CALIBRATION OF ELECTRON BEAM MEASURING CHANNELS IN TECHNOLOGICAL LINACS

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Technologies based on electron (bremsstrahlung) irradiation demand continuous monitoring of the main parameters (energy, current, position etc.) and periodic calibration of the beam control system as well. Recently a number of technological electron linacs of energy 10…30 MeV and pulse current up to 1A have been put in operation in National Science Center "Kharkov Institute of Physics & Technology". Each of them is provided with system for scanning of output beam within the limits of 50 x 200 mm. The inductive wide-aperture non-disturbing transducer has been designed to control energy and beam position within exit window of the accelerator. The monitor is provided with appropriate electronic set up. For its calibration relative to electron energy and beam current value the combined measuring transducer of calorimeter-Faraday cup type was elaborated. The report contains results of computer modelling, design and investigation of transducers as well as their application in control systems of accelerators.