SCI

On September 2, 2009, Thomson Reuters informed that the English academic journal *Frontiers of Environmental Science & Engineering in China*, co-founded by Tsinghua and Higher Education Press, was selected in Science Citation Index Expanded Databases, becoming the first journal of the series of Frontier in China to be included in SCI.

Frontiers of Environmental Science & Engineering in China is a quarterly journal initiated and supported by the Ministry of Education, and is published overseas by the international renowned publisher Springer. The editorial board is comprised of more than 40 experts and scholars in the environmental field, including the chief editor, Professor QIAN Yi, Director of Tsinghua Academic Committee, Academician of CAE, and the Associate Editors, Professor HAO Jiming, Academician of CAE, Professor Perry L. McCarty of Stanford University, Academician of US National Academy of Engineering, and etc.

Frontiers of Environmental Science & Engineering in China is a newly-created journal to be published quarterly. It seeks to provide a forum for a broad blend of peer-reviewed academic papers in order to promote rapid communication and exchanges between environmental disciplines in China and abroad. Through a new cultural and scientific stimulus, it also seeks to reflect the significant advances that are currently being made in China in the environmental field. In addition, this publication also bears the mission of introducing Chinese academic achievements to the world community. Its coverage includes all main branches of environmental disciplines. It consists of high level authoritative critical reviews, research papers, policy analyses, and short communications. Some highlights of pioneering progresses are especially welcomed in developing and promising fields, interdisciplinary fields, and fields of much importance to China, such as environmental pollution control.

CONGRATULATORY LETTER

"I am so glad to hear that the journal has now been so recognized. This should bring in many more contributors, and enhance the value of the journal even further. Congratulations!"

— Perry L. McCarty
Stanford University, U.S.A.

"My warmest congratulations on this excellent outcome! I believe this will substantially enhance the communication between Chinese researchers in this area with the rest of the world. I am sure this would have not been possible without the massive efforts you and other editorial board and staff members have put in, so my congratulations to all involved. Well done."

— Zhiguo Yuan
The University of Queensland

"Thank you for this encouraging information, the journal from now onwards will be found in the libraries of universities worldwide."

— Gatze Lettinga
Wageningen University, The Netherlands

A New Method for Water Desalination Using Microbial Desalination Cells

A research group of DESE found a method to use microbes to desalinate salt water, including ocean water, without the high energy input required by standard desalination methods. The group, composed by DESE' Ph.D. students CAO Xiaoxin, XIAO Kang, ZHOU Yingjun, ZHANG Xiaoyuan, and their advisor HUANG Xia and LIANG Peng, unveiled in *Environmental Science and Technology* (2009,DOI 10.1021/es901950j) their low-energy desalination technology. They are partnered with Prof. Bruce Logan of environmental engineering at Penn State University.

Recently, this paper was honored as 2009 *ES&T*'s Top Technology Paper, selected from the over 1400 peer-reviewed articles published last year by *ES&T*'s Editor. It is said that the technology's potential to help provide access to clean freshwater makes it stand out.

http://pubs.acs.org/doi/full/10.1021/es100414j

Currently, the desalination methods are either reverse osmosis — in which water under high pressure is pushed through membranes that filter out the salt — or electrodialysis, which uses electricity to draw salt ions out of water through a membrane. Both methods require large amounts of energy.

"Water desalination can be accomplished without electrical energy input or high water pressure by using a source of organic matter as the fuel to desalinate water," the research team wrote in an online issue of *ES&T*.

The microbial desalination cell (MDC) technology was created by modifying a microbial fuel cell (MFC), a device that uses exoelectrogen to convert wastewater into clean water and electricity.

The MDC requires no external energy source. The main difference between this technology and a conventional MFC is that the MDC uses two membranes rather than one (or none). Salty water is placed between an anion exchange membrane and a cation exchange membrane. When bacteria on the MDC's anode produce current and protons, the salty water's anions migrate through the membrane to the anode, and the cations are drawn to the cathode. In addition to producing power, the MDC can remove 90% of the salt from water with up to 35 grams of salt per liter, which is roughly the equivalent of seawater.

Low-energy desalination would benefit many parts of the world where clean water for drinking, washing and other uses is in scarce supply. It also holds great promise as water resources from around the world are being threatened by climate change.

http://pubs.acs.org/doi/abs/10.1021/es901950j

Student Development

DESE Student's Scientific Innovation Work Won the 2nd Place of the 11th National "Challenge Cup" Competition of Science & Technology

Key Fields, Case Analysis, and Strategic Proposal of Urban Circular Economy Construction—Empirical Studies Based on China's 16 Typical Cities (By DESE's student ZHANG Chao) won the 2nd Place in the 11th National Challenge Cup University Students' Extracurricular Academic Science and Technology Work Competition. Based on DESE students' five-year social practice activities of Circular Economy Zero Distance from 2004, this work made an in depth comparative analysis on the industrial structure data of the nation's 16 typical cities and numerous empirical cases obtained through investigation and research. It presented the leading domain and countermeasures for different cities to develop circular economy construction from the view of combining the urban industrial structure model and circular economy organization scale.

The "Challenge Cup" is a nationwide competition initiated by a number of well-known universities and news media. The competition was co-hosted by the Central Committee of the China Communist Youth League, China Association for Science and Technology, Ministry of Education, All-China Students Federation, and the local government. The "Challenge Cup" was reputed as the "Olympics" of science and technology among Chinese college students, covering the fields of management, social science, energy source subject, and etc.

DESE Hosted the 3rd National Ph.D. Candidates Academic Conference on Environmental Discipline

The 3rd National Ph.D Candidates Academic Conference—New Theories and New Technologies in Environmental Science and Engineering—was held at DESE from October 22 to 24, 2009.

More than 70 environmental doctoral students and scholars from about 40 universities from all over the country participated in the conference. The discussions were focused on the following 4 topics: New Environmental-friendly Materials and Solid Waste Management, Environmental Biology, Air pollution Control and Regional Environment Study, and New Theories and New Technologies on Water Treatment.

Prof. WU Fengchang, Director of State Environmental Protection Key Laboratory for Lake Pollution Control, and Dean YU Gang of DESE attended the opening ceremony and delivered keynote speeches. The conference was co-organized by Chinese Society for Environmental Sciences, Tsinghua's Graduate School and DESE.

DESE Students Participated in National Day Celebrations

More than one hundred DESE students have gained by participating in the National Day Civilian Celebrations to mark the 60th birthday of the People's Republic of China on October 1, 2009.

At the center of the National Day fete, the civilian parade was comprised of 36 formations involving about 100,000 citizens. Tsinghua students mainly took part in three square formations, namely the Science & Technology Progress Formation, the Pioneering Work Formation, and the "One World" Formation.

Overall, 150 students of DESE joined the National Day celebrations centered in Tian'anmen Square, including a mass pageant, a choir, and an evening gala. All the participants considered it highly esteemed to participate in the National Day celebration activities, despite their tough training and many difficulties.

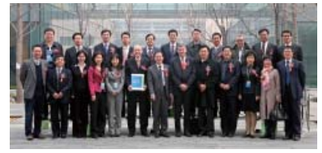
International Cooperation

Tsinghua-Veolia Environment & Urban Management Advanced Program Kicked off

On the morning of November 7, 2009, an opening ceremony was held at DESE to officially kick off the Tsinghua-Veolia Environment & Urban Management Advanced Program (EUMAP). Mr. Régis Calmels, COO Asia of Veolia Environnement & CEO Asia of Veolia Water, and Prof. YU Gang, Dean of DESE, addressed the ceremony on behalf of each sponsor.

This five-year program is jointly launched by DESE and Veolia Environnement China (VE China), aiming to provide specialized, high level training for Chinese municipal leaders and senior officers in related government departments to enhance their awareness for environmental protection and sustainable development. Each year, 15 to 20 senior officials are invited to participate in the program.

The first session of the EUMAP concluded in mid November, 2009, which took place at DESE, and then Paris. A number of renowned Chinese and French environmental experts, including Academician QIAN Yi and HAO Jiming of DESE, were invited to give lectures. Various workshops and site visits were also organized during the training. The 2009 program was attended by 15 participants from such provinces and cities as Guangdong, Sichuan, Liaoning, Jiangsu, Yunnan, Beijing, and Tianjin.



DESE Partnered with Germany Wuppertal Institute for Climate, Environment and Energy (WICEE) on Environmental Issues

On the afternoon of October 29, 2009, a Memorandum of Understanding was signed by Assistant Dean LIU Yi of DESE and visiting Vice President Manfred Fischedick of WICEE. The Memo aims to promote joint research and education on environmental issues such as climate change and resource efficiency, focusing on low carbon development concepts, systematic assessment of specific low carbon strategies and policies, post-2012 climate policy issues, circular economy, industrial ecology, and sustainable production and consumption.

The MoU will continue for an indefinite amount of time. Activities will be carried out in forms of joint research, joint workshops, exchange of guest researchers and graduates between the two parties.

The Wuppertal Institute for Climate, Environment and Energy is a German research institution that explores and develops models, strategies, and instruments to support sustainable development at the local, national, and international level.

DESE and Microsoft Research Asia Held Joint Seminar

On the afternoon of November 19, 2009, a 7-member delegation, headed by Executive Vice President ZHAO Feng of Microsoft Research Asia (MRA) and Vice President SONG Luolan of MRA, visited DESE to discuss how to progress the cooperation in the fields of environmental simulation, environmental information processing, and environmental monitoring with faculty members of DESE.

