

AIDA WP9.5 Plans at MPI Munich

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Planned MPI Activities

- Two main interests:
 - Direct coupling of SiPMs to scintillator tiles
 - Potential mechanical simplification
 - Faster response - Beneficial for time stamping
 - ▶ Needs a test stand to evaluate the performance of the tiles with SiPMs
- Development and study of novel SiPM devices
 - Potential cost savings, improved photon detection efficiency
 - ▶ Needs significant development work and performance studies with prototypes
 - ▶ Needs a test stand to evaluate performance together with scintillator tiles

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Close link to CERN plans

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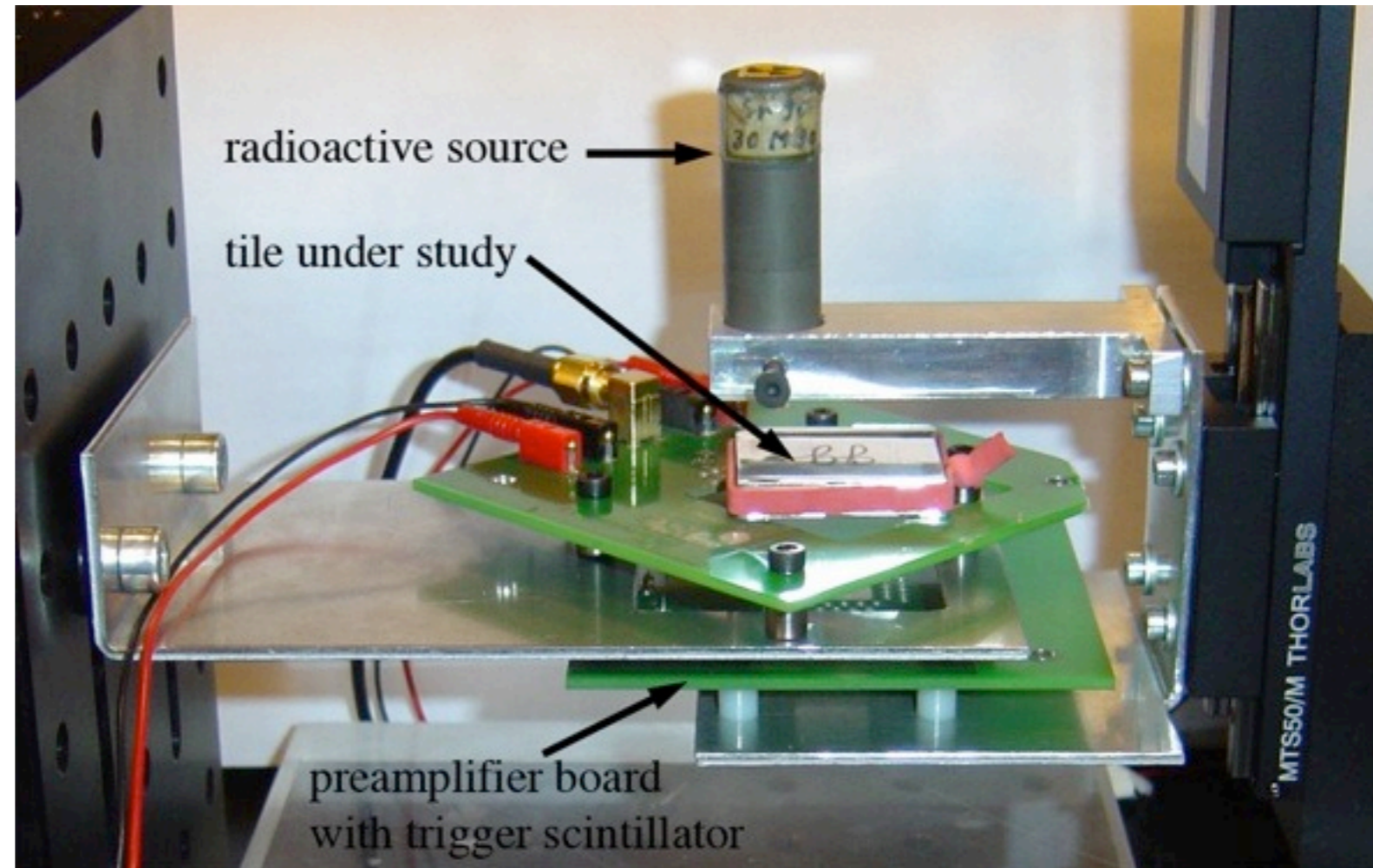
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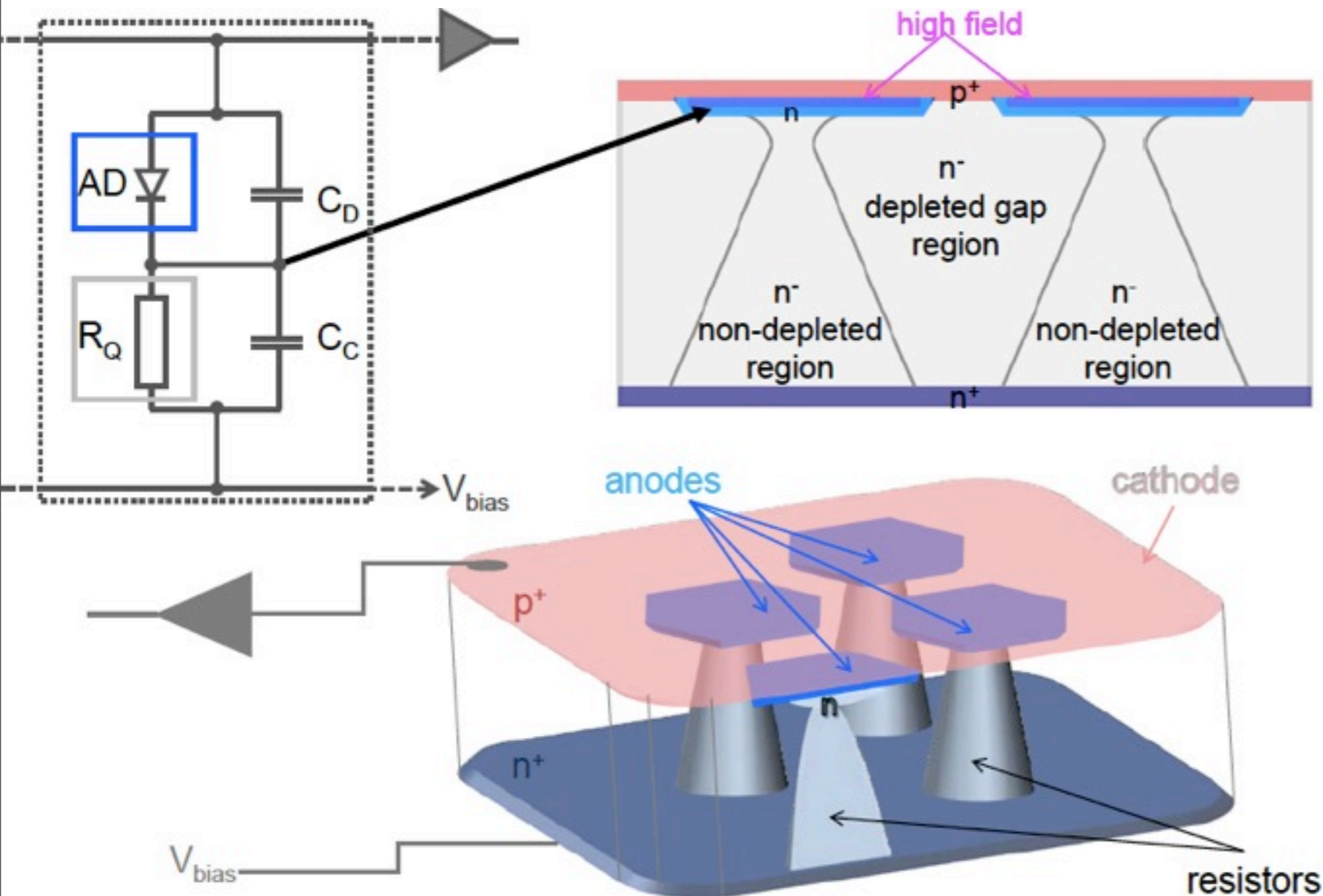
Scintillator Tile Test Stand

- Upgrade and expand already existing test stand
 - Faster DAQ instead of very expensive, slow oscilloscope
 - Potentially different radioactive source: ^{106}Rh to provide electrons above 3 MeV (currently using ^{90}Sr , max 2.2 MeV)
 - Provide possibility to scan across tile borders: multiple tiles under study



Silicon Photomultiplier Development

- Novel SiPMs: Bulk-integrated quench resistor
 - No surface structure: Increased photon detection efficiency
 - Coarse lithographic level, small number of processing steps



The plan:

- Prototype production for small pixel devices: Optimized for calorimetry (substantial investments in infrastructure at the MPI HLL already made)
- Additional manpower for the study of these devices with a view towards calorimetry