

Encapsulated Sulfur Targets

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A new method was developed to produce enriched Sulfur targets. This was made possible by inserting sulfur in-between two 0.5 mm Mylar foils (C₁₀H₈O₄). The aim is to ensure that sulfur targets reduces by no more than 50% of the initial thickness within 24 hours under the equivalent of 10 J of integrated energy deposition by a proton beam. There is no loss of enriched material while making the target, as all the material is deposited within the surface area to be exposed to the beam. The targets were frequently swivelled in order to expose each part of the target to the beam and achieved homogeneous irradiation. Thickness of 0.4 mg/cm² targets were produced decreasing by a factor of two over 8 hour period irradiation using a 3 MeV proton beam of 6 nA intensity (nearly 30 J).

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