

TAE Life Sciences' Clinical Neutron Beam System for BNCT

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TAE Life Sciences is a privately funded company developing a superior accelerator-based platform for BNCT, which combines an advanced electrostatic tandem accelerator with a unique solid lithium target technology. TAE Life Sciences has exclusively licensed intellectual property from TAE Technologies, Inc., the world's largest and most advanced private fusion energy company.

Leveraging many decades of combined experience in accelerator R&D, TAE Technologies, together with its collaborators at Budker Institute, has successfully designed, fabricated, and operated several state-of-the-art accelerator systems, and introduced and experimentally validated numerous breakthrough innovations in negative ion beams and high-energy accelerator technology. TAE Life Sciences' first clinical neutron beam system has been built and commissioned, and will soon be delivered to Neuboron Medtech, Ltd. (Nanjing, China) for installation in a BNCT treatment facility.

The neutron beam system is based on an advanced electrostatic tandem accelerator which delivers a proton beam of 2.5 MeV with a DC current of over 10 mA to a stationary, solid Li target. The unique system configuration offers strong practical advantages including a tunable neutron beam, compact size, high reliability and relatively low total cost of ownership.

This talk will provide a comprehensive overview of the TAE Life Sciences experimental program, neutron beam system design, and early operating experience.