



(28 October 2009, Hong Kong) PET is a nuclear medicine imaging technique, which produces a 3D image or picture of functional process in the body. The system detects a pair of gamma rays emitted by a positron emitting radionuclide, for example,  $^{18}\text{F}$  and  $^{11}\text{C}$ , introduced into the body tissue or organs through a biologically active molecule such as glucose, amino acid or free fatty acid. Images of the tracer concentration (higher concentration, higher activity) within the body tissue are then reconstructed by computer analysis shown in a scanner.

Key milestones of the development of PET service in Hong Kong Sanatorium & Hospital (HKSH) are as follows:

1. **Production of radionuclide in a cyclotron** – In the past 10 years, HKSH has evolved from its first CTI cyclotron to the present 2 Sumitomo Cyclotrons, namely, HM12s and HM10. They are more efficient and reliable.
2. **Laboratory** that incorporates the radionuclide into biologically active compounds that are normally used by the body such as glucose, peptides and acetate and so on. Ten years ago, our laboratory can only produce  $^{18}\text{F}$ -FDG for general oncology use but now many other compounds are produced and used for a variety of imaging purposes. These include  $^{11}\text{C}$ -acetate for liver, kidney and prostate cancers,  $^{11}\text{C}$  PIB for Alzheimer's Diseases and  $^{13}\text{N}$ -ammonia for cardiac perfusion. The system satisfies cGMP standard with automatic quality control and distribution system.





3. **PET Scanner** – The first single PET Scanner system in 1999 had insufficient resolution, long data acquisition time and lack of precise anatomical localization. In 2000, PET-CT fusion technology was introduced and acclaimed by the Time Magazine as one of the best inventions of the millennium. In 2002, HKSH installed the Biograph LSO PET-CT (3<sup>rd</sup> of such commercial scanner in the world at that time). In 2005, the installation of the Biograph 16 PET-CT System marked an extra range of advanced technical features such as improved image quality and efficiency. In 2009, HKSH introduced the Asia's first Molecular PET-CT. This state-of-the-art scanner brings a wide array of benefits:



- High performance (whole body scanning time is 5-10 minutes)
- Enhancement of image quality resolution
- Low patient radiation doses
- Improved patient comfort – An oversize (78cm) bore and short tunnel create a large and open scanning zone that alleviates sense of claustrophobia and fits all body sizes

- End -

### **About Hong Kong Sanatorium & Hospital**

Hong Kong Sanatorium & Hospital (HKSH) is one of the leading private hospitals in Hong Kong. It is owned by the Li Shu Fan Medical Foundation (LSFMF), which is a not-for-profit organization. HKSH is committed to fulfilling LSFMF's vision of providing quality health care and advancing medical education and research, with an overriding concern for the public good.

For more details, please visit [www.hksh.com](http://www.hksh.com)

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