



Contribution ID: 627 Contribution code: WEPC17

Type: **Poster Presentation**

Design of a Ku-band Side-coupled Standing-wave 2.5 MeV Accelerator

Wednesday, 22 May 2024 16:00 (2 hours)

Compact accelerator systems are assuming an increasingly significant role within the domain of radiotherapy. As processing technology continues to mature, X-band accelerators have garnered extensive utilization. This study introduces a design for a side-coupled traveling-wave Ku-band accelerator tube, leveraging established processing methodologies. The envisaged particle output energy stands at 2.5 MeV, with a microwave power source requiring a 300 kW input sourced from a klystron. The microwave design outcomes, derived using ANSYS HFSS, are delineated herein, alongside considerations pertaining to dynamic output and engineering design. Subsequent stages will subject this accelerator tube to processing tests, with the overarching objective of effectively supplanting the natural radiation source Co60 within the realm of radiotherapy.

Footnotes

Funding Agency

Paper preparation format

LaTeX

Region represented

Asia

Primary author: Mr LI, Qingzhu (Tsinghua University in Beijing)

Co-authors: SHI, Jiaru (Tsinghua University in Beijing); ZHA, Hao (Tsinghua University in Beijing); GAO, Jian (Tsinghua University in Beijing); HU, Fangjun (Tsinghua University in Beijing); FENG, Boyuan (Tsinghua University in Beijing); LI, Hongyu (Tsinghua University in Beijing); CHEN, Huaibi (Tsinghua University in Beijing)

Presenter: Mr LI, Qingzhu (Tsinghua University in Beijing)

Session Classification: Wednesday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A08 Linear Accelerators