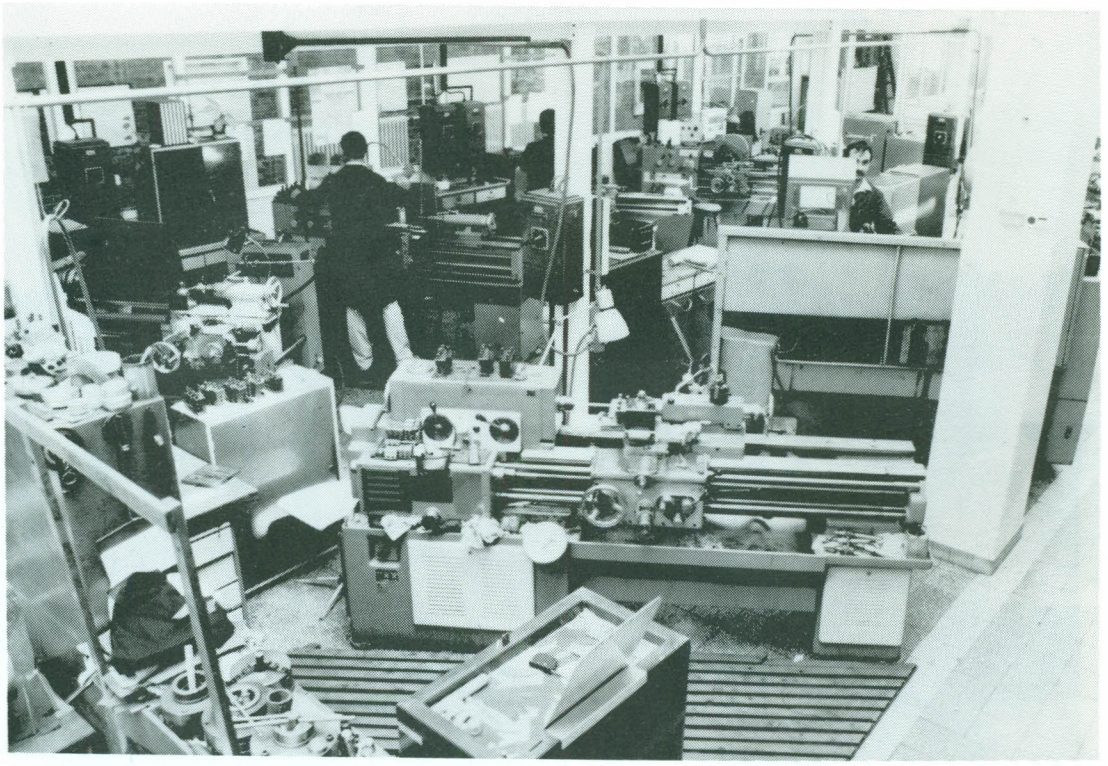
MECHANICAL TECHNOLOGY IN ATOMKI

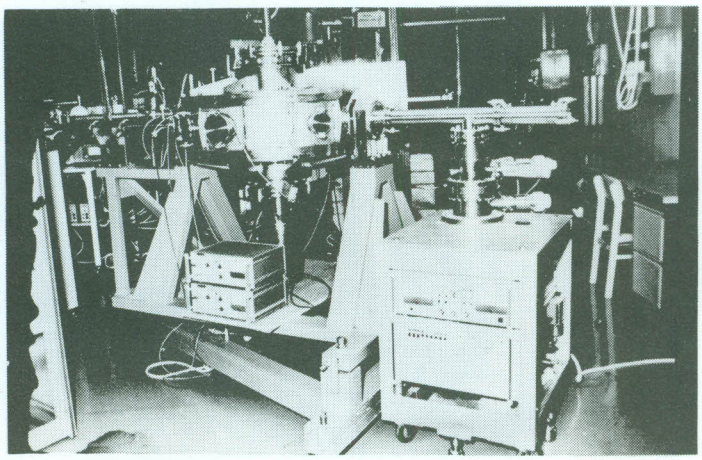
INSTITUTE OF NUCLEAR RESEARCH
OF THE HUNGARIAN ACADEMY OF SCIENCES **(ATOMKI)**
H-4001 DEBRECEN, P.O.Box 51, HUNGARY
Telephone: (+36)–52–17-266,
Fax: (+36)–52–16-181,
Telex: 72-210 (atom h)

The Institute of Nuclear Research of the Hungarian Academy of Sciences (ATOMKI) was established in 1954. From the very beginning considerable amount of work has been devoted to develop equipments and special techniques needed in research. In accordance with the traditions of the Debrecen school of nuclear physics, instrumental research and the development of advanced measuring techniques gain equal appreciation with successful work in basic research. The *Mechanical Technology Division* provides the technical background for mechanical engineering and manufacturing in the Institute used both in fundamental and applied research.

