

**The Accelerating Cavity of the Racetrack Microtron
Eindhoven,** J.I.M. BOTMAN, J.E. COPPENS,
R.W. de LEEUW, T. DROUEN, H.L. HAGEDOORN,
C.J. TIMMERMANS, Cyclotron Laboratory,
Eindhoven Univ. of Technology; P. BRINKGREVE,
Central Design and Engineering Facilities, Eindhoven
Univ. of Technology - The bi-periodic standing wave
on axis coupled cavity of the Racetrack Microtron
Eindhoven accelerates the 10 mA 10 MeV injected
electron beam in 13 steps to the final energy of
75 MeV. The 45 cm long 3 GHz structure consists of 9
accelerating and 8 pancake-like coupling cells and has
been designed and constructed in-house. The
fabrication and testing of the structure has been
completed. Due to the fact that a standard CNC lathe
was used for the production of the constituting parts
special attention has been given to the tuning
procedure. This paper presents details on the cavity
construction and brazing. Measurement results are
presented on the field profiles, the quality factor, the
shunt impedance, the generator to resonator coupling
and on the high power RF test with a magnetron as
power source. The agreement between measured and
calculated parameters is excellent.