Dean YU Gang of DESE was the chairman of the seminar. Prof. YU, in his speech, expressed his hope to deepen the relationship with MRA. During the meeting, ZHAO and SONG introduced MRA's research activities on sensor technology, its public services and strategic orientation of developing relations with universities. Dean Assistant Dr. LIU Yi reviewed the existing relationship between the two parties. Prof. DU Pengfei, Prof. SHI Hanchang and other faculty members introduced DESE's research programs on environmental information system, water quality monitoring, performance assessment system of wastewater treatment plants, and simulation of urban water supply & water drainage system. Members of the MRA delegation gave a thorough introduction to their research on information and computing technologies and its application tools in

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environmental fields. Both parties agreed to establish long-term mechanisms for bilateral communication to promote substantial cooperation in scientific research and environmental education through various academic exchange activities.

Deputy Dean of Yale School of Forestry & Environmental Studies Visited DESE

From October 11 to 14, 2009, Mr. J. Alan Brewster, Deputy Dean of Yale School of Forestry & Environmental Studies (F&ES), visited DESE. During the visit, Prof. Brewster, Dean YU Gang of DESE, and representatives of China Association of Mayors discussed the working plan of the 2nd phase of Environment and Sustainable Development Leadership Program (ESDLP). Meanwhile, YU talked with Brewster on how to promote further substantial cooperation between DESE and F&ES.

From 2004 to 2006, the ESDLP program had successfully implemented three sessions as the first phase, earning a widespread attention around China. The program aims to provide leadership education on environmental and sustainable development issues for the Chinese mayors, government officials, corporate executives, and managers of non-governmental organizations responsible for urban planning and development. At present, the program is highly valued by the Organizing Department of Central Committee of C.P.C. and has thus been included in "National High-ranking Leading Cadre Training Program Plan in 2010".

DESE Welcomed the Dean of Venice International University in Italy

On the afternoon of October 14, 2009, a 7-person delegation headed by Prof. Stefano Micelli, Dean of Venice International University (VIU) in Italy visited DESE. Executive Principal WANG Hongtao of the cooperation program, Assistant Dean LIU Yi, and LIU Jianguo of DESE were the hosts of the event. During the meeting, there were in-depth exchanges on collaborative issues such as student exchange, visiting professors and joint workshops under the 2009 Sustainable Development Exchange Program framework between Tsinghua University and VIU.

Instituted in 2005, the program was supported by the Italian Ministry of Environment, land and sea, and Chinese Ministry of Science and Technology. Each year, around 9-12 PhD candidates of DESE are selected to study and research at VIU for at least 3 months. In addition, DESE sends faculty members to attend workshops and give lectures at VIU.

Dissertation Defense of the International Advanced Master Program in Environmental Management

On December 11, 2009, 10 foreign students of the International Advanced Master Program in Environmental Management from France, USA, Spain, and Poland, successfully delivered their dissertations for their Master's Degree of Environmental Engineering at DESE. The dissertation topics covered a variety of frontier and popular issues in the environmental field, including low-carbon technology and low-carbon economy, nuclear and biomass energy, and eco-design and eco-tourism. Four of the DESE participants of the program had previously passed their thesis defense organized by the École des Mines de Paris at an earlier time.

The program is a full English double master degree program initiated by Tsinghua University, the École des Mines de Paris and INSA-Lyon in 2007, aiming at providing international, compound, application-oriented environmental management talents for large multinational enterprises. In 2008, the University of Pennsylvania joined the program. The dual-degree program is composed of an 8-month academic portion organized in France and China separately, and a 6-month internship. The international and professional program follows the principles of application-orientation and industry-funding, which are quite different from the traditional master's programs in Tsinghua University.

QIAN Yi: Devotion for Decades Brings Success

QIAN Yi female

Professor of DESE

Member of Chinese Academy of Engineering

One of China's outstanding experts in Environmental Engineering and Environmental protection education

For decades, QIAN Yi has devoted herself to developing highly efficient and economic methods for wastewater treatment. She has achieved great progress in her research, including biodegradability of refractory organics and the control technology of refractory organics and its mechanism. Furthermore, she has participated in many important national technological projects and was honored many prizes. Recently, she is majoring in political study for promoting cleaner production, circular economy, and sustainable management for water resource in China.

While QIAN Yi is actively involved in environmental research and in advisory boards and committees to develop solutions to pollution control and environmental issues, she is above all, a teacher.

