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Proton Induced X-Ray Emission (PIXE): Determining the Concentration of Samples MALLORY MCCARTHY, ALIS RODRIGUEZ MANSO, YASMIN PAJOUHAFSAR, SHERRY J YENNELLO , Texas AM University — We used Proton Induced X-ray Emission (PIXE) as an analysis technique to determine the composition of samples, in particular, the elemental constituents and the concentrations. Each of the samples are bombarded with protons, which in result displaces a lower level electron and causes a higher level electron to fall into its place. This displacement produces characteristic x-rays that are fingerprints for each element. The protons supplied for the bombardment are produced and accelerated by the K150 proton beam in the Cyclotron Institute at Texas AM University. The products are detected by three x-ray detectors: XR-100CR Si-PIN, XR-100SDD, and XR-100T CdTe. The peaks of the spectrum are analyzed using a software analysis tool, GUPIXWIN, to determine the concentration of the known elements of each particular sample. The goals of this work are to test run the Proton Induced X-Ray Emission experimental set up at Texas AM University (TAMU) and to determine the concentration of thin films containing KBr given by the TAMU Chemical Engineering Department.

Mallory McCarthy
Texas A
M University

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