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**Science, Technology and Education News from Taiwan  
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**Introduction**

**International scientific seminars Switzerland-Taiwan: Call 2008**

**The Swiss National Science Foundation (SNSF) and its Taiwanese partner organization, the National Science Council of Taiwan (NSC), have launched the call 2008 for Swiss-Taiwanese scientific seminars.**

This call is targeted at established Swiss and Taiwanese scientists from all scientific disciplines who aim at creating a new bilateral co-operation. These seminars will take place in the period 01 July 2009 – 30 June 2010 and give the opportunity to meet and to discuss the possibilities of a future co-operation in research.

The deadline for submissions is the 16 January 2009.

For details refer to: [http://www.snf.ch/E/NewsPool/Pages/news\\_081104\\_SeminareTaiwan.aspx](http://www.snf.ch/E/NewsPool/Pages/news_081104_SeminareTaiwan.aspx)

**Contents**

1.	U.K., Taiwanese experts collaborate on wind power technology	2
2.	New chip for super-high speed wireless communication developed	2
3.	New artificial disc offers relief to patients with neck problems	2
4.	Taiwanese biologists find gene that moderates cell death in algae	2
5.	National Science Council to cooperate with Leibniz Association	2
6.	Taiwan's first small-scale magnetized plasma device near completion	3
7.	ITRI promotes local R&D credentials	3
8.	Scientist touts potential of umbilical cord stem cells	3
9.	Four Taiwanese scientists honored by TWAS	3
10.	Electromagnetic waves benign: experts	4
11.	Taiwan scientists invent the latest bendable thin-film transistor	4
12.	EU-FP, Taiwan office (NCP-Taiwan)	4
13.	Team increases hydrogen production from biomass	5
14.	Cogeneration LED streetlamps developed at Chung Cheng University	5
15.	Taiwan wins silver at IENA with energy saving chafing dish	5
16.	Bicycle converts instantly to a suitcase invented by teen	5
17.	NCTU develops millimeter-wave anti-collision radar	5
18.	R&D center releases new surface molding, forming technology	6
19.	Taiwan inaugurates state-of-art bi-agent pilot plant	6
20.	Taiwan, Canada forge MOU on agro-science cooperation	6
21.	UK R&D experts discuss future technology trends	6
22.	Scientist finds link that could help SJS research	6
23.	Three scientists given 2008 Taiwan-France Science & Technology Awards	7
24.	University, manufacturer complete test of new solar power system	7
25.	Bacterium good for making 'biocatalytic' biofuel cell discovered	7
26.	Gov't to launch incentives to enhance national R&D capacity	7
27.	Science academy heads from around the globe to meet in Taipei	8



### 1. U.K., Taiwanese experts collaborate on wind power technology

(Central News Agency, 03. 11. 2008)

UK and Taiwan companies/universities held an international seminar on offshore power and wind turbines on 3 Nov. Taiwan has 185 wind turbines installed, with an accumulative capacity of 347 megawatts and is planning to install 200 more in the next five years.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=139645&CtNode=6>

### 2. New chip for super-high speed wireless communication developed

(Central News Agency, 04. 11. 2008)

A team at National Taiwan University (NTU) has developed a new system on chip SoC design for ultra-high speed wireless communication that can transmit digital data at a rate 100 times faster than wireless fidelity (WiFi) devices.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=139705&CtNode=9>

Related article:

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/05/2003427789>

### 3. New artificial disc offers relief to patients with neck problems

(Liberty Times, 05. 11. 2008)

Chimei Hospital in Tainan County has performed the first artificial cervical disc replacement in Taiwan, using a new artificial disc. This improvement on the traditional method of neck surgery requires only a half-hour to perform.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=139869&CtNode=9>

### 4. Taiwanese biologists find gene that moderates cell death in algae

(Central News Agency, 06. 11. 2008)

Marine biologists at National Taiwan Ocean University (NTOU) have spotted a gene named ScDSP that can moderate the cell death process among algae. Researchers said the findings can help predict declines in algae populations, which can provide an early warning to the aquaculture industry. Meanwhile, by manipulating the gene's expressions, scientists might be able to trigger the controlled death of the carbon-absorbing organisms to reduce greenhouse gases in a given area.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811060029&strType=JD>

Related articles:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=140023&CtNode=9>

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/09/2003428101>

### 5. National Science Council to cooperate with Leibniz Association

(Central News Agency, 07. 11. 2008)

Taiwan's Cabinet-level National Science Council (NSC) and Germany's Leibniz Gemeinschaft have reached an agreement to strengthen the scientific cooperation between the two bodies in 10 areas, including novel materials, nanoscience, pharmacology, energy, micro-electronics, and regional political economy.



Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811070024&strType=JD>

## 6. Taiwan's first small-scale magnetized plasma device near completion

(Central News Agency, 08. 11. 2008)

National Cheng Kung University (NCKU) in Tainan City will complete the installation Taiwan's first small-scale magnetized plasma device in 2009, marking a small step forward in the nation's nuclear fusion power study. NCKU's Plasma and Space Science Center, led by Cheng Chio-zong -- former chief scientist at Taiwan's National Space Organization, currently retains 15 full-time research fellows in space instrument, plasma science, computer resource, and microwave laboratories.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811060025&strType=JD>

## 7. ITRI promotes local R&D credentials

(China Post, 07. 11. 2008)

Taiwan has the potential to develop into a Research & Development (R&D) hub in Asia, and the government is seeking to expand cooperation with leading industrial countries to achieve this goal. According to T.C. Tu, General Director of the Industrial Economics & Knowledge Center, Taiwan's leading industrial trends research body under the umbrella of the government-backed Industrial Technology Research Institute (ITRI), the government wants to broaden cooperation from its existing partners in the United States and Japan to China and Europe. Tu said he hopes for more information and technology exchanges with European countries that share similar geographical and economic conditions.

After nurturing and launching some of Taiwan's greatest commercial success stories including semiconductor giants TSMC and UMC, ITRI is now shifting focus to energy and material science. Since Europe is the global leader in renewable energy, there is much Taiwan could learn from Europe. Multinational firms could also benefit by setting up R&D centers for new technologies in Taiwan and use Taiwan as a testing ground for new concepts and products.

Full article:

<http://www.chinapost.com.tw/taiwan/t-business/2008/11/13/182995/ITRI-promotes.htm>

## 8. Scientist touts potential of umbilical cord stem cells

(Taipei Times, 09. 11. 2008)

Stem cells found in umbilical cord blood are useful not only for transplants, but also for drug-testing by the pharmaceutical industry, as it has been noted during the 2008 Taiwan International Somatic Stem Cell Symposium, attended by about 200 doctors and experts from Taiwan, the US and the UK.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/09/2003428096>

## 9. Four Taiwanese scientists honored by TWAS

(Central News Agency, 13. 11. 2008)

Two Taiwanese researchers, have been honored with being elected members of the prestigious Academy of Sciences for the Developing World (TWAS), while two other local scientists also won top awards from this organization.

Yang Pan-chyr -- a professor at National Taiwan University's college of medicine, and an Academia Sinica academician -- was selected to be a TWAS member due to his contributions to the understanding lung cancer. Yang's group has identified several lung cancer-related genes and biomarkers that may revolutionize lung cancer treatment.



Lee Der-tsai, a distinguished research fellow of the Academia Sinica's Institute of Information Science, won the honor of being a TWAS member due to his focus on the areas of design and analysis of algorithms, computational geometry, VLSI layout and systems, bioinformatics, digital libraries, software security, web-based computing, and algorithm visualization.

Two other Taiwanese scientists, Shaw Jei-fu and Lin Chun-hung, were honored with the 2008 TWAS Prize in Agricultural Sciences and the title of 2008 TWAS Young Affiliate, respectively, Shaw was awarded for his achievements in three areas -- functional genes and plant biotechnology, biocatalysis technologies for produce-based industrial products and functional food, and lipases-related protein engineering and biotechnology.

Lin, a research fellow at Academia Sinica's Institute of Biological Chemistry, was elected TWAS young affiliate for his efforts in the areas of chemical biology and drug development.

Full article:

<http://www.cna.com.tw/80/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811130021&strType=JD>

Related article:

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/14/2003428572>

## 10. Electromagnetic waves benign: experts

(Taipei Times, 14. 11. 2008)

Most electromagnetic waves people encounter in their daily lives are benign to humans, a group of international experts said at a conference in Taipei to discuss the impacts of non-ionizing radiation to human health.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/14/2003428571>

## 11. Taiwan scientists invent the latest bendable thin-film transistor

(Taiwan News, 14. 11. 2008)

A research team of a dozen scientists from the Industrial Technology Research Institute (ITRI) created the 4.7 inch active soft thin-film transistor by printing technology, using plastic substrate and low temperature of 150 degrees. A soft e-paper was made with combination of electrophoretic medium of the SiPix Company, rendering the soft transistor able to be folded or bent for multiple times.

Full articles:

[http://www.etaiwannews.com/etn/news\\_content.php?id=788618&lang=eng\\_news&cate\\_img=logo\\_taiwan&cate\\_rss=TAIWAN\\_eng](http://www.etaiwannews.com/etn/news_content.php?id=788618&lang=eng_news&cate_img=logo_taiwan&cate_rss=TAIWAN_eng)

## 12. EU-FP, Taiwan office (NCP-Taiwan)

(EU Newsletter, October 2008)

On 1 Sep, the "national contact point of EU-FP, Taiwan office (NCP-Taiwan)" officially opened at the National Taiwan University of Science and Technology (NTUST). It is funded by the National Science Council (NSC). The establishment of NCP-Taiwan will initiate cooperation in technology research and development between Taiwan and the EU. By actively participating in the EU-FP7 program (total fund of Euros 53 bio. till 2013), Taiwan can benefit from this program. Under the 6<sup>th</sup> Framework Programme, Taiwan research institutes participated in 11 projects.

