

ENTRY NO. 107

NAME OF MACHINE .Electron model relativistic ring cyc..... DATE .August 1978.....
INSTITUTION .Joint Institute for Nuclear Research, Lab Nucl. Probl.....
ADDRESS .JINR, Head Post Office, P.O. Box 79, Moscow - USSR.....
TEL TELEX
IN CHARGE .Pr. V.P. Dzhelepov..... REPORTED BY .Pr. V.P. Dzhelepov.....

HISTORY AND STATUS

DESIGN, date 1964..... Model tests 1964-66.....
ENG DESIGN, date 1966-67.....
CONSTRUCTION, date 1967.....
FIRST BEAM, date (or goal) 1967.....
MAJOR ALTERATIONS 1974, 1977.....

COST, ACCELERATOR
COST, FACILITY, total
FUNDED BY

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS1..... ENGINEERS2.....
TECHNICIANS2..... CRAFTS2.....

GRAD STUDENTS involved during year
OPERATED BY Research staff or Operators
OPERATION25..... hr/wk. On target hr/wk
TIME DISTR. in house100..... % Outside %
BUDGET, op & dev
FUNDED BY

RESEARCH STAFF, not included above

USERS, in house14..... outside
GRAD STUDENTS involved during year
RESEARCH BUDGET, in house
FUNDED BY JINR.....

MAGNET

POLE FACE, diameter (compact) .240.. cm, R extraction .101 cm
R injection cm
GAP, min8. cm, Field kG }
min8. cm, Field kG }at
AVERAGE FIELD at R ext kG } Ampere turns
B max/ < B >2.06 }
NUMBER OF SECTORS { compact8..... } Spiral, max .60 deg
 { separated }
SECTOR ANGLE (SSC) deg }
TRIMMING COILS

CONDUCTOR, material and type
STORED ENERGY (cryogenic)4 MJ
POWER: main coils80..... max, kW; current stability 10.....
trimming coils20..... max, kW; current stability

WEIGHT: Fe tons; coils tons
COOLING systemwater.....
ION ENERGY (bending limit) E/A = q²/a² MEV/amu
(focusing limit) E/A = q/a MeV/amu

ACCELERATION SYSTEM

DEES, number2..... ; angle45 deg
BEAM APERTURE .2..... cm; DC Bias kV
TUNED by, coarse ..MS..... fine ..VC, auto.....
RF39.5..... to MHz, stable \pm $5 \cdot 10^{-6}$
Orb F ..39.5..... to MHz
HARMONICS, RF/Orb F, used1.....
DEE-Gnd, max kV, min gap cm
STABILITY, (pk-pk noise)/(pk RF volt) $5 \cdot 10^{-2}$
ENERGY GAIN, max2..... kV/turn
RF PHASE, stable to \pm 5..... deg
RF POWER input, max40..... kW
FREQUENCY MODULATION, rate /s
modulator, type
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE1 μ Torr or mbar
PUMPS, No, Type, Size
.....9 diffusion pumps.....

ION SOURCES

.....electron injector..... (6 keV).....

INJECTION SYSTEM

EXTRACTION SYSTEM

.....Closed orbit expansion.....

FACILITIES FOR RESEARCH

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

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV)		CURRENT (μ A)	
	Goal	Achieved	Internal	External
.....e ⁻0.4.....1000.....
SECONDARY	(part/s)			

BEAM PROPERTIES

MEASURED	CONDITIONS	
	MEASURED	CONDITIONS
PULSE WIDTH.....20..... RF deg100 μ A of ..0.4 MeV ..e ⁻	
PHASE EXC. max.....RF deg μ A of MeV ions	
EXTRACT eff% μ A of MeV ions	
RESOL $\Delta E/E$% μ A of MeV ions	
EMITTANCE (π mm. mrad) {axial } {rad } μ A of MeV	

OPERATING PROGRAMS, time distribution

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

REFERENCES/NOTES

PLAN VIEW OF FACILITY, COMMENTS, ETC.