

Abstract Submitted
for the CAL13 Meeting of
The American Physical Society

Development and Calibration of a Ruby Fluorescence Pressure Measurement System BLAINE BUSH, PETER KLAVINS, MATTHEW LAWSON, KENT SHIRER, NICHOLAS CURRO, University of California, Davis — We present an integrated system for continuous pressure measurements inside of a clamp-type pressure cell using ruby fluorescence. The conventional method is based on the superconducting transition temperature of tin, is slow, requires thermal cycling of the sample, and is magnetic field dependent. The ruby fluorescence method is based on the pressure-dependent frequency shift of the fluorescence lines of a small ruby chip. This method allows for rapid in situ pressure measurements, which eliminates the need to thermally cycle the pressure cell and allows for measurement of the pressure at any given temperature. Preliminary calibration data is also presented.

Blaine Bush
University of California, Davis

Date submitted: 04 Oct 2013

Electronic form version 1.4