al., this conference). The records of the human presence in this region spans the last 40,000 yr and is directly related to environmental changes in the Pleistocene (Tuniz *et al.*, this conference).

Our environmental monitoring program for nuclear safeguards, sponsored by the Australian Safeguards Office and the IAEA, is based on the detection of ^{129}I (and other long-lived radioisotopes produced by fission or neutron activation) to trace specific nuclear activities such as reactor operations, uranium enrichment and weapons testing. AMS measurement of actinides in environmental samples is also being developed within this program (Smith *et al.*, this conference).

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IMPROVEMENTS OF THE AMS FACILITY AT UTRECHT

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Adaptations have been made to the Utrecht facility based on an EN tandem accelerator. Especially for ^{14}C analyses, a stable and efficient stripping has been accomplished through the circulation system in the gas in stripper based on a 360 l/s turbopump. Rapid alternation of the isotope beams of Be, C, Al, and Cl is obtained with a new beam switching system. A preset sequence of HV-pulses can be chosen with amplitudes between −3 and +6 kV and pulse lengths between 40 and 1000 μs. To improve the detection limit, especially for the heavier radionuclides, we have installed a 90° electrostatic analyzer prior to the existing 90° injection magnet. Both analyzers are matched to form an achromatic system with a mass resolution $m/\Delta m = 200$. At the high-energy end we replaced the 90° existing analyzing magnet by a larger (R = 110 cm) and double focusing one. The computer-controlled system allows us to perform automated measurement of batches containing 22 samples. For ^{14}C, the analytical precision reached is 0.3% for recent material, and the detection limit allows resolution of residual activities back to 50,000 yr. For the heavier radionuclides the analytical precision reached is 1%, and the detection limit is 10–14.

AMS IN GRONINGEN: A SURVEY OF PROJECTS

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Since the Groningen AMS system became operational for ^{14}C analysis (summer 1994), *ca.* 2000 samples have been analyzed for a broad range of applications and projects. Here we provide a survey of the results obtained thus far.