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L-SHELL X-RAY PRODUCTION CROSS SECTIONS IN 39Y, 64GD AND 83BI INDUCED BY 0.1-2.0 MEV/U HEAVY IONS

The availability of accurate and reliable heavy ion-matter interaction database is very crucial for the utilization of different heavy ion beam analytical techniques such as heavy Particle Induced X-ray Emission, heavy ion Elastic Recoil Detection Analysis (ERDA), etc. It is, therefore, expedient to expand the existing global database of basic ion-atom interaction phenomena by adding new experimental data of heavy ion induced X-ray production cross sections in elemental films.

In this work, the production cross sections of L-shell X-rays of some rare earth elements induced by 12C, 35Cl, and 64Cu ions were measured in the energy range of 0.2-1.0MeV/u. The experimental results were compared with ECPSSR and PWBA predictions. Agreements and discrepancies between theory and experimental data are discussed in terms of how theory describes different ionization mechanisms at play during ion-atom collisions

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YES

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 (Hons, MSc,
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PHD

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