

應用高能物理探測器的技術，研發出快速、高靈敏度且穩定的質子束偵測器、可應用於質子癌症治療中心的筆型質子束品保及質子加速器校驗。

李世昌院士領軍的中央研究院物理研究所實驗高能物理團隊成員(林志勳、朱明禮、鄧炳坤)與中央大學、長庚大學及嘉義大學合作，應用高能物理探測器的技術，研發出適用於掃瞄式筆型質子束品保的偵測器。此偵測器具備高速及高解析功能，可在極短時間內驗證質子束特性(位置、大小、掃瞄速度及能量)，立即反應任何異常，而達到每日品保目的。

現今全世界質子癌症治療中心數目快速成長，其中新穎的筆形掃瞄技術將成主流。此偵測器可在極短時間內完成精確的質子束特性驗證，頗具市場競爭力。此一成果獲得第十二屆國家新創獎 - 臨床新創獎的肯定。

國家新創獎由社團法人國家生技醫療產業策進會主辦，以鼓勵創新、研發為宗旨。不僅是我國生技領域創新研發最高榮耀，也是橫跨學界及業界交流合作的最佳平台。

The experimental high energy group (Drs. Lin C.H., Chu M. and Teng P.K.) of Institute of Physics, Academia Sinica, led by Academician Lee S.C., has been collaborating with National Central University, Chang Gung University and National Chiayi University to develop a high speed and fine spatial resolution ionization detector, "Cross", to measure the characteristics of proton scanning pencil beam. The detector can determine the position, shape, scanning speed and energy of the proton beam in a very short time.

Proton therapy using pencil beam scanning (PBS) system allows precision dose delivery to target and minimizes the overall exposure. The Cross detector is highly competitive with its great performance for the PBS daily QA.

The team has been granted the 2015 National Innovation Award sponsored by the Institute for Biotechnology and Medicine Industry for their achievement in developing the detector for PBS beam quality assurance.

