

ENTRY No. 52

NAME OF MACHINE NTT CYCLOTRON DATE June 7, 1989
INSTITUTION NTT Opto-electronics Laboratories
ADDRESS Tokai, Ibaraki 319-11 (Japan)
TEL TELEX
IN CHARGE T. SHIGEMATSU REPORTED BY H. YONEZAWA

HISTORY AND STATUS

DESIGN, date Model tests
ENG DESIGN, date
CONSTRUCTION, date October 1984
FIRST BEAM, date (or goal) October 1984
MAJOR ALTERATIONS

COST, ACCELERATOR
COST, FACILITY, total
FUNDED BY

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT
SCIENTISTS ENGINEERS
TECHNICIANS CRAFTS

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) cm, R extraction 37.5 cm
R injection cm

GAP, min cm, Field kG }
max cm, Field kG } at
AVERAGE FIELD at R ext 15.4 kG } Ampere turns
B max/ < B >

NUMBER OF SECTORS { compact } Spiral, max deg
{ separated }

SECTOR ANGLE (SSC) deg
TRIMMING COILS

CONDUCTOR, material and type
STORED ENERGY (cryogenic) MJ

POWER: main coils max, kW; current stability
trimming coils max, kW; current stability

WEIGHT: Fe tons; coils tons
COOLING system
ION ENERGY (bending limit) E/A = q²/a² MeV/amu
(focusing limit) E/A = q²/a² MeV/amu

ACCELERATION SYSTEM
DEES, number ; angle deg
BEAM APERTURE cm; DC Bias kV

TUNED by, coarse fine
RF 29.7 to 47 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 Torr or mbar
PUMPS, No, Type, Size

ION SOURCES

INJECTION SYSTEM

EXTRACTION SYSTEM

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed m²; movable m²
TARGET STATIONS in rooms
STATIONS served at same time, max

MAG SPECTROGRAPH, type
COMPUTER model
OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV)		CURRENT (pμA)	
	Goal	Achieved	Internal	External
p	1.8-1.6			50
d	3.6-8			20
³ He	5.4-2.1			10
⁴ He	6.5-1.6			10

SECONDARY (part/s)

BEAM PROPERTIES

MEASURED	CONDITIONS	
	RF deg	μA of MeV ions
PULSE WIDTH		
PHASE EXC, max		
EXTRACT eff		
RESOL ΔE/E		

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

OPERATING PROGRAMS, time distribution
BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS
BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS

Ion Beam Analysis

REFERENCES/NOTES

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS