

The transmission dynode (tynode) vacuum electron multiplier

Thursday, September 16, 2021 8:05 AM (1 minute)

With Atomic Layer Deposition (ALD) MEMS technology, thin multilayers have been realised which emit, after the absorption of an energetic electron at the top side, a multiple of secondary electrons at the bottom (emitting) side. In order to avoid charge-up effects, one of the layers has the function to replenish electrons and is therefore a conductor. With ALD MgO, a transmission secondary electron yield (TSEY) of 5.5 has been reached, enabling the single-electron sensitive Timed Photon Counter TipC in which a stack of 8 tynodes is placed on top of the TimePix3 or TimePix4 chip.

The alignment of 8 tynodes in a stack is obtained by applying grooves at both sides of a tynode: a glass wire in the groove is sandwiched between adjacent tynodes, locking their mutual 3D position.

Title

Prof

Your name

Harry van der Graaf

Institute

Nikhef & TU Delft

email

vdgraaf@nikhef.nl

Nationality

Dutch

Primary author: VAN DER GRAAF, Harry (Nikhef National institute for subatomic physics (NL))

Co-authors: THEULINGS, Annemarie; Mr CHAN, Hong Wah; Dr HAGEN, Kees (TU Delft); Dr PRO-DANOWIC, Violeta; SARRO, Pasqualina (Delft University of Technology); TAO, Shuxia (nikhef)

Presenter: VAN DER GRAAF, Harry (Nikhef National institute for subatomic physics (NL))

Session Classification: Poster Session 4 (Position Sensitive Fast Timing Detectors)

Track Classification: Position Sensitive Fast Timing Detectors