

Sustainable Future with Cleantech

Cleantech与您共创可持续发展的未来

In May, the swissnex China Lecture was dedicated to the topic Cleantech. The President of Cleantech Switzerland, Dr Uwe Krüger, was talking about Cleantech in general and the situation in Switzerland. The lecture offered a lively exchange between the expert from Switzerland and the audience from academia and industry.

Goodbye to Traditional Wastewater Plants

By supporting the project HydroNET on waste water management, swissnex China is further enlarging its activities on Cleantech. The project is a collaboration of the University of Applied Sciences of Southern Switzerland (SUPSI) and Chinese partners from the City of Dongguan. The HydroNET project has been presented in several occasions, last time at the Future Cities Conference at the World Expo in 2010.

The need to design new Wastewater Treatment Plants (WWTPs), is not just limited to developing countries or to fast growing markets like China, but it also concerns countries such as Switzerland, where WWTPs built more than thirty years ago, have reached operational limits and are in deep need of revamping, most of the existing plants are based on conventional process (i.e. sedimentation) that could be easily replaced with more efficient technologies in terms of space requirements and treatment duration.

The Hydroflot prototype has been designed as a collaborative effort, carried out by iCIMSI (Institut CIM for Sustainable Innovation, SUPSI),



swissnex China lecture in May
2011年5月举办的swissnex China 讲座

Eawag (ETH Domain) as one of the world's leading aquatic research institutes and KWI (Krofta Waters International). In partnership with Mangrove Environment Ltd. and Zhangcun Municipal Water Plant, the project researchers are now testing the HydroNET concept to the treatment of Dongguan municipal wastewaters situated in the Guangdong province.

swissnex China Cleantech Exchange Grant

In September 2010 during the World Expo in Shanghai, "Better City, Better Life", swissnex China organized the Future Cities Conference Week, at the Swiss Pavilion in cooperation with ETH Zurich and the Chinese Academy of Sciences. "Water Management", "Sustainable Construction" and "Mobility and Air Quality" were the essential topics and they will remain of upmost importance in planning future cities and sustainable environments, also after the closing of the world largest Expo ever.



With the growing demand of energy and the importance of respecting the nature, clean technologies will play an essential role in handling our future energy needs. swissnex China is focusing on this topic in various ways.

Dr Uwe Krüger (President of Cleantech Switzerland)
Uwe Krüger 博士 (瑞士 Cleantech 集团总裁)

swissnex China is dedicated not only to initiate, but also to foster and facilitate further cooperation between the two countries to find solutions for development and use of Cleantech to improve water management, sustainable construction, mobility and air quality. This is why swissnex China is offering the swissnex China Cleantech Exchange Grant (sCEG) to the speakers and participants of the Future Cities Conference Week, to enhance the cooperation in the area of cleantech between partners in Switzerland and in China.

For more information visit: www.swissnexchina.org

随着能源需求量的攀升，人类愈发意识到尊重自然的重要性，清洁科技在未来的能源问题上将起到关键作用。瑞士联邦政府科技文化中心正在通过以下方式关注这一主题：

swissnex China 系列讲座

2011年5月，swissnex China 系列讲座的主题是清洁科技。瑞士 Cleantech 集团总裁 Uwe Krüger 博士向与会者介绍了清洁科技的发展概况和瑞士清洁能源领域的现状。讲座中，这位来自瑞士的专家和学术界、业界的观众们激情互动，现场氛围活跃。

告别传统的废水处理厂

通过赞助 HydroNET 废水管理项目，瑞士联邦政府科技文化中心进一步扩大了在清洁科技领域的活动。HydroNET 废水管理项目是瑞士南方应用科技大学 (SUPSI) 和其合作伙伴东莞市的联合项目。该项目的理念曾多次在公众面前得到呈现，也是 2010 年世博会未来城市主题研讨会上的演讲主题之一。

设计新型废水处理工厂的需求，不仅仅局限于像中国这样的发展中国家或市场经济快速发展的地区，也和瑞士这样的发达国家有关。在发达国家，废水处理工厂已经建立了近 30 年，达到了运营极限，

急需重新改造。这些废水处理厂大部分都采用了传统工艺（即过滤工艺）。这项工艺无论是在空间要求还是在更新周期上，都可轻易地被更高效的技术取代。

Hydroflot 原型由瑞士南方应用科技大学 iCIMSI 项目组、世界领先的水资源研究机构之一 EAWAG 和 KWI 公司 (Krofta Waters International) 联合设计。

目前，项目研究人员正与广东省东莞市红树林环保科技有限公司、市樟村水厂合作，用 HydroNET 项目理念处理东莞市污水排放问题并检测其效果。

瑞士联邦政府科技文化中心清洁科技专项交流基金

2010年9月上海世博会期间，瑞士联邦政府科技文化中心、苏黎世联邦理工学院和中国科学院在瑞士馆举办了“未来城市”研讨会。此次研讨会讨论了“水资源管理”、“可持续建设”、“交通与空气质量”等重要课题。在这次世界上有史以来规模最大的世博会结束后，这些议题仍将是进行未来城市和可持续发展环境规划最重要的环节。

