

Abstract Submitted
for the NWS05 Meeting of
The American Physical Society

Nanosecond spectroscopy of trapped ion samples in a linear Paul trap LOUIS POIRIER, ROBERT I. THOMPSON, University of Calgary — This presentation will examine the use of visible nanosecond laser pulses to characterize trapped ion samples through the application of laser-induced fluorescence (LIF) spectroscopy techniques. A XeCl pumped dye laser system is used to produce tunable nanosecond laser pulses in the visible and ultraviolet region of the spectrum. The LIF spectra, detected at 105° to the incident laser path, can be used to non-destructively identify trapped ion species, and to determine some physical characteristics of the species, such as temperature. Experiments currently on-going in the laboratory include using LIF for ion-trap mass spectrometry (ITMS) calibration, and attempting to directly measure the rotational temperature of trapped CO^+ via ro-vibronic spectroscopy of the X – A transition near 455 nm.

This work is supported by NSERC.

Louis Poirier
University of Calgary

Date submitted: 08 Apr 2005

Electronic form version 1.4