Abstract Submitted for the DNP11 Meeting of The American Physical Society

**PIXE Analysis of Indoor Aerosols** CHRISTOPHER JOHNSON, COLIN TURLEY, ROBERT MOORE, MARIA BATTAGLIA, SCOTT LABRAKE, MICHAEL VINEYARD — We have performed a proton-induced X-ray emission (PIXE) analysis of aerosol samples collected in academic buildings at Union College to investigate the air quality in these buildings and the effectiveness of their air filtration systems. This is also the commissioning experiment for a new scattering chamber in the Union College Ion-Beam Analysis Laboratory. The aerosol samples were collected on Kapton foils using a nine-stage cascade impactor that separates particles according to their aerodynamic size. The foils were bombarded with beams of 2.2-MeV protons from the Union College 1.1-MV Pelletron Accelerator and the X-ray products were detected with an Amptek silicon drift detector. After subtracting the contribution from the Kapton foils, the X-ray energy spectra of the aerosol samples were analyzed using GUPIX software to determine the elemental concentrations of the samples. We will describe the collection of the aerosol samples, discuss the PIXE analysis, and present the results.

Christopher Johnson

Date submitted: 29 Jul 2011

Electronic form version 1.4