

## **TR-409 Evaluation of Photoacoustic Spectroscopy for Quality Control of Cement**

**Key Words: Photoacoustic Spectroscopy, Cement, Mineral Analysis**

### **ABSTRACT**

This report discusses the feasibility of using infrared photoacoustic spectroscopy (PAS) as a viable technique that can quickly provide information on cement composition prior to use. The PAS technique is of interest because the cost is much lower than for other type of instrumentation used for mineral analysis, it requires virtually no sample preparation, and it can perform multi-component analysis in a matter of minutes. Feasibility of the technique was based on the ability of PAS to identify and quantify sulfate species and major cement matrix components. Strengths and limitations of the technique are presented.