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Design and commissioning of a versatile surface ion source

A compact surface ion source was designed and commissioned for commissioning the low energy beam facilities of ARIEL facility at TRIUMF. The ion source was based on the principle of surface ionization, in which ions are generated from a neutral atom by impact with a solid surface. The design of the ion source considered several factors, including the type of ion beams, beam intensity, the beam energy, and the beam emittance of the extracted ion beams from the source. Commercially available alkali material with an ionizer are used in the source and it is integrated with the in house design of extraction and transport system. Its performance was characterized using diagnostics techniques, and its key parameters, such as beam current, emittance, and beam species, were measured. The results showed that the compact surface ion source was able to achieve high ionization efficiency and stable operation, and was suitable for use in commissioning and operation of various ion beam facilities in particle accelerator laboratories.

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Yes

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