

■ Our Skills

We design and construct customer-specific electronic measurement devices. Further, we offer a number of standard solutions such as high-precision power supplies and power amplifiers.

Complex multidisciplinary solutions are our forte. Our customers benefit from our expertise in the following areas:

- Physics
- Electronics
- Mathematics
- Computer Science

■ Our Services

Research Projects

We support our customers during all stages of their research work. In the following examples, our contribution ranged from the design of the experimental setup to the implementation of the project:

- space experiment on studies of the solar wind: development of a solar wind detector with a novel fast determination of the distribution function of solar wind particles; planned launch: 2007.
- experiment on dust charging: further development of an experiment investigating the interaction of single dust grains with plasma particles, precise determination of the specific charge of a dust grain stored in a quadrupole trap.

Physical Analyses, Analytical Calculations, Numerical Simulations

We offer consulting in numerous scientific areas, the following list represents a part of our activities:

- experimental physics (ion and molecular physics, optics, optical spectroscopy, mass spectroscopy)
- trapping techniques for ions and microparticles, particle detection
- vacuum, laser and cryogenic techniques
- precision analog electronics, optoelectronics, data acquisition and analysis

Scientific Instrument Design and Electronics Development

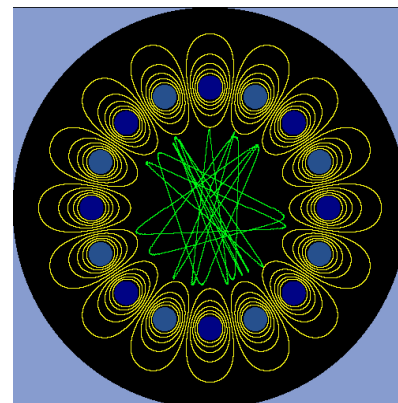
We build special devices and laboratory measurement instruments according to customer specifications (see also next page):

- vacuum and optical systems, mechanics
- process/experiment control, vacuum control units
- data acquisition and processing
- electronic devices and laboratory instruments

Software Development

We develop programs in C++, G (LabVIEW) and other programming languages:

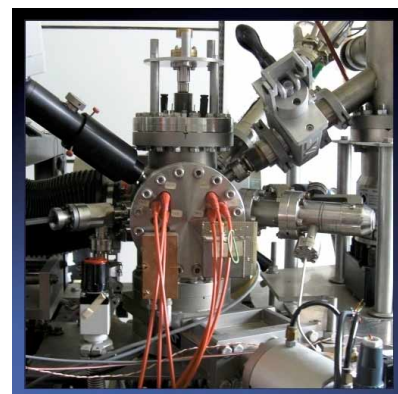
- dedicated control software
- programs for data processing and analysis
- numerical simulations



Simulation of particle trajectory in a linear 16-pole



Flight version of the solar wind-detector



Laboratory experiment on dust charging



Power supply for ion guides

■ Our Products

We offer, besides customer-specific solutions, a number of standard products. The following shows an extract of our linecard:

Power Supplies

The spectrum of our power supplies ranges from simple low-voltage to high-precision high-voltage power supply units:

- precision open-frame power supply units
high-precision linear high-voltage power supplies with noise and ripple lower than 1 ppm, suitable especially for use with APEX amplifiers
- 19" plug-in power supply units
linear low-voltage power supplies as open 19" plug-in units or in closed 19" metallic cases, suitable for supplying sensitive analog circuits
- adjustable power supply units/power amplifiers
dc-accurate high-voltage power amplifiers in 19" housings, high-precision versions available
- 19" plug-in amplifier modules
high-voltage amplifiers as 19" plug-in units with heat sinks for modular construction of multi-channel amplifiers or adjustable power supply units



Audio and Radio-Frequency Sources

These sources are suitable for driving electrodynamical traps in various frequency regions.

- modular radio-frequency generator
generates two-phase sinusoidal voltages in the megahertz region, the amplitude is manually or remote controllable, the frequency is fixed, it can be altered by exchanging the power stage
- quadrupole power supply unit 3x400 V
ultra-precise high-voltage amplifier, suitable especially for high-precision driving of quadrupole traps for micro- and nanoparticles or for heavy ions



Computer-Controlled Instrumentation

We offer extendable systems for process control and data acquisition; they can be controlled via a LabVIEW software interface, and thus be simply integrated into existent systems.

- modular data-acquisition system
flexible modular design with many measurement cards (A/D, D/A converters, counters, timers, digital I/O, programmable logic arrays, etc.), extendable to up to 240 measurement cards, connection to a PC via an opto-isolated serial interface
- PC measurement and interface cards
special interface (for instance I²C) and measurement cards as a simplified version of the data-acquisition system

