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Diagnostics of the efficiency of a stripping target of the Vacuum Insulated Tandem Accelerator

Ia. Kolesnikov[1, 2], A. Koshkarev[1, 2], I. Shchudlo[1, 2], S. Taskaev[1, 2]

[1]Budker Institute of Nuclear Physics, Novosibirsk, Russia
[2]Novosibirsk State University, Novosibirsk, Russia

Diagnostics is proposed and developed for measuring the efficiency of stripping a beam of negative ions in a gas stripper of tandem type charged particle accelerator. The coefficient of ion-electron emission during the bombardment of copper by 1 MeV protons was measured. A bending magnet with a horizontal channel was installed which made it possible to place the Faraday cup and absorb a flux of neutrals formed in a stripper as a result of incomplete stripping of negative ions. Diagnostics of the efficiency of a gas stripper was implemented, using the measurement of the electron current emitted from the surface of the Faraday cup when it is bombarded with a directed flux of neutrals and the measurement of the proton beam current with a DC non-destructive current transformer.

Keywords:
vacuum insulated tandem accelerator, epithermal neutron source, gas stripper.

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