HAMAMATSU
PHOTON IS OUR BUSINESS

Hamamatsu Medical Photonics Foundation

News Release

November 22, 2022
Hamamatsu Photonics K.K.
Hamamatsu Medical Photonics Foundation

A new brain PET scanner with motion correction is now on the scene and has acquired regulatory approval as a medical device in Japan

Hamamatsu Photonics K.K. (Hamamatsu City, Japan; President and CEO: Akira Hiruma) and Hamamatsu Medical Photonics Foundation (Hamamatsu City, Japan; Chairman: Akira Hiruma) have developed a brain PET (positron emission tomography) scanner called “HIAS-29000” that corrects the blurring in PET images caused by body motion of the examined subject.

The HIAS-29000 brain PET scanner with motion correction allows high-precision measurement of the brain state of subjects who have difficulty keeping still during examination. This will open doors to further research on achieving early detection and pathological elucidation of dementia and other psychiatric disorders. As well as speeding up our joint research, we will continue developing diagnostic imaging techniques based on our newly obtained knowledge to boost the diagnostic accuracy of physicians and promote therapeutic drug development.

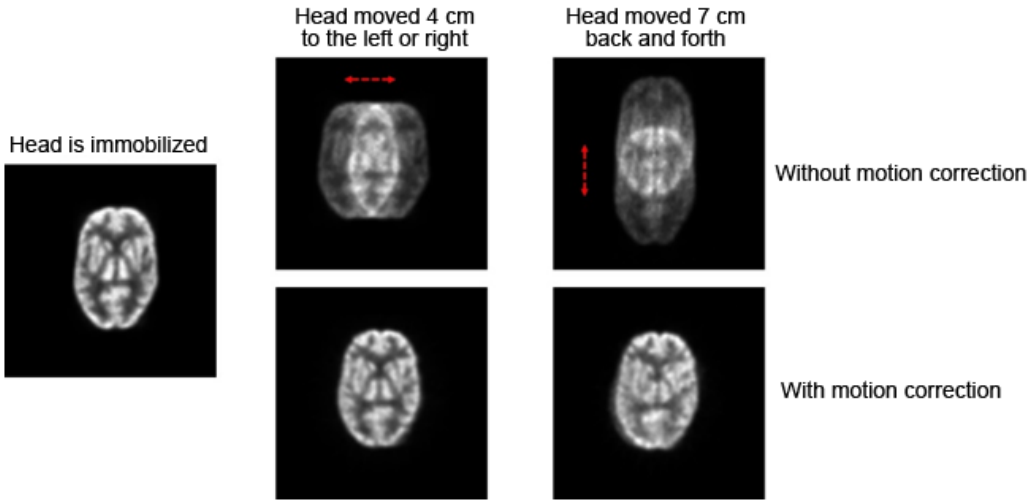
◇

For nearly 70 years, we have been developing a broad range of products that leverage photonics technology as well as conducting basic and applied research into understanding the nature of light. As part of this work, we established the Hamamatsu Medical Photonics Foundation in 2002 with the aim to contribute in achieving a society where people can live healthier lives by harnessing the power of photonics technology.

The Hamamatsu Medical Photonics Foundation planned and built the Hamamatsu PET Diagnostic Center in 2003 to fight against cancer and dementia. Since then, the Center has been doing intensive research and medical examination for cancer and brain functions using PET scanners.

Ordinary brain PET scanners cannot perform the essential task of accurately measuring the distribution of radiopharmaceuticals in the brain if subjects move their head during the examination, so a head holder must be used to immobilize it. However, immobilizing the head for a long period of time is unpleasant and uncomfortable. To avoid this, we have been working to develop a brain PET scanner that needs no head holder. This will prove a great benefit for those with psychiatric disorders such as autism and hyperactivity who are unable to keep still or for patients with moderate to severe dementia who cannot maintain a constant resting state. We also acquired regulatory approval for this brain PET scanner. We will venture into further research based on more accurate brain function data that could previously not be measured with high precision due to unpredictable body movements.

As a further step, we will push ahead with R&D efforts toward achieving a prediction system that applies artificial intelligence (AI) to indicate the likelihood of someone developing dementia.



Images with and without body motion correction captured by using a brain phantom

“Brain PET scanner HIAS-29000”