

# MICADAS

Mini Carbon Dating System

*The most compact  
<sup>14</sup>C-AMS system in the world*



Highest performance with the world's smallest AMS system: The Mini Carbon Dating System MICADAS is a true precision instrument for your <sup>14</sup>C applications. With its permanent magnet and new design, the MICADAS is also the most energy efficient AMS in the world and has the lowest infrastructure requirements.

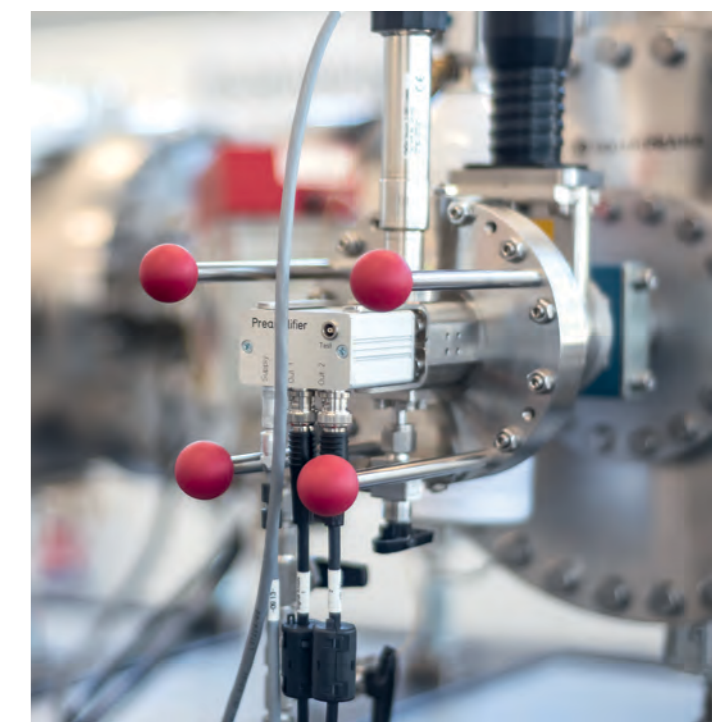
The first prototype of MICADAS was developed and built by the Laboratory of Ion Beam Physics at ETH Zurich in 2004. Since then more than 20 instruments have been built and delivered to customers worldwide. MICADAS has demonstrated highest performance and reliability and has become the new standard in <sup>14</sup>C-AMS.

With its dimensions of only 3.2 m x 2.6 m x 2 m, MICADAS is the most compact commercially available <sup>14</sup>C-AMS system in the world. Its helium stripping offers a very high transmission of up to 47 % and outstanding measurement stability, thus significantly reducing the need for retuning.

The MICADAS hybrid cesium sputter ion source is equipped with a random-access sample changer that holds up to 40 graphite or gas cathodes. Stable ion beam currents of 50 to 150  $\mu$ A and 10 to 20  $\mu$ A C<sup>-</sup> are readily achieved in routine operation with solid and gas samples, respectively.

The acceleration potential of 200 kV is provided by a solid-state power supply without any moving parts, the terminal is vacuum insulated – no SF<sub>6</sub> or other insulation gases are required. A state of the art gas ionization detector with low noise and virtually no degradation provides the most reliable detection of <sup>14</sup>C ions. With this configuration, blanks older than 50'000 radiocarbon years are readily obtained.

In conjunction with the Gas Interface System GIS, MICADAS performs fully automated gas measurements with an auto sampler, an Elemental Analyzer or CO<sub>2</sub> filled glass or quartz tubes. MICADAS is therefore also the most powerful choice for your small samples and high throughput applications.



## KEY FEATURES

- Simple and fast tuning
- High measurement stability over long time
- Fully automated gas measurements with GIS
- Fast magazine changes for continuous measurements without breaking the vacuum or cooling down any part of the ion source
- Low space requirements through very compact design
- Extremely low power consumption of 2.5 kW
- The system is fully air-cooled, no cooling water needed
- Hybrid cesium negative sputter ion source for solid and gas cathodes
- Vacuum insulated accelerator terminal without any moving parts, no SF<sub>6</sub> needed
- Minimal maintenance