The website <http://www.ncp-Taiwan.ntust.edu.tw> serves as a contact window providing latest information of EU-FP7. Contact: CEO of EU-FP National Contact Point-Taiwan Office, Dr. Y.C. Heng

Further, the Ministry of Economic Affairs appointed the Industrial Technology Research Institute (ITRI) to promote the "Bridging Taiwan's Industry and European Innovation via Joint Research under EU-FP7" project.

Related article:

EU Newsletter, October 2008 (European Economic and Trade Office, Taiwan)



### **13. Team increases hydrogen production from biomass**

(Taipei Times, 15. 11. 2008)

Feng Chia University has succeeded in boosting the production of hydrogen from biomass to 15 liters per hour, a world-class standard.

Full articles:

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/15/2003428659>

### **14. Cogeneration LED streetlamps developed at Chung Cheng University**

(Central News Agency, 19. 11. 2008)

A researcher at Chiayi's National Chung Cheng University has developed a new type of LED streetlamp capable of converting waste heat to electricity to reduce dependency on outside power supplies.

Full articles:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811190021&strType=EM>

### **15. Taiwan wins silver at iENA with energy saving chafing dish**

(Central News Agency, 19. 11. 2008)

An energy-saving chafing dish that helps cut energy consumption by 80-90 % won Taiwan a silver medal at the iENA (Nurnberg Int'l Invention Exhibition) earlier in November. The Taiwan delegation won 12 gold, 24 silver, and 16 bronze medals.

Full articles:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811190034&strType=JD>

### **16. Bicycle converts instantly to a suitcase invented by teen**

(Liberty Times, 19. 11. 2008)

Tsai Fu-hsiong, a sophomore in the Department of Mechanical Engineering at Chunghua University, loves to cycle. At just 19 years of age, Tsai has invented a new type of folding bicycle that can be folded into a package the size of a small suitcase in just seconds. The invention has already been granted patents in the US, Japan and Taiwan, and there are currently plans afoot to put the design into mass production.

Full articles:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=141397&CtNode=9>

### **17. NCTU develops millimeter-wave anti-collision radar**

(Liberty Times, 20. 11. 2008)

National Chiao Tung University has developed a low-cost millimeter-wave automobile anti-collision radar indicator system. The new device can effectively sense distance in front of the vehicle as well as things in the blind spots on either side of the car, providing the driver with more reaction time and reducing the incidence of automobile accidents.

Millimeter-wave radar systems include three main technical points: millimeter-wave radar, antenna technology and digital signal processing technology.

Full articles:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=141465&CtNode=9>



### **18. R&D center releases new surface molding, forming technology**

(Central News Agency, 20. 11. 2008)

A government-sponsored R&D center has developed a new technique using electromagnetic pulses to imprint patterns on metal surfaces to provide higher production rates at lower costs. Developed jointly by the Kaohsiung-based Metal Industries Research & Development Center (MIRDC) and Ohio University in the USA, the "EMP molding and forming technique" substitutes mechanical pressure with electromagnetic pulse to push the molding module to leave impressions on the surface of metal components.

Researchers said that a single time of impact can not only create subtle color patterns on the surface, but also simultaneously help weld two or more metal films together.

Full articles:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811200032&strType=JD>

### **19. Taiwan inaugurates state-of-art bi-agent pilot plant**

(Central News Agency, 22. 11. 2008)

A bio-agent pilot plant under the National Health Research Institutes was inaugurated in Jhunan, Miaoli County. It will help the country to produce more vaccines at home and further sharpen the competitiveness of the country's biotechnology industry. The priority of the plant will be manufacturing H5N1 influenza vaccines for clinical test and mass-producing vaccines against type 71 enterovirus and the Japanese encephalitis virus.

Full articles:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strType=EM>

### **20. Taiwan, Canada forge MOU on agro-science cooperation**

(Central News Agency, 26. 11. 2008)

Taiwan and Canada signed a memorandum of understanding on cooperation in agricultural sciences. The MOU will increase scientific cooperation among agricultural scientists and institutions of agricultural research, development and higher learning. Taiwan will first send 10 doctorate candidates to Canada to engage in research or receive training in the field. Taiwan's Cabinet-level National Science Council (NSC) and Canada's ministerial-level Agriculture and Agri-Food Canada (AAFC) will be the respective executive agencies representing the two countries.

Full articles:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=142049&CtNode=9>

### **21. UK R&D experts discuss future technology trends**

(Taiwan News, 26. 11. 2008)

A group of experts from research and development sectors in the United Kingdom came to Taiwan joining a seminar to share their views and experiences on future technology trends, particularly on assisted living technology.

Full articles:

[http://www.taiwannews.com.tw/etn/news\\_content.php?id=797099&lang=eng\\_news&cate\\_img=49.jpg&cate\\_rss=news\\_Society\\_TAIWAN](http://www.taiwannews.com.tw/etn/news_content.php?id=797099&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN)

### **22. Scientist finds link that could help SJS research**

(Taipei Times, 26. 11. 2008)

A dermatologist at Chang Gung Memorial Hospital in Taipei discovered that the fatal disease Stevens-Johnson Syndrome (SJS) is strongly associated with granulysin, which is a substance that exists naturally in the body, can attack foreign substances or organisms. A treatment research is under way. The discovery was published in the biomedical research journal Nature Medicine.

Full article:





<http://www.taipeitimes.com/News/taiwan/archives/2008/11/26/2003429560>

### **23. Three scientists given 2008 Taiwan-France Science & Technology Awards**

(Central News Agency, 26. 11. 2008)

The 2008 Taiwan-France Science & Technology Awards have been awarded to one Taiwanese and two French scientists for their achievements in chemistry and related areas. The awards -- established in 1999 based on an agreement between the NSC and the Academie des Sciences, Institute de France (Academy of Sciences, French Academy Institute) -- are issued to one or more distinguished scientists in Taiwan or France to honor their achievements in specific scientific areas each year.

The review board designated chemistry, mathematics, physics, astronomy, geoscience, and engineering as the main categories for 2008.

According to the citation, the three scientists not only contributed greatly to advancements in the study of low-dimensional nanostructures, they also have helped promote bilateral scientific cooperation between Taiwan and France since 2004.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811260012&strType=JD>

### **24. University, manufacturer complete test of new solar power system**

(Central News Agency, 27. 11. 2008)

National Cheng Kung University (NCKU) has installed a high-concentration photovoltaic system with five-kilowatt output and an advanced sun-tracking unit, which is said to be the first of its kind in Taiwan.

Full article:

<http://www.cna.com.tw:80/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811270015&strType=JD>

Related article:

<http://www.taipeitimes.com/News/taiwan/archives/2008/11/28/2003429721>

### **25. Bacterium good for making 'biocatalytic' biofuel cell discovered**

(Central News Agency, 27. 11. 2008)

A new iron-reducing bacterium has been found to be capable of treating waste water while generating weak electricity, a phenomenon that one day can be deployed in "biocatalytic" biofuel cells to provide renewable energy, microbiologists at the National Taiwan Ocean University (NTOU). The biocatalytic biofuel cell is similar to the enzymatic biofuel cell because both can generate electricity by converting or reducing chemical. The new bacterium species, dubbed *Shewanella decolorationis* NTOU1, can disintegrate various organic pollutants and organic acids, including azo compounds and triphenyl methanes dyes, while converting the chemicals into electricity.

Full article:

<http://www.cna.com.tw:80/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200811270022&strType=JD>

### **26. Gov't to launch incentives to enhance national R&D capacity**

(Central News Agency, 29. 11. 2008)

The government will launch a series of incentives aimed at encouraging prominent scientists and post-doctoral researchers to engage more in academic work, which will eventually enhance Taiwan's national research and development capacity: the Academic Summit Program for senior scientists and the Jade Sculpting Program for post-doctoral researchers.

The Academic Summit Program is to provide long-term, funding to those scientists who already have distinguished achievements in their research areas, with the hope that the program will "spare them from daily administrative jobs so they can focus on research.

The "jade-sculpting" project is aimed at encouraging the "return" of post-doctoral researchers to academic institutions, which have had a shortage of post-doctoral researchers for years.



According to the NSC, under the project, the total number of post-doctoral researchers hired by academic institutions will be increased from 1,300 to 1,900 per year.

Meanwhile, the number of job openings for full-time research assistants will be increased to 5,100 per year and for part-time research assistants (for post-graduate and doctoral students) to 6,500 per year, the NSC said.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=142401&CtNode=9>

## **27 Science academy heads from around the globe to meet in Taipei**

(Central News Agency, 01. 12. 2008)

A total of 15 academic heads from 13 countries will meet for a forum "Roles of the Academies in Creating a Better World" from 6-8 Dec at Taiwan's Academia Sinica in celebration of its 80th anniversary. The forum's topics include how modern science academies will drive and contribute to knowledge-based development and solve environmental problems. Steven Chu, a co-winner of the 1997 Nobel Prize in Physics, and Ralph Cicerone, president of U.S. National Academy of Sciences, will each give a keynote speech.

Full article:

<http://www.cna.com.tw/80/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200812010037&strType=JD>