

# DRD3-SiC-LGAD Meeting

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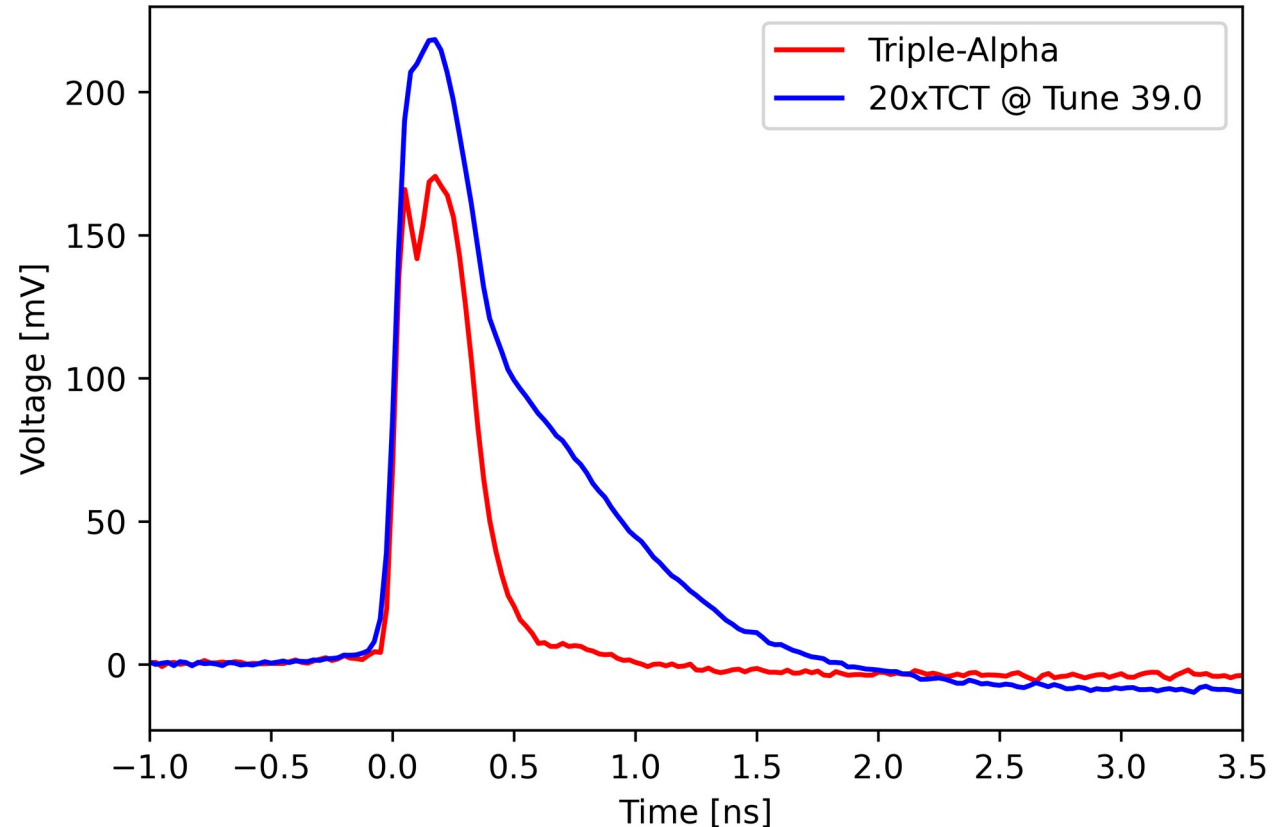
HEPHY

