gustav / March 26, 2009 06:29PM
[高階光學] 台灣光子源將於2013年運轉
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國家同步輻射中心推動台灣光子源（Taiwan Photon Source；TPS）建造計畫將以7年時程，耗資68.8億元經費，預計於2013年完成試運轉；這座中能量同步加速器為3GeV第三代同步加速器光源，以生產高亮度且能量範圍高達20keV的硬X光為主，就規格與設計而言，將是世界上性能最佳的同步加速器光源之一。

加速器技術產業為先進國家國力的重要指標，全世界有能力建造大型先進加速器的國家大致上有：美國、日本、德國、法國、英國、北歐及俄國。台灣光子源與加速器的發展，將帶動台灣多項產業技術進一步發展，主要有真空、磁鐵、精密電源系統、高頻系統、精密機械、儀器控制及資訊處理技術、液氦低溫系統、醫療用及工業用加速器等。相關應用領域包含一般工業用途、研究用途、放射線治療、半導體及相關工業、放射線同位素生產等。

國家同步輻射中心協同相關單位歷經多年的研發下，國內已具有建造部分加速器零組件的技術能力。此計畫預計規模與技術需求遠遠超出1990年代的TLS，相信該計畫將促進國內加速器相關產業能力，更多先進技術與新契機昭然可待。

深入資訊：
國家同步輻射中心
中時電子報 2009/03/26

[Advanced Optics] Taiwan Photon Source Starts to Operate in 2013

National Synchrotron Radiation Research Center, NSRRC, begins to execute the seven-year establishment project of Taiwan Photon Source, TPS, with the budget of NT 6.88 billion. The acceptance test of TPS is expected to occur in 2013. The medium energy accelerator in plan is the third generation of 3GeV Synchrotron Light Source, which can produce hard X-ray in high state with the energy scope reaching 20keV. This will be one of the best-performed synchrotrons in the world.

Accelerator industry is always the indication for advanced industrial technologies. The countries that possess the capacity to produce large accelerators include the United States, Japan, Germany, France, UK, North Europe and Russia. The development of TPS will encourage many relevant industries in Taiwan to step further, such as vacuum, magnet, precision power system, high frequency system, precision machinery, instrument control and information processing, liquid helium cryogenic system, medical and industrial accelerators etc. The Relevant techniques developed can be applied for general industrial purposes and research purposes, or to radiation medical treatment, semiconductor and its relevant industries and the production of radioisotopes etc.

Due to the research and development of NSRRC with the affiliated units, Taiwan has held the techniques for the production of some accelerator components. The present project sets a scope far wider, as well as a standard of technological requirement far higher, than TLS in 1990. It is expectable that with the execution of the project, the capacities of the relevant industries in Taiwan will be furthered, and more advanced techniques and new market opportunities will occur.

Further Information:
National Synchrotron Radiation Research Center, NSRRC,

China Times E-paper 2009/03/26 (in Chinese)

Edited 3 time(s). Last edit at 04/03/2009 04:23PM by gustav.