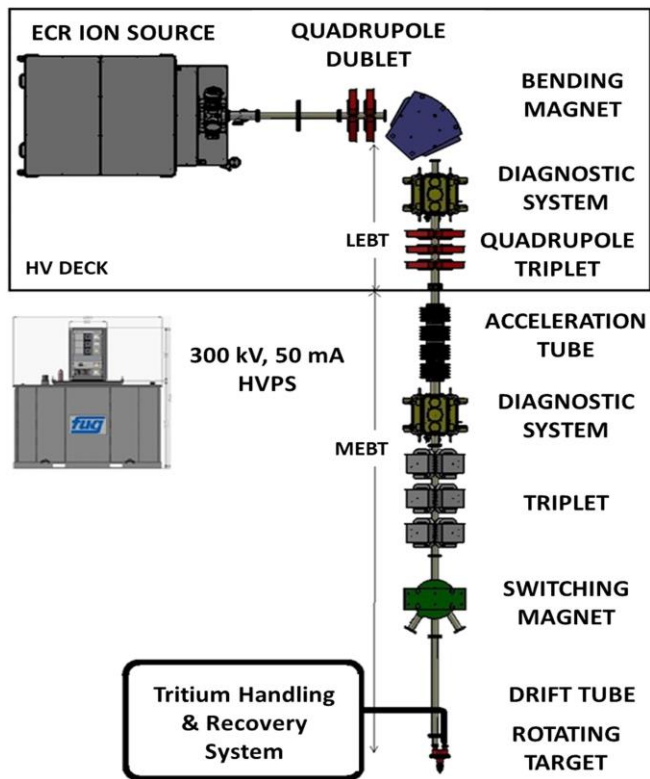


# Physics design of 14 MeV neutron generator facility at the Institute for Plasma Research

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Neutron generator and associated systems

This publication elaborates the physics design and specifications of linear accelerator based 14 MeV neutron generator, developed at IPR. In this generator system 20 mA of  $D^+$  current is accelerated to 300 keV and made to collide with a 20 Ci tritium target to produce a maximum of  $1.6 \times 10^{12}$  neutrons per second.

Such a high energy neutron environment could be used to perform tritium breeding, dpa, shielding, nuclear reaction cross-section data experiments for fusion materials. The research scope could be extended to medical radioisotopes production research and semiconductor devices irradiations.

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