Entry: C31
Date: June 1998
Machine Name: Chandigarh Variable Energy Cyclotron
Institution: Panjab University
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HISTORY
Design by: Prof. H.W. Fulbright
Construction time: 1965-70
First beam: 1971

CHARACTERISTIC BEAMS
ions / energy (MeV/n) / current (pps) / power (W) :
$^{1}H^{+}$ - 2-5 20
$^{2}H^{+}$ - 2 10
$^{3}H^{+}$ - 2-3 2
$^{4}He^{+}$ - 2 2
transmission efficiency (total)
- typical: % - best: %
transverse emittance (rms)
- vertical: π mmmrad
- horizontal: π mmmrad
longitudinal emittance (rms): ΔE/E.deg RF

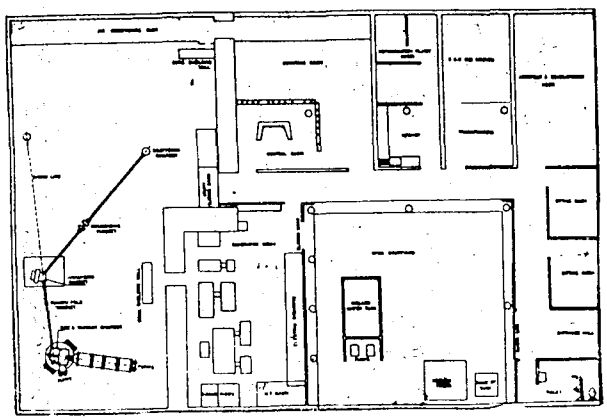
USES
basic research: 50 % therapy: %
development: 5 % isotope production: 10 %
other applications: 20 % maintenance: 10 %
beam tuning: 5 %
total time: 1500 h/year

TECHNICAL DATA
a) magnet
type:
Kb: MeV/A Kf: MeV/A
average field (min-max): 8-14 T
number of magnet sectors: -
- angle: - deg
- spiral (max): - deg
pole parameters
- diameter: .6 m
- injection radius: 0 m
- extraction radius: .28 m
hill gap: m valley gap: m
field trimming
- trim coils
- number:
- current (max): A
- harmonic coils
- number:
- current (max): A
- others
- number:
- current (max): A
main coils: 4
- number:
- Ampere-turns: A.T.
- current: 100A each at 100 Volts
stored energy: MJ
weight : - iron: 20 t - coils: t
power
- main coils (total): 40 kW
- trim coils (total max): kW
- refrigerator (cryogenic): kW
b) RF
- acceleration
- frequency range: 10-20 MHz
- harmonic modes:
- number of dees: 1
- angular aperture: 180 deg
- voltage:- average (min-max): 10-40 kV
- variation with radius:
-
- power in (max): 25 kW
- stability: - phase: deg - voltage: %
- other cavities
- purpose:
- frequency range: MHz
- region of influence: m
- voltage (max): kV
- power in (max): kW
- stability:- phase: deg - voltage: %
c) injection Hooded Are Type
- internal source:
- external (radial/axial):
- elements:
- source voltage: .2 kV
- injection energy: MeV/n
- buncher:
- injection efficiency: %
d) ion sources/injector
Hooded Arc Type
e) extraction
- elements, characteristics:
-
- Electrostatic Deflector
-
-
- efficiency
- typical: % - best: %
f) vacuum
- pumps: Diffusion Pumps, Kinney Rotary pumps
- achieved vacuum: Pa

REFERENCES
This cyclotron was built around 1953-54 at Univ.of Rochester,USA. This has been shifted to,modified &reinstalled at Chd. in 1971.

EXPERIMENTAL FACILITIES
55 cc Ge(Li) Detector, PC-based data acquisition system, and associated electronics

PLAN VIEW OF FACILITY



COMMENTS