

Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Particle Induced X-Ray Emission experiment using the K150 3.6 MeV proton beam at TAMU Cyclotron Institute¹ YASMIN PAJOUHAF-SAR, Texas AM University Cyclotron Institute, ALIS MANSO RODRIGUEZ TEAM, SHERRY YENNELLO TEAM — Particle Induced X-Ray Emission (PIXE) is a non-destructive analytical technique that is used for various tasks, such as elemental composition. The x-rays are emitted when electrons transition from higher to lower energy levels, causing vacancies in the atom's electron configuration. The overall goals of this research are to successfully set up a PIXE experiment and to obtain elemental concentrations for various samples, using the K150 proton beam in the Cyclotron Institute at Texas AM University. The x-rays produced are unique to each element and analyzed with reference to their known energies. The setup consists of 3 different detectors, providing a wide range of energies: XR-100T CdTe γ /X-Ray, XR-100T/CR Si and XR-100SDD. Accelerating 3.6 MeV protons from the K150 and using PIXE, we determine concentrations from the NaCl samples provided by the Chemical Engineering Department. The concentrations for each element found in the NaCl thin films are obtained and analyzed through the software, GUPIXWIN.

¹DOE Grant (DE-FG02-93ER40773) and Welch Foundation (A-1266)

Yasmin Pajouhafsar
Texas A
M University Cyclotron Institute

Date submitted: 01 Aug 2017

Electronic form version 1.4