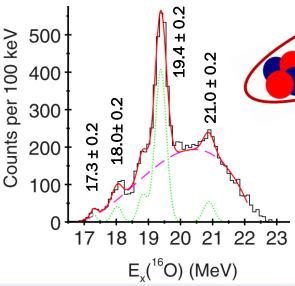
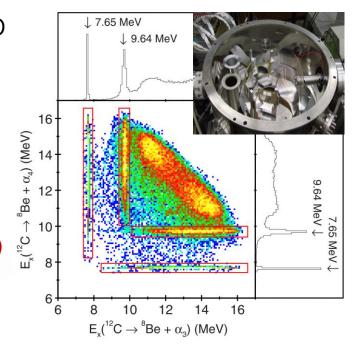
Alpha clusters in ¹⁶O

Alpha cluster structures in light nuclei like ¹⁶O are of great interest in both nuclear structure and astrophysics, in particular, the helium burning process in stars. The ⁸Be+⁸Be and ¹²C+ α breakup states in ¹⁶O have been populated via the ¹³C(⁴He,4 α)n reaction at the University of Notre Dame FN tandem accelerator.





Four-alpha coincident events were measured by an array of four double sided silicon strip detectors. Observation of the cluster states could shed new light on the possible existence of the four- α linear chain structure in ¹⁶O and potentially enhance the helium burning rate in stars .

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