

Electron Accelerators with Concentrated Beam Ejection to the Atmosphere for Beam Extra-Vacuum Technologies, O.A. GORSHKOV,

A.S. KOROTEEV, R.N. RIZAKHANOV, KERC - A description of powerful electron accelerators with concentrated beam ejection to the atmosphere, operating in continual regime, that were developed by Keldysh Research Center of Russian Space Agency, is presented. The investigations on electron-beam subject are being carried out at KERC for more than 25 years. They are started at the beginning of the seventies within the programme of development of advanced space power propulsion systems based on gas-cycle nuclear reactor. The description of the small-sized plant, which allows generating continual electron beam with energy in the range from 60 to 100 keV and power of up to 40 kW in atmosphere is given in this paper. The analysis of usage peculiarities of electron accelerators with concentrated beam ejection in the systems for cleaning waste gases of thermal power stations from toxic components is carried out. Besides there is a description of KERC accelerating unit of experimental-industrial plant for gas cleaning in Tcherepetskaya power plant. The data on the electron-beam hardening of steel in atmosphere are presented too.