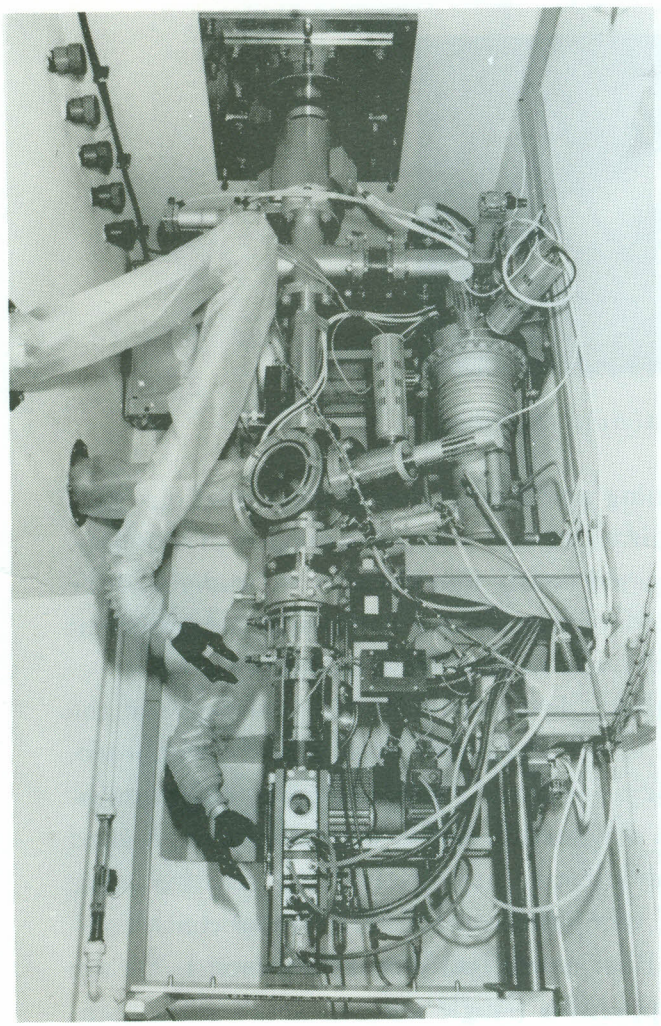


The main hall of the mechanical workshop

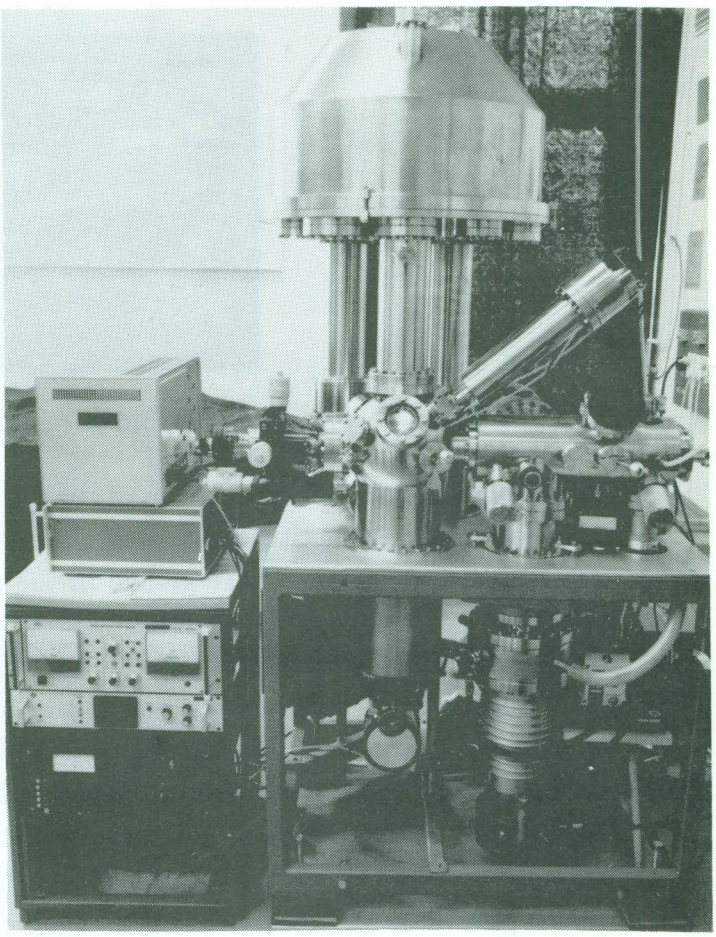
We have built a particle accelerator of the Cockroft-Walton type and Van de Graaff generators, magnetic and quadrupole mass spectrometer systems, unique electrostatic electron spectrometers, cryogenic devices, different beam diagnostic units, isotope production systems on cyclotron and other targetries; all of them using high vacuum technique. Contacts with the economic and industrial spheres are realized within the frames of cooperative development work and industry sponsored R&D activities.



