

Trajectory Simulation of Ion Beam from Duoplasmatron Ion Source

Wednesday, May 20, 2015 2:00 PM (3h 30m)

This project aims to study about structure and function of Duoplasmatron ion source in Tandem accelerator. We used program SIMION to simulate ion beam from Duoplasmatron ion source. If we use SIMION, we can get appropriate parameters that show the best ion beam. The best ion beam is the beam that has little spread and looks parallel. After simulation the ion beam with SIMION, result show that the best ion beam occurred when an anode 0 volt, extractor -10 kilovolts, einzel lens, respectively. The experimental set up comprise of three conditions as following: are Einzel lens comprise of section 1 and 3 set as 0 volt and einzel lens section 2 which is the middle section set as -10 kilovolts. Result showed that the ion beam from experiment are close to parallel and have a little spread, like result from simulation. So, the simulation from SIMION can help us to save time, materials and money to pay from repeated the experiment several times.

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Session Classification: Poster-1

Track Classification: Accelerators and Synchrotron Radiations