21.02.2025

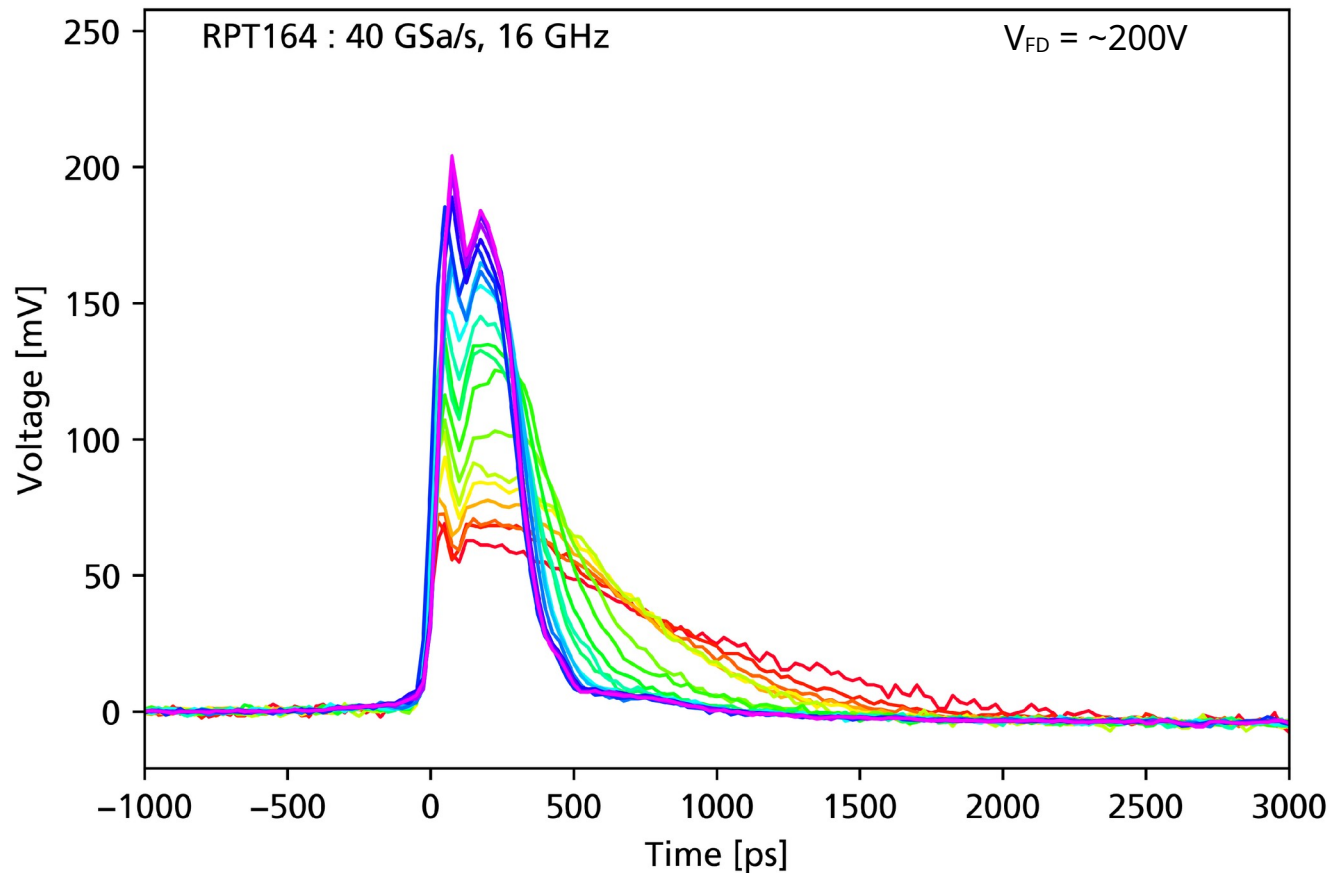
# TCT and Alpha Waveforms

- Waveforms with alpha particles much faster than for UV-TCT (= IR in Si)
- UV-TCT:  
Slow drift of holes with  $\sim 0.3-0.5 \times v_{\text{sat,h}}$
- Alpha:  
Faster drift closer  $v_{\text{sat,e}}$

SiC High BW D-R 0.47 pF, PMA3-14LN+ Eval Board, 400V Bias



# Alpha Voltage Scan



Instantaneous Current:  
 $I(t=0) = q * v * E_w$

# SiC and Si Drift Velocity

Mobility from Lades, Martin. "Modeling and Simulation of Wide Bandgap Semiconductor Devices: 4H/6H-SiC." (2000). [\[PDF\]](#)