瑞士联邦政府科技文化中心致力于开展、促进和推动两国之间的进一步合作。从而寻找更好地发展、使用清洁技术的方案，促进水资源管理，可持续建设，交通与空气质量的改善。

这也是瑞士联邦政府科技文化中心为“未来城市”研讨会的讲者和与会者提供清洁科技专项交流基金的目的——增进中瑞两国的合作伙伴在清洁科技领域的交流与合作。

EPFL-Led Research in Line for EU Award

瑞士联邦理工学院洛桑分校主导的科研项目荣获欧盟专项基金提名

Two projects headed by the Federal Institute of Technology in Lausanne (EPFL) have been shortlisted in a competition for European Union research funds.

由瑞士联邦理工学院洛桑分校 (EPFL) 主导的两个科研项目获得了角逐欧盟研究基金的提名。

The European Flagship initiatives are research grants with no equivalent anywhere in the world, providing nearly one billion euros in funding over ten years. On May 4th 2011 in Budapest, the European Commission announced its preliminary selection of six projects in Europe, including the following two from EPFL.

Guardian Angels - tomorrow's everyday technologies

The Guardian Angels project (<http://www.ga-project.eu>), led by the teams of Adrian Ionescu (EPFL) and Christopher Hierold (Swiss Federal Institute of Technology Zurich) seeks to design and produce completely new electronic components that are energy-autonomous, integrated into our daily lives and low-cost. This vision of the future involves miniaturization, using unexpected resources such as movements of the human body, light and variations in temperature, as well as a seamless integration with everyday objects. The new sensors will easily be able to provide comfort and security for all.

Human Brain Project - simulating the human brain

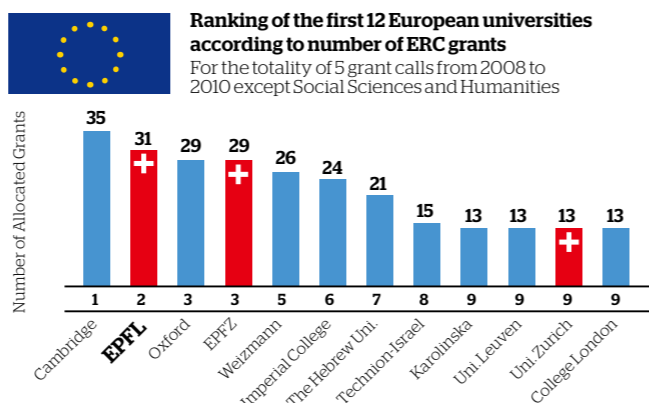
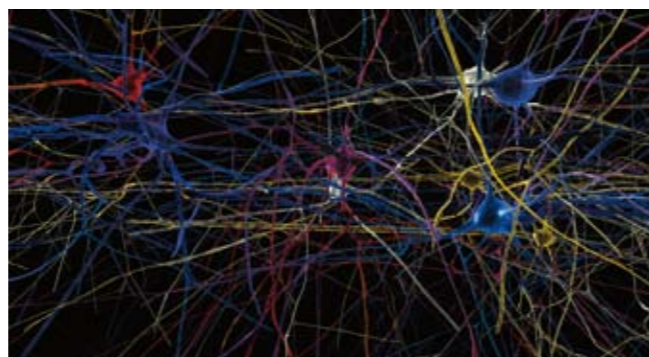
An outgrowth of the Blue Brain Project (<http://bluebrain.epfl.ch>), the Human Brain Project aims to create a simulation of the human brain - a revolutionary research tool in neuroscience. To achieve this, Henry Markram's group is going to develop completely new technologies. In medicine, for example, a research and testing platform will be used to develop new medicines and appropriate treatments. In informatics and robotics, the researchers will draw their inspiration from the human being's astounding brain capacities. The scientists are preparing a true technological revolution that will improve our quality of life and will ultimately aim to generate a computer simulation of a complete human brain.

Joint Call for Proposal

The present call for this joint pilot grant is released following the recent visit to China of Federal Councilor Didier Burkhalter with the

EPFL and ETHZ Presidents in order to reinforce common programs in sectors such as health, environment and energy to cite those directly correlated to the strategic objectives of Nano-Tera (<http://www.nano-tera.ch/>).

The Swiss Federal Institute of Technology, Lausanne (EPFL) is one of two National Institutes of Technology (Ecoles Polytechniques Fédérales) in Switzerland. EPFL, in its idyllic location on the shores of Lake Geneva, brings together a campus of more than 10'000 people strongly focused on basic science and engineering.



