

## Proton-11Boron Fusion Revisited

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The easiest fusion reaction to achieve energy gain is  $D+T \rightarrow \alpha+n$ . However, this reaction has the disadvantages of releasing neutrons with energy approximately 14 MeV and tritium is an unstable isotope of hydrogen. One of the most promising fusion reactions, which is  $p+^{11}\text{B}$ , has been gaining considerable attention of researchers for its negligible radioactivity. Unfortunately, the existing literature shows a discrepancy in measured cross section.

At present, we studied this reaction by measuring the cross section of the reaction. The experiment was conducted at the Shanghai Institute of Applied Physics, Chinese Academy of Sciences. The cross section for the  $^{11}\text{B}(p,\alpha)\alpha$  reaction has been measured using proton beams of energies from 500 keV to 1.35 MeV. The proton beams were provided by a 4 MV electrostatic accelerator and bombarded on a boron target of  $400\mu\text{g}/\text{cm}^2$  thickness. The  $\alpha$  particles are detected at  $15^\circ$  and  $165^\circ$  in the lab frame.

### References

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