

ENTRY NO. 47

NAME OF MACHINE Meditron
 INSTITUTION Nihon Medi-Physics Co., Ltd. Takarazuka Facility
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 IN CHARGE H. Tobiki REPORTED BY Y. Tanaka

HISTORY AND STATUS

DESIGN, date Model tests TCC CS-30
 ENG DESIGN, date
 CONSTRUCTION, date Aug.-Nov., 1974
 FIRST BEAM, date (or goal) Nov., 1974
 MAJOR ALTERATIONS Addition of Yoke Iron
New Magnet PS

COST, ACCELERATOR
 COST, FACILITY, total
 FUNDED BY Nihon Medi-Physics Co., Ltd.

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ENGINEERS 5
 TECHNICIANS 7 CRAFTS
 GRAD STUDENTS involved during year
 OPERATED BY Research staff or Operators
 OPERATION hr/wk. On target hr/wk
 TIME DISTR. in house 100 %, 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) 96 cm, R-extraction 42 cm
 R injection cm
 GAP, min cm, Field kG
 max cm, Field kG at
 AVERAGE FIELD at R ext 17.5 kG Ampere turns
 B max / < B >

NUMBER OF SECTORS [compact separated] Spiral, max deg
 SECTOR ANGLE (SSC) deg
 TRIMMING COILS

CONDUCTOR, material and type
 STORED ENERGY (cryogenic) MJ
 POWER: main coils 50 max kW: current stability 10⁻⁵
 trimming coils max kW: current stability
 WEIGHT: Fe 20 tons: coils tons
 COOLING system
 ION ENERGY (Bending limit) E/A = q²/A² MeV/amu
 (Focusing limit) E/A = q/A MeV/amu

ACCELERATION SYSTEM

DEES, number 2 angle 90 deg
 BEAM APERTURE cm; DC Bias 1.5 kV
 TUNED by, coarse fine
 RF to MHz, stable ±
 Orb F to MHz
 HARMONICS, RF/Orb F, used
 DEE-Gnd, max kV, min gap cm
 STABILITY, (pk-pk noise)/(pk RF volt)
 ENERGY GAIN, max kV/turn
 RF PHASE, stable to ± deg
 RF POWER input, max. kW
 FREQUENCY MODULATION, rate /s
 modulator, type
 beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 5 x 10⁻⁶ Torr or mbar
 PUMPS, No, Type, Size 1 x 10" D.P.
1 x 4" D.P.

ION SOURCES

PIG type

INJECTION SYSTEM

EXTRACTION SYSTEM

Deflector & Magnetic Channel

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed m²; movable m²
 TARGET STATIONS 3 in 1 rooms
 STATIONS served at same time, max
 MAG SPECTROGRAPH, type
 COMPUTER model
 OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV)		CURRENT (µA)	
	Goal	Achieved	Internal	External
proton	26	26	200	50
SECONDARY			(part/s)	

BEAM PROPERTIES

MEASURED		CONDITIONS	
PULSE WIDTH	RF deg	µA of	MeV ions
PHASE EXC. max	RF deg	µA of	MeV ions
EXTRACT eff	%	µA of	MeV ions
RESOL ΔE/E	%	µA of	MeV ions
EMITTANCE			
(π mm-mrad)	axial rad	µA of	MeV

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS
 BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS

REFERENCES/NOTES

- 1)
- 2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.