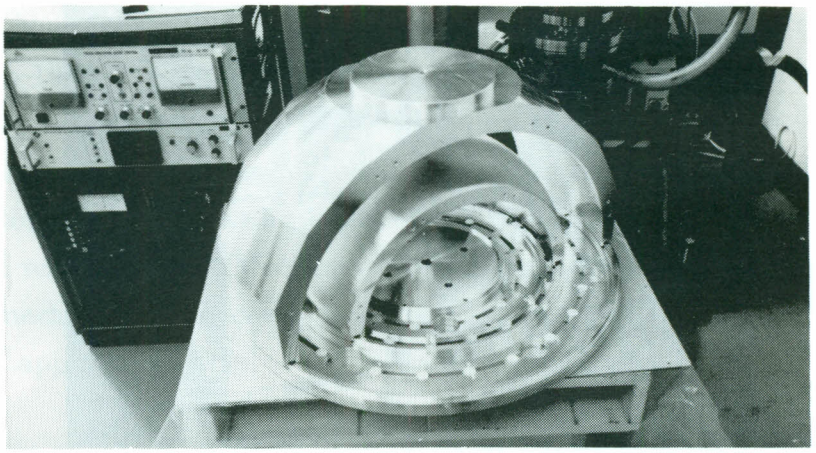
Scattering chamber with vacuum system at the MGC cyclotron beam line



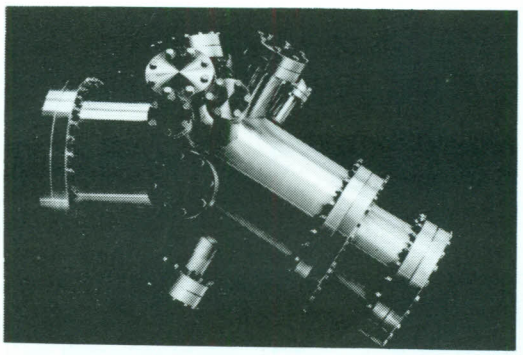
Target system for isotope production on the vertical beam line of the MGC cyclotron.



The unique hemispherical electron spectrometer (ESA-31) provides new facilities for analysis of surfaces and interfaces by using high resolution X-ray photoelectron spectroscopy.



The spherical deflector system of the electron spectrometer ESA-31



A stainless steel vacuum chamber

ATOMKI realizes the importance of maintaining and strengthening good relations with other laboratories, institutions, research organizations and different branches of economy. Using the experience we have gained in the passed nearly four decades we undertake the design and manufacturing of unique automated vacuum systems, physical measurement systems for different purposes also as a participation in joint R&D projects.

Equipments, instruments built and methods developed with the assistance of the *Mechanical Technology Division* are available to our customers both inland and abroad, and are used also in the industry, biotechnology, earth and cosmic sciences, environmental research, pharmaceutical industry, medical diagnostics, higher education, etc. A good example to demonstrate how we introduce the latest technology into the practice is the quadrupole mass spectrometer based, complex, computer controlled fermenter control system developed and installed for the BIOGAL Pharmaceutical Works (Debrecen). We are ready to design, develop, and build custom apparatus (single units or small series manufacturing) in our 1600 m^2 office and workshop facility, with our engineers, technicians, skilled workers and a large machine park, supported also by the divisions of the Institute. Having any question related to this division, please contact us by calling or writing to *Dr. Gyula Mórik* chief engineer or *István Gál* design engineer.