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Accelerator mass spectrometry systems for ¹⁴C in low-level labeling studies

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A ccelerator Mass Spectrometry (AMS) is a powerful technique for sensitive low-level ¹⁴C measurements. By counting atoms rather than waiting for their decay, micro-tracer studies become possible and total doses administered to volunteers are minimized. Typical drawbacks of AMS are the size and complexity of the necessary instrumentation and the sample preparation for AMS, which lowers throughput and increases the cost. Both of these problems have been tackled at the Laboratory of Ion Beam Physics at ETH Zurich in recent years: The once large instrumentation has been improved and optimized to today's MIni CArbon DAting System (MICADAS), the most compact AMS system available. Sample preparation and measurements have been optimized for a more straightforward, simpler and faster sample handling. This article highlights the achievements of the last years and talks about our ongoing developments in the field of AMS for future applications in biomedical research.

Biography

Simon M Fahrni had completed his PhD in Radiochemistry at the University of Bern, Switzerland before 2 Postdoctoral studies at the University of California, Irvine and ETH Zurich. He is currently working on coupling interfaces to AMS systems for a broad range of applications.

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