

The Daresbury Polarized Heavy Ion Source

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The proposal to build a heavy ion source on the NSF tandem accelerator at Daresbury was accepted late in 1982, with funding becoming available in 1983. The source is of the atomic-beam type and the design is based on the proven Heidelberg facility. In the first place production of polarized sodium and lithium ions is planned, with other ion species envisaged in the future.

The general layout of the source is shown in Figure 1. The source is housed on a dedicated high voltage platform at the top of the accelerator tower building.

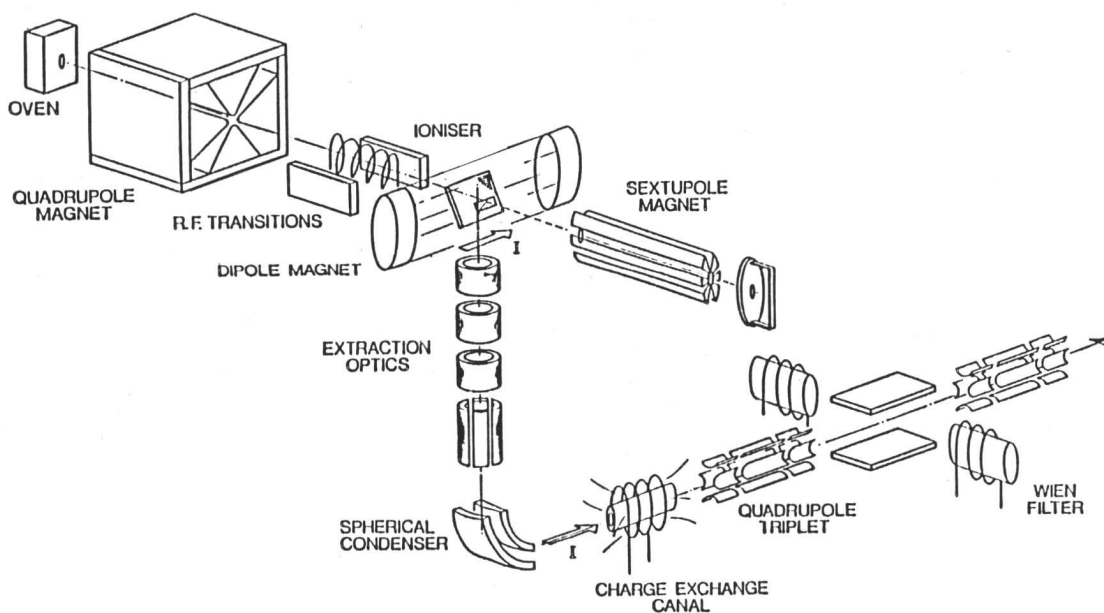


Fig. 1. Layout of the polarized heavy ion source.

The source and ancillary equipment, including a shaft driven power generator, are arranged on the platform to provide sufficient space for a light ion polarized source. At the time of writing, the source is assembled on the platform with the exception of the charge exchange and Wien filter units which are prepared for testing. Commissioning of the source is in progress, commencing with the atomic beam line using a sodium recycling oven. A satisfactory atomic sodium beam intensity has been obtained, measured at the exit of the diagnostic sextupole magnet unit.