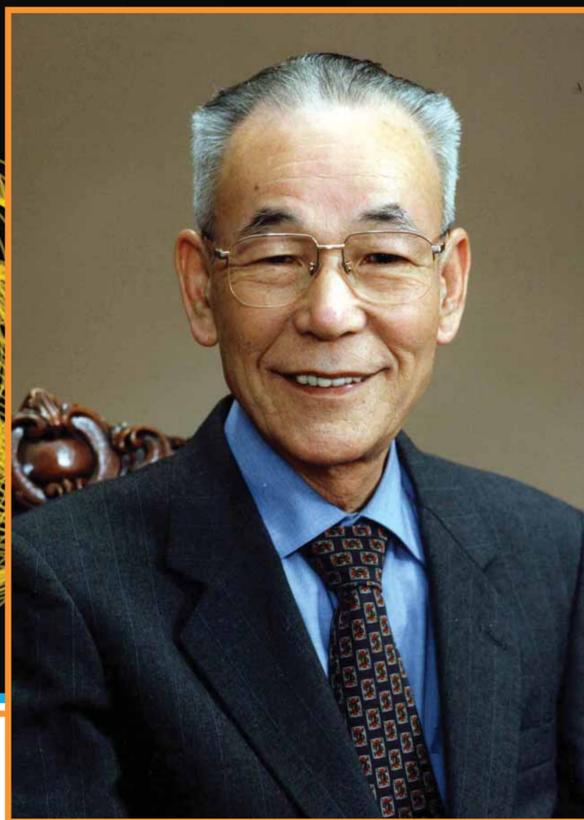


Outstanding Contributions Over the Last 50 Years



Dr. Eiichi Tanaka

Dr. Eiichi Tanaka is one of the leading authorities of Positron Emission Tomography (PET) scanner research and development. After he led the development of the first-ever PET scanner in Japan, he went on to lead internationally cutting-edge research and development on the PET physics and technology. He graduated from the Physics Department of Kyoto University in 1950. He was affiliated with National Institute of Radiological Sciences beginning in 1957 and has served at Hamamatsu Photonics K.K. since 1988 as an Advisor

and Director. He has a doctorate degree in the sciences. Between 1986 and 1989 he served as the president of Japanese Association of Radiological Physicists, the antecedent organization of JSMP. In addition to being awarded the Purple Ribbon Medal (National Honoring for Science, Technology and Culture), Dr. Tanaka has also received numerous academic awards, among them the Shimadzu Prize, the Science and Technology Agency Director-General's Award, the Mainichi Industrial Technology Award, the Eto Memorial Award, and others.

The group led by Dr. Tanaka at National Institute of Radiological Sciences pursued the research and development of the delay-line position encoding scheme from the end of the 1960s to the beginning of the 1970s and, through a joint development project with Toshiba, led the world in successful



Figure 1. The jumbo gamma camera (1972).

commercialization of a gamma camera with a large 35 cm field of view (Fig. 1). During the latter part of the 1970s, Dr. Tanaka developed the first PET scanner in Japan, the Positologica-I (Fig. 2) jointly with the Hitachi Group. This pioneering equipment adopted the BGO crystal, which quickly became the standard, achieving the highest spatial resolution in the world. The group developed the Positologica-II and III by the early 1980s, again incorporating detector technologies ahead of the rest of the world and paving the way to the development of the Positologica-IV, the first PET scanner in the world for small animals.



Figure 2 The first PET scanner, Positologica-I, in Japan (1979).

Dr. Tanaka also pursued research on image reconstruction methods for SPECT imaging since before the invention of the computed tomography (CT), devised a unique method for three-dimensional image reconstruction, and clarified the frequency characteristics of the Fourier rebinning method, which is effective for practical image reconstruction of three-dimensional PET scanning. He also contributed iterative image reconstruction methods for PET. Dr. Tanaka's research achievements in the image-engineering field are rare and lasting, thereby making significant contributions to establishing the foundation for the advanced image reconstruction technology to be used in clinical settings.