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Laser Photo Detachment for Sr-90 Detection

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The rare radioisotope Sr-90 is one of the most important products of thermal neutron fission. On one hand, the Sr-90 yield from fission is relatively large; on the other hand, ⁹⁰Sr is known for its bone-seeking radiotoxicity and the risk of causing bone cancer. Currently, researches related to ⁹⁰Sr are facing the challenge of measuring the concentration of Sr-90 environmental samples, which could be as low as $^{90}\text{Sr}/^{88}\text{Sr} \approx 10^{-14}$.

Based on this challenge, we're now trying to apply laser photo-detachment on the measurement of Sr-90 at Micro Analysis Laboratory Tandem accelerator, The University of Tokyo (MALT), contents of this report will be focused on the experiments and simulations of LPD on a test bench.

Student Submission

Yes

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