"The best part of my career is teaching." That is what QIAN Yi always says and does throughout her career. For about 50 years being with students, she has become immensely popular and well respected. Currently, she is still active in teaching, preserving the style of plain living and hard work with a strict and practical attitude. She gives great attention to the education of engineering. After half a century of effort, QIAN Yi has trained many talented environmental students in the spirit of "Self-discipline and Social Commitment". As the pioneer of environmental protection and sustainable development education in Chinese institutions of higher learning, she has continually been making great efforts to build Tsinghua University into a "Green University". Her significant contribution to the education of environmental engineering has earned her a high reputation both in China and abroad, as well as many prestigious awards. "Environmental Protection and Sustainable Development" by Prof. QIAN was named "National Quality Course". She was honored with the "National Distinguished Teacher" in 2007, granted "Tsinghua Outstanding Contribution Award" in September 2009, awarded the "WFEO 2009 Medal of Excellence in Engineering Education" in October, 2009.

http://www.dvt-net.de/fileadmin/downloads/WFEO/WFEO-Bericht_2009.pdf

Tsinghua Global Vision Lectures

Italian Minister of the Environment, Land and Sea, Delivered a Lecture at DESE

Ms. Stefania Prestigiacomo, Minister of the Italian Ministry for the Environment, Land and Sea, visited Tsinghua University on September 16th, 2009, and presented a speech titled "Sustainable Development is the Common Task of China and Italy" at DESE.

In her speech, Ms. Stefania Prestigiacomo delivered her views on environmental protection with DESE's faculties and students. "Environmental problems are important issues facing the whole world, and active measures should be taken to develop new sources of energy. In the era of globalization, international cooperation plays a significant role in dealing with global environmental issues," she noted. She also traced the history of Sino-Italian collaboration on environmental and resource issues, hoping the two countries would further cooperate with each other to make joint efforts to cope with climate change and other key environmental issues. Ms. Stefania Prestigiacomo answered questions from the students on low-carbon economy and sustainable development at the end of the lecture, chaired by Prof. YU Gang, Dean of DESE.

Prior to the speech, Tsinghua University Deputy President CHEN Jining briefly introduced some of Tsinghua's latest developments to Ms. Prestigiacomo, especially in low-carbon research.

Ms. Prestigiacomo also visited the Sino-Italian Environment and Energy Building, built to be ecological, energy-efficient, and powered by clean and renewable energy. It is currently the headquarters of DESE.

Topic: A System's Approach to Understanding Bioremediation
Lecturer: Lisa Alvarez-Cohen, Chair of Civil & Environmental Engineering, University of California, Berkely
Time: March 20, 2009

Topic: History and Current View of the Automotive Industry: An R&D Perspective
Lecturer: Tai L. Chan, Former President of Aerosol Technology Committee of AIHA
Time: April 3, 2009

Topic: The Growing Reach of Air Pollution: Local, Regional, Global and Back Again
Lecturer: Gregory R. Carmichael, Professor of Civil and Environmental Engineering, Associate Dean of College of Engineering, the University of Iowa
Time: April 20, 2009

Topic: Climate Change and Waste Management
Lecturer: Thomas H Christensen, Research Director, Institute of Environment & Resources, Technical University of Denmark
Time: April 28, 2009

Topic: Why Should Environmental Scientists/Engineers Care about Social Science Research?
Lecturer: Arthur Mol, Chair of the Department of Social Sciences, Wageningen University
Time: May 26, 2009

Topic: Process Optimization and Microbiology for Maximal Use of Resources in "Used Water"
Lecturer: Willy Verstraete, Professor of Gent University, Member of the Royal Academy of Sciences and Arts of Belgium.
Time: June 18, 2009

Topic: Biomass Energy: Future Challenges and Prospects
Lecturer: Bruce E. Rittmann, Director of the Center for Environmental Biotechnology in the Biodesign Institute, Arizona State University
Time: June 19, 2009

Topic: Understanding and Engineering the Complexity of Sustainable Urban Systems
Lecturer: John C. Crittenden, Director of Georgia Tech's Brook Byers Institute for Sustainable Systems of School of Civil and Environmental Engineering (CEE) at the Georgia Institute of Technology
Time: September 2, 2009

Topic: Science and Technology on Water Purification in the Upcoming 10 Years
Lecturer: Menachem Elimelech, Roberto C. Goizueta Professor of Chemical Engineering, Chair of Chemical and Environmental Engineering of Yale University; Member of the National Academy of Sciences
Time: September 4, 2009

Topic: The Economics of Atmospheric Stabilization
Lecturer: Ottmar Edenhofer , Professor of the Economics of Climate Change at the Technical University Berlin, Deputy-director and chief economist at the Potsdam Institute for Climate Impact Research
Time: September 15, 2009

Topic: Research on Macro Strategy of China's Environment
Lecturer: Guofang Shen, Member of Chinese Academy of Engineering
Time: October 13, 2009

Topic: Assimilation of Observations, Functional Models, and RS Technology to Study Climate-Ecosystem Interactions
Lecturer: Wei Gao, Senior Research Scientist with the USDA UV-B Monitoring and Research Program, NREL, CSU.
Time: December 31, 2009