



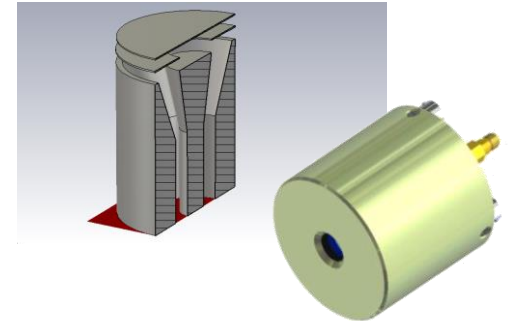
Modelling of Picosecond Timing Signals from Fast Vacuum Photodiodes

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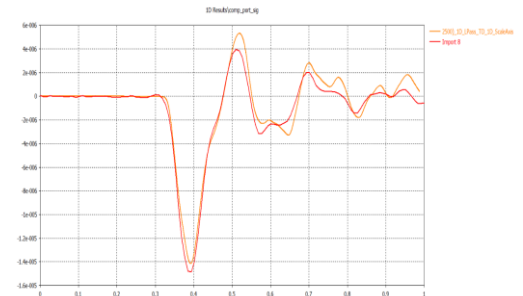
James Milnes, Photek Ltd., UK

Colin Horsfield, Atomic Weapons Establishment PLC, UK

- The Photek PD010 photodiode was modelled with CST Studio Suite software using particle tracking.
- A cut-away drawing of a simplified photodiode detector is shown on the right, together with a photograph of the device in its housing.
- The model used for simulation results below was significantly more detailed and was developed using the 3D CAD STEP file used for actual device manufacture.
- It was easily imported into the CST Studio Suite software to create an accurate geometrical model.
- The results (right) show that the simulation can accurately predict photodiode performance even at very high bandwidths.



CST simulation model next to photodiode device



Comparison of experimental versus simulated data