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Pyroelectric Deflector of 7 MeV Electron Beam

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Pyroelectric deflector of 7 MeV electron beam

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We have observed a deflection of relativistic electrons beam with an energy of 7 MeV in a transverse electric field, which is created by means of a pyroelectric deflector [1]. The experiment was performed on the microtron of the “Pakhra” accelerator complex in Lebedev Physical Institute. The deflection of the beam for angle of 1.43^0 was observed on a fluorescent screen installed at a distance of 70 cm from the deflector. The transverse electric field strength generated by the pyroelectric deflector was 75 kV / cm when the crystals were heated from room temperature to 50 ^{0}C. Experimental data are compared to calculations. The perspectives of creating a pyroelectric undulator are discussed.

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References

1. A.N. Oleinik, A.S. Kubankin, R.M. Nazhmudinov, K.A. Vokhmyanina, A.V. Shchagin and P.V. Karataev, Pyroelectric deflector of charged particle beam. // JINST (2016) 11, P08007.

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