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 NAME OF MACHINE SOLTAN INSTITUTE FOR NUCLEAR STUDIES
 INSTITUTION SOLTAN INSTITUTE FOR NUCLEAR STUDIES
 ADDRESS 05-400 OTWOCK-SWIERSK, POLAND
 TEL 798138 TELEX 813244
 IN CHARGE J.Sura REPORTED BY J.Sura

HISTORY AND STATUS

DESIGN, date 1983 Model tests 1983
 ENG DESIGN, date 1984
 CONSTRUCTION, date 1985-1987
 FIRST BEAM, date (or goal) 7.02.1989
 MAJOR ALTERATIONS

COST, ACCELERATOR
 COST, FACILITY, total 350 Mz
 FUNDED BY Polish Atomic Agency
 ACCELERATOR STAFF, OPERATION AND DEVELOPMENT
 SCIENTISTS 4 ENGINEERS 5
 TECHNICIANS 4 CRAFTS 2

GRAD STUDENTS involved during year
 OPERATED BY Research staff or Operators
 OPERATION hr/wk, On target hr/wk
 TIME DISTR. in house %, Outside %
 BUDGET, op & dev
 FUNDED BY

RESEARCH STAFF, not included above
 USERS, in house outside
 GRAD STUDENTS involved during year
 RESEARCH BUDGET, in house
 FUNDED BY

MAGNET
 POLE FACE, diameter (compact) 105 cm, R extraction .45 cm
 R injection cm
 GAP, min .2 cm, Field .22,5 kG }
 max .10 cm, Field .12,5 kG } at 164000
 AVERAGE FIELD at R ext .18 kG } Ampere turns
 B max/ < B > 1,25

NUMBER OF SECTORS { compact 4 } Spiral, max 0 deg
 separated
 SECTOR ANGLE (SSC) 45 deg
 TRIMMING COILS none

CONDUCTOR, material and type copper \emptyset 12x2
 STORED ENERGY (cryogenic) MJ
 POWER: main coils .65 max, kW; current stability 10
 trimming coils max, kW; current stability
 WEIGHT: Fe 38 tons; coils 1.38 tons
 COOLING system water
 ION ENERGY (bending limit) E/A = .31 q²/a² MeV/amu
 (focusing limit) E/A = .50 q²/a² MeV/amu

ACCELERATION SYSTEM

DEES, number 2; angle 45 deg
 BEAM APERTURE 2 cm; DC Bias kV
 TUNED by, coarse fixed fine \pm 0.4 MHz trimmer
 RF .52.78 to MHz, stable \pm 10⁻⁶
 Orb F 26.39 to MHz
 HARMONICS, RF/Orb F, used 2
 DEE - Gnd, max .50 kV, min gap 0.5 cm
 STABILITY, (pk-pk noise)/(pk RF volt) 10⁻³
 ENERGY GAIN, max 141 kV/turn
 RF PHASE, stable to \pm dees bridged deg
 RF POWER input, max 25 kW
 FREQUENCY MODULATION, rate /s
 modulator, type
 beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 5*10⁻⁶ Torr or mbar
 PUMPS, No, Type, Size oil diffusion
 2x2000 l/s

ION SOURCES

cold cathode used, external during assembling

INJECTION SYSTEM

axial during assembling

EXTRACTION SYSTEM

stripping by carbon foil

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed 2x60 m²; movable m²
 TARGET STATIONS 1 in 1 rooms
 STATIONS served at same time, max 1
 MAG SPECTROGRAPH, type
 COMPUTER model
 OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV)		CURRENT (pA)	
	Goal	Achieved	Internal	External
H ⁺ -> p	30	15 test		50 goal

SECONDARY

(part/s)

BEAM PROPERTIES

MEASURED	CONDITIONS	
	MEASURED	CONDITIONS
PULSE WIDTH RF deg	pA of MeV ions	
PHASE EXC, max RF deg	pA of MeV ions	
EXTRACT eff %	pA of MeV ions	
RESOL $\Delta E/E$ %	pA of MeV ions	
EMITTANCE		

(π mm. mrad) { axial } pA of MeV ions
 rad

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS .. SOLID STATES PHYSICS ..
 BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS 100%

REFERENCES/NOTES

- 1/ J.Sura et al., IPJ 1982, Warszawa /1983/.
- 2/ IEEE Trans.Nucl.Sci., Vol. NS-32,5 /1985/.
- 3/ 11-th Cycl.Conf., Tokyo, 76-79 /1986/.

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS