**Advances in Optical Detection of Radiocarbon Dioxide**

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**Abstract**

Radiocarbon detection and analysis is of great importance due its applications in dating and tracer for earth science, archaeology, forensic science, environmental evaluation, material analysis, metabolism, pharmacology and so on. Besides the well-known accelerator mass spectrometry (AMS) and liquid scintillation counting (LSC), optical technologies such as linear absorption spectroscopy, optical feedback linear cavity enhanced absorption spectroscopy (CEAS), two-color cavity ring-down spectroscopy (CRDS) and saturated-absorption CRDS have been proposed and developed for the detection of radiocarbon dioxide. In this report, we review the advances in optical detection of radiocarbon dioxide.

***Key Words:*** *Radiocarbon; Optical Detection; Laser spectroscopy;CEAS;CRDS;*

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