Ranking of the first 12 European universities according to the number of ERC grants - a merit-based scientific fund. 欧盟科学研究委员会的基金获批项目最多的前 12 所大学中, 洛桑理工排名第二。

Leading Research Institute in Europe

EPFL has generated top publications in international journals, with 110 publications in Nature and Science from 1990 to 2009. The most recent study by Thomson Reuters ranks EPFL as No. 1 among all European universities in engineering, according to research impact (citations per paper) for the past 10 years. The European Committee has recently launched ERC grants to finance scientific projects of excellence for EU members and associated countries. Seven billion Euros will be invested between now and 2013. Each year, several thousand projects are candidates for subvention. Between 10% and 15% are selected only based on the scientific merits, and are financed over five years. Since 2007, when the first grants were awarded, a comparative study of the allocation of 1205 grants has shown that 31 scientists from EPFL have benefited from an ERC bourse. This is a remarkable result, which ranks EPFL in 2nd place behind Cambridge, and in front of Oxford and ETH Zurich.

这一欧洲旗舰性的项目是举世无双的科技扶持计划。获选项目将得到长达 10 年共 10 亿欧元的研究经费。2011 年 5 月 4 日欧盟在布达佩斯宣布了通过初选的 6 个项目, 其中两项来自于洛桑理工大学。

守护天使 - 未来的日常技术

守护天使项目 (<http://www.ga-project.eu>) 是由洛桑理工的 Adrian Ionescu 教授和苏黎世理工的 Christopher Hierold 教授共同领导的。其目的是要设计制造出全新的电子器件, 能实现能源自供, 并且造价低廉, 便于集成于日用设备中。这将需要器件的极小化, 以及创新地使用非常规能源, 如人体的运动, 光线和温度的变化。同时还要完美地集成于日常用品中。这些新型的传感器件将更方便地为人类生活提供舒适和安全的保证。

人脑研究 - 模拟大脑

由蓝脑项目 (<http://bluebrain.epfl.ch>) 成功而衍生出的人脑研究计划, 旨在创建一个大脑的全面模型——这将为神经科学研究提供开创

性的途径。洛桑理工大学的 Henry Markram 教授所领导的团队将研发全新的多项技术。比如, 在医药方面, 一个研发和检验平台将用于开发新药物和治疗方法; 在信息学和机器人方面, 科研人员将通过对人脑巨大潜能的进一步了解而产生新的创意。科学家们正在迎来一场将改变我们生活品质的技术革命, 最终将实现用计算机全面模拟人类大脑。

Nano-Tera 与中瑞科技项目 (SSSTC) 合作

最近, 瑞士联邦瑞士联邦委员、内政部部长 Didier Burkhalter 携两所联邦理工大学 EPFL 和 ETHZ 的校长访问中国, 旨在加强科技、环境、健康、能源的合作。这与 EPFL 领导的 Nano-Tera 项目 (<http://www.nano-tera.ch/>) 的科研目标高度契合, 因此, Nano-Tera 项目最近宣布与中瑞科技合作计划 (SSSTC) 联合启动一个科研项目起步基金。

瑞士洛桑联邦理工大学 (EPFL) 是瑞士两所国立理工大学之一。坐落于日内瓦湖畔的 EPFL 是一所以基础科学与工科为主的大学, 有在校师生约 10,000 人。

欧洲顶尖的研究型大学

洛桑理工发表的高质量论文经常见于国际知名学术杂志。1990 至 2009 年间, EPFL 在《自然》(Nature) 与《科学》(Science) 杂志上先后共发表了 110 篇文章。汤森路透 (Thomson Reuters) 的最新调查更肯定了 EPFL 的科研影响力, 根据过去十年的论文平均引用数量, 洛桑理工高居欧洲工程类大学榜首。

欧盟最新启动了一项科研基金, 将于 2013 年之内投入 70 亿欧元以支持优秀的科研项目。每一年都有数以千计的项目参与竞争, 但只有 10% 到 15% 的成功机率。选择完全基于申报项目的科研水平和潜力, 一旦获选, 可得到长达五年的经费支持。

自 2007 年该项基金首次启动后, 一份针对到目前为止获选的 1205 个项目的对比调查再次印证了 EPFL 在欧洲的领先地位。洛桑理工共有 31 位科研人员获得该项基金支持, 这个数目仅次于剑桥大学, 而高于牛津大学和苏黎世理工等欧洲名校。



International Affairs
CH-1015 Lausanne

Zhen Xiao 肖振
Marius Burgat

Tel: +41 21 693 55 64
Fax: +41 21 693 58 65
Web: <http://www.epfl.ch>
E-mail: zhen.xiao@epfl.ch
m.burgat@epfl.ch

In China
Nicolas Musy
Tel: +86 21 6266 0844 - 805
E-mail: nicolas.musy@epfl.ch