Title : Computational Analysis of PIXE Spectra for Enhanced Elemental Identification

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ABSTRACT

Particle-Induced X-ray Emission (PIXE) is a widely used technique for elemental analysis, where x-rays emitted from a sample upon proton bombardment provide characteristic signatures of specific elements. One of the general approaches for analyzing PIXE spectra is computational processing, which allows for precise identification of elemental composition. In this study presents a computational approach for analyzing PIXE spectra and evaluates its accuracy by comparing the results with established research databases. Preliminary findings reveal discrepancies, including mismatched x-ray energies for certain elements and cases of undetected elements. Consequently, improvements in spectral processing techniques are being explored to enhance element identification and increase compatibility with other PIXE analysis softwares.

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