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Cavity Ring-Down Spectroscopy Techniques and Applications

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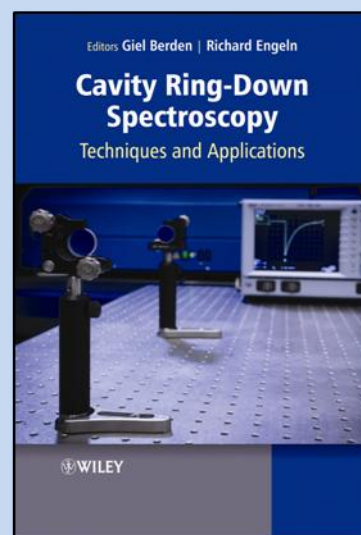
Cavity ring-down spectroscopy (CRDS) is a simple, highly sensitive direct absorption technique based on the rate of absorption of light circulating in an optical cavity. CRDS can be used to study atoms and molecules in the gas and condensed phase, and is especially powerful for measuring strong absorptions of species present in trace amounts or weak absorptions of abundant species. The technique can be applied in physical, atmospheric, environmental and analytical chemistry, also combustion science, physics, medical diagnostics and biology.

Cavity Ring-Down Spectroscopy: Techniques and Applications provides a practical overview of this valuable analytical tool, explaining the fundamental concepts and experimental methods, and illustrating important applications.

The book presents a complete and methodical approach to the topic and describes;

- Introductory concepts and basic experimental techniques,
- Useful variants such as continuous wave, phase shift, and broadband CRDS
- Recent developments in the field, and key applications, for example, spectroscopic studies of transient molecules, monitoring trace amounts of atmospheric species, analysis of exhaled breath in clinical diagnostics, and CRDS under extreme conditions.

Designed as both an introductory text and a reference source, this book is relevant for scientists unfamiliar with CRDS who are interested in using the technique in their research, as well as experienced users.



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