

# LXXII International conference "Nucleus-2022: Fundamental problems and applications"

Contribution ID: 223

Type: **Oral talk (15 min + 5 min questions)**

## The experimental research of cyclotron DC-280 work

*Friday, 15 July 2022 11:00 (20 minutes)*

The DC280 is the high current cyclotron with design beam intensities up to 10 pμA for ions with energy from 4 to 8 MeV/nucleon. It was developed and created at the FLNR JINR. The first was extracted from the cyclotron on January 17, 2019. Experiments on acceleration of  $^{84}\text{Kr}$ ,  $^{12}\text{C}$ ,  $^{40}\text{Ar}$ ,  $^{48}\text{Ca}$ ,  $^{48}\text{Ti}$ ,  $^{52}\text{Cr}$  and  $^{54}\text{Cr}$  beams production were carried out. The following intensities of accelerated beam have been achieved: 1.43 pμA for  $^{84}\text{Kr}+14$ ; 10 pμA for  $^{12}\text{C}+2$ ; 9,2 pμA for  $^{40}\text{Ar}+7$ ; 7,7 pμA for  $^{48}\text{Ca}+7$ . The long time experiments were done in 2020-2022. The features of work of High Voltage axial injection systems, buncher systems and Flat-top systems were explored. The work of accelerator was stable and high efficiency. The total acceleration efficiency from ion source to transport channel was about 46%.

### The speaker is a student or young scientist

No

### Section

1. Design and development of charged particle accelerators and ionizing radiation sources

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