

ENTRY NO. C42 Date June 26/92
 Name of Machine U-200P Cyclotron
 Institution Heavy Ion Laboratory, Warsaw University
 Address ul. Banacha 4, PL 02-097 Warsaw, POLAND
 Tel (48-22) 222 123 Telex 817330 SLCJ PL Fax (48-2) 659 2714 EMAIL
 In Charge: J. Jastrzebski Reported by: A. Sliwinski

HISTORY

MILESTONE DATES:
 Design 1978 Model Tests
 Construction 1989 at final site First Beam (expected) 1993
 DESIGN/CONSTRUCTION BY:
 in house YES other JINR, Dubna, INS, Swierk
 COST: Accelerator Facility
 FUNDED BY: Univ. of Warsaw, Ministry of Education
 State Committee for Scientific Research (KBN)

STATUS

STAFF: Machine
 Scientists 18 Engineers 18
 Technicians 21 Students
 Research (in house/external)
 Scientists / Engineers /
 Technicians / Students
 BUDGET: Machine Total PLZ (1991) Funded by UW, MEN, KBN
 Research 17.15 billion Funded by
 TIME DISTRIBUTION:
 Basic Research (in house/external) % / %
 Applied Program (in house/external) % / %
 Development % Maintenance %

MAGNET

POLE PARAMETERS:
 Diameter 200 cm R_{extract} 85 cm R_{inject} cm
 HILL PARAMETERS: Gap (min) 2.7 cm B_{max} 2.63 T
 (@ 0.5x10. AT) Gap (max) 5.15 cm B_{min} 2.5 T
 VALLEY PARAMETERS: Gap (min) 15.2 cm B_{max} 1.7 T
 (@ 0.5x10. AT) Gap (max) 15.2 cm B_{min} 1.6 T
 AVERAGE FIELD: < B >_{min} 1.8 T < B >_{max} 2.1 T
 NUMBER OF SECTORS: compact/separated 4 /
 sector angle 42 deg. spiral (max) deg.
 FIELD TRIMMING: Trim Coils 10 pairs water cooled
 Harmonic Coils
 Other
 CURRENT: Main Coils 1400 max. Amps Stability 1/10⁴
 Trim Coils 450 max. Amps Stability 4/10⁴
 Stored Energy (cryogenic) MJ
 WEIGHT: Iron 240 tonnes Conductor 30 tonnes
 ION ENERGY: Bending Limit E/A = 160 q²/A² MeV/u
 Focussing Limit E/A = 36 q/A MeV/u

ACCELERATION SYSTEM

FUNDAMENTAL ACCELERATION:
 Description: two 45 deg dees with movable stem...
 No. of Gaps/turn 4 dE/dn(max) 0.3 MeV/q
 Voltage(max) 0.075 MV Harmonic f_{rf}/f_{ion} 1, 2, 3, 4
 Freq 12-21 MHz Power in(max) 2x0.12 MW
 Stability: Phase ±1 deg Voltage 1/10⁴
 OTHER CAVITIES (Flattopping or otherwise):
 Description:
 Region of Influence: R_{min} cm R_{max} cm
 No. of Gaps/turn dE/dn(max) MeV/q
 Voltage(max) MV Harmonic f_{rf}/f_{ion}
 Freq MHz Power in(max) MW
 Stability: Phase Voltage

VACUUM SYSTEM

OPERATING PRESSURE: 1/10⁶ Tr
 PUMPS: No. and type 4 oil diffusion pumps
1700 l/s each, liquid nitrogen traps.....

ION SOURCE(S)

| Type | Intensity (mA) | ϕ (πmm mrad) | ε _n = βγϵ (πmm mrad) | Ion Species |
|-----------------------------|----------------|--------------|---------------------------------|-------------|
| (a) PIG hot cath. | | | | |
| (b) ECR (under development) | | | | |
| (c) | | | | |
| (d) | | | | |

INJECTION SYSTEM

PIG at centre region Efficiency %

EXTRACTION SYSTEM

stripping Efficiency %

CHARACTERISTIC BEAMS

| Accelerated Ions | E/A (MeV/u) | Current(part μA) | |
|------------------|-------------|------------------|----------|
| | | Internal | External |
| (a) | | | |
| (b) | | | |
| (c) | | | |
| (d) | | | |

| Secondary Particles | E (MeV) | part/sec |
|---------------------|---------|----------|
| (a) | | |
| (b) | | |
| (c) | | |

EXTRACTED BEAM PROPERTIES:

For μA of MeV/u ions
 ΔE/E % Δφ °rf
 ε_n = βγϵ x πmm mrad z πmm mrad

FACILITIES FOR RESEARCH

SHIELDED AREA: Fixed 30 m² Moveable 1300 m²
 Target Stations: 7 No. Served At Same Time: 1
 MAGNETIC SPECTROMETERS:
 OTHER FACILITIES: Energy monochromatization
 by two 120 deg magnets.....

REFERENCES/NOTES

(a)
 (b)

PLAN VIEW OF FACILITY, COMMENTS

