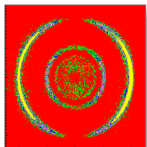


RoentDek

The Detector Factory

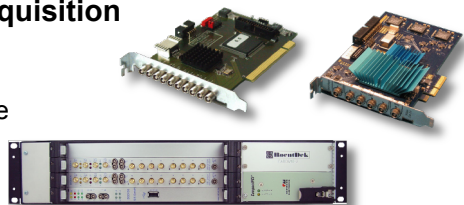


MCP-Detector Systems
Multi-Hit particle detection
Coincidence electronics modules
Fast Data Acquisition
Hardware & Software solutions
Gas Targets
Custom made Systems

Electronics

Data Acquisition

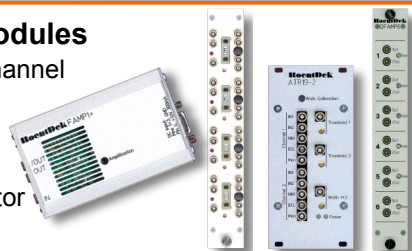
- TDC
- ADC
- Software



Front-End Modules

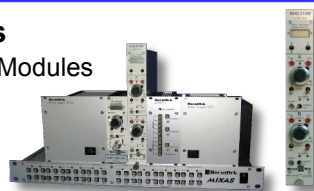
single & multi channel

- CFD
- Fast Amp
- NIM-Logic
- Pulse Generator



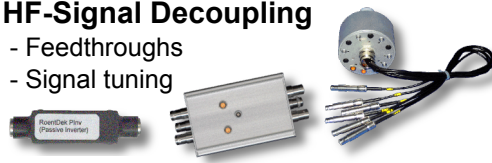
Power Supplies

- Adapter for NIM-Modules
- High Voltage
- Low Voltage
- Feedthroughs



HF-Signal Decoupling

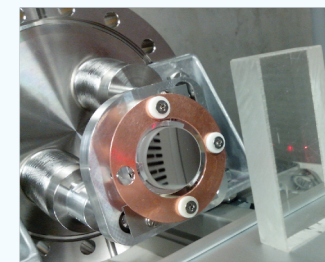
- Feedthroughs
- Signal tuning



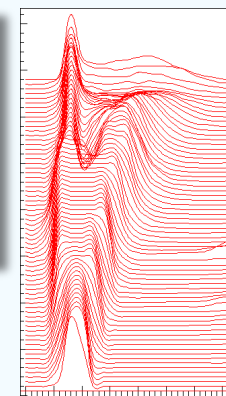
New

New:

- Higher spatial resolution for Hexanodes due to new position linearity auto correction
- Laser focusing systems with compact nonmagnetic 5D-manipulation, optimized viewports and mirrors
- Pulse height converting CFD channels (e.g. for MCP diagnosis and advanced data filtering)



5D mirror mount



MCP-pulse height

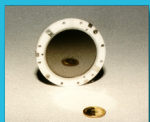
Coming up soon:

- ultra-fast detectors for particle burst detection based on a new anode concept (e.g. for FEL-experiments with over 10 particles/100ns)
- 6 channel digital rate meter

History: **RoentDek** was founded in 1991 by a team of scientists from the Goethe-University in Frankfurt Germany.

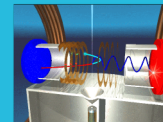
Our activities are focused on the development of **time and position sensitive detectors** for the imaging of particles emitted in advanced research and technology applications.

Several devices have reached the stage of production and are in use at institutions around the world. Our efficient service and state-of-the-art technology at affordable prices have been appreciated by many satisfied customers.



Detectors

Camera Systems



COLTRIMS

Single Particle Detection

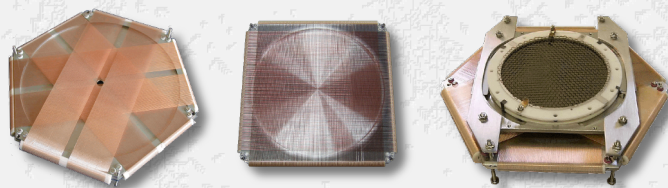
Photons, Atoms, Ions,
Neutrons, Electrons,
Molecules, Cluster, ...



Our complete **Microchannel Plate (MCP) detector** and software solutions as well as a variety of electronic modules are capable of **single particle/photon counting** at highest count rates in series (event by event), parallel (Multi-Hit) and in coincidence (one or several detectors). Our range of products cover **fast data acquisition systems** such as Time to Digital Converter (TDC) or Analog to Digital Converter (ADC) computer interfaces with up to 64 channels.

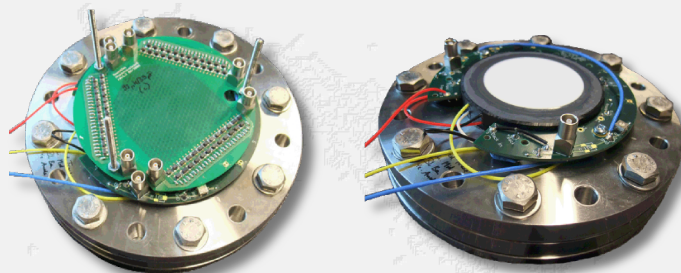
Detection specifications:

- Active diameter: 40 - 150 mm
- Position resolution < 0.1 mm
- Timing resolution < 0.5 ns
- Throughput: 1,000,000 particles/photons per second



Conventional Delay-Line Anode

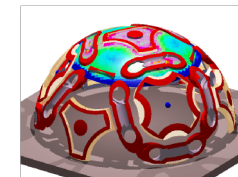
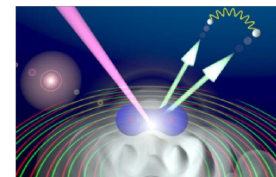
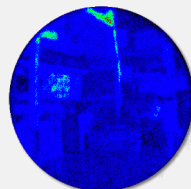
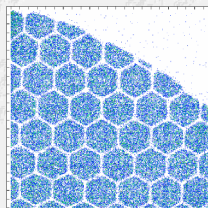
Delay-Line Anodes are available in different designs: 2-layer quadratic, 3-layer hexagonal and custom made solutions. They perform a general high resolution position read out and an excellent overall linearity in case of the patented Hexanode that is also designed for advanced Multi-Hit detection.



Resistive screen detectors

A novel "resistive screen" detector design allows placing the read-out anode (e.g. Delay-Line) on the air side of a **flange-mounted open-face MCP detector** and also enables an encapsulated **photon counting detector** version with integrated photo cathode (e.g. for visible photon area detection).

- Photon counting for visible wavelengths
- True single event counting
- Extremely low background
- Unlimited dynamic range
- Position resolution of 50 microns
- Easily reconfigurable air-side read-out anode
- Open area of 40 mm or 25 mm



3D-Momentum Imaging

COLTRIMS (COLd Target Recoil Ion Momentum Spectroscopy) is a **reaction microscope** for quantum mechanical systems. It is well known and successfully adopted in atomic physics and already applied in other fields such as solid state physics and surface science. Our variety of MCP-detectors, electronics, data acquisition, targets and custom made solutions supports scientific labs around the world.

- Complete Systems
- Supersonic Gas Jets
- Gas Nozzles
- Skimmers
- Filter units

