

The Choice of Accelerating Structure for PET System, O.I. DRIVOTIN, A.E. LOUKIANOVA, D.A. OVSYANNIKOV, SPbSU, Yu.N. GAVRISH, Yu.A. SVISTUNOV, M.F. VOROGUSHIN, NIIEFA - Project of compact 8 MeV deuteron linac for PET isotopes production is proposed. It includes surface plasma source of D^- ions, preaccelerating system of ion beam up to 60 keV, 2.5 meter 433 MHz RFQ cavity and 1.5 m 433 MHz APF (alternate phase focusing) H-type resonator with drift tubes. Output deuteron energy of RFQ is 2 MeV. APF resonator accelerates deuterons from 2 up to 8 MeV. Target problem is discussed briefly. Original software environment has been developed for computing of electrodes geometry of RFQ and gaps geometry of APF structure with using of mathematical methods of the beam dynamics optimization. RF system is based on endotron type devices. Total length of accelerator is